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Final Screening Level Ecological Risk Assessment

Diaz Chemical Corporation Site
Remedial Investigation/Feasibility Study
Holley, New York

December 12, 2011

CDM

FINAL SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
DIAZ CHEMICAL CORPORATION SITE
HOLLEY, NEW YORK
Work Assignment No. 012-RICO-02SN

Prepared for
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Acronyms and Abbreviations

amsl	above mean sea level
AST	aboveground storage tank
AT	additional target
BERA	baseline ecological risk assessment
bgs	below ground surface
BTAG	Biological Technical Assistance Group
BTEX	benzene, toluene, ethylbenzene, and xylenes
CDM	CDM Federal Programs Corporation
CFP	2-chloro-6-fluorophenol
COPC	chemical of potential concern
CSM	conceptual site model
DQI	data quality indicators
DQO	data quality objective
Duffy-Mott	Duffy-Mott Corporation
EC	exposure concentration
EcoSSL	ecological soil screening level
EPA	United States Environmental Protection Agency
ERAGS	Ecological Risk Assessment Guidance for Superfund
ERT	Environmental Response Team
ESL	ecological screening level
Genesee	Genesee Fruit Corporation
H&A	Haley & Aldrich
HQ	hazard quotient
K_{ow}	octanol/water partition coefficient
LOAEL	lowest-observed-adverse-effect level
M&P	Miller & Pettengill
NHP	Natural Heritage Program
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no-observed-adverse-effect level
NY	New York
NYSDEC	New York State Department of Environmental Conservation
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCBTF	4-chlorobenzotrifluoride
QAPP	quality assurance project plan
RAC	Remedial Action Contract
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/feasibility study
SLERA	Screening Level Ecological Risk Assessment
SMDP	scientific management decision point
SQuiRT	Screening quick reference tables
SVOC	semi-volatile organic compound
TAL	target analyte list
TCDD	2,3,7,8-tetrachlorodibenzodioxin
TCL	target compound list
TDS	total dissolved solids

TEF	toxicity equivalence factor
TEQ	toxicity equivalents
The site	Diaz Chemical Corporation Site
TOC	total organic carbon
TSS	total suspended solid
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
WHO	World Health Organization
µg/kg	microgram per kilogram
µg/L	microgram per liter

Executive Summary

CDM Federal Programs Corporation (CDM) received Work Assignment Number 012-RICO-02SN under the Remedial Action Contract (RAC) 2 program to perform a Remedial Investigation/Feasibility Study (RI/FS) for the Diaz Chemical Corporation Superfund Site (the site) for the United States Protection Agency (EPA), Region 2. The site is located in the Village of Holley, Orleans County, New York (NY).

The overall purpose of the work assignment is to evaluate the nature and extent of contamination at the site and to develop and evaluate remedial alternatives, as appropriate. This Screening Level Ecological Risk Assessment (SLERA), as part of the RI/FS, is intended to conservatively screen data in order to evaluate the potential for ecological risks associated with terrestrial and aquatic environments present within the study area.

The objective of this SLERA is to evaluate the potential ecological impact of contaminants at the site. Conservative assumptions are used to identify exposure pathways and, where possible, quantify potential ecological risks. This report is prepared in accordance with the following documents:

- EPA's 1997 *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments*, Interim Final
- EPA's 1998 *Guidelines for Ecological Risk Assessment*

Site Background
Between 1890 and 1974, the site operated as a food processing and cider production facility. In 1974, Diaz Chemical Corporation purchased the property for the onsite manufacture of specialty organic chemicals. Product lines varied over its years of operation; however, the primary products manufactured by Diaz were halogenated (containing chlorine, bromine, or fluorine) aromatics and substituted benzotrifluorides.

Over its years of operation, several spills and releases of various chemicals have been documented at the site. In June 2003, the company filed for bankruptcy and abandoned the facility with wastes and chemicals in place.

Contaminants determined as site-related were selected based on a review of site history including documented spills and releases, and results of previous investigations. These chemicals include halogenated benzenes, benzotrifluorides and substituted benzotrifluorides, 2-chloro-6-fluorophenol (CFP), and benzene, toluene, ethylbenzene, and xylenes, collectively referred to as BTEX.

Ecological Reconnaissance and Presence of Threatened and Endangered Species
An ecological reconnaissance was performed at the site. Areas included in the ecological reconnaissance consisted of the former facility, an unnamed creek and associated riparian areas south of the site, and the East Branch of Sandy Creek and associated riparian areas and a wooded parcel located east of the site.

Information regarding threatened and endangered species and ecologically sensitive environments that may exist at or in the vicinity of the site was requested from the EPA and the New York Department of Environmental Conservation (NYSDEC).

EPA reported that the United States Fish and Wildlife Service (USFWS) records indicate the bog turtle (*Clemmys muhlenbergii*) and Eastern prairie fringed orchid (*Platanthera leucophea*) are listed as being found within Orleans County. Further review of wetland maps, the New York State Herpetological Atlas, and historical records indicate that both species are unlikely to occur within the site or immediate surrounding areas.

NYSDEC reported that their records for the site and surrounding area indicated no known occurrences of rare or state-listed species, or significant natural communities and habitats.

Sample Collection and Analysis
The following environmental media samples were collected and evaluated in this SLERA:

- 158 surface soil samples
- 8 sediment samples
- 9 surface water samples
- 4 pore water samples

Summary and Conclusions
Based on a comparison of maximum detected concentrations of contaminants in site soil, sediment, surface water, and pore water to conservatively derived ecological screening levels (ESLs), the potential for ecological risk may occur. Specifically, hazard quotients (HQs) greater than 1.0 were calculated, which indicate potential risk from exposure to the following media-specific contaminants:

- Soil
  - Semi-volatile organic compounds (SVOCs): 2,4-dimethylphenol, 2-chloronaphthalene, 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene
  - Pesticides: 4,4'-DDE, 4,4'-DDT, endrin ketone, and methoxychlor
  - Dioxins/furans: 2,3,7,8-TCDD (based on total toxicity equivalence concentration)
  - Inorganics: antimony, arsenic, barium, copper, lead, mercury, selenium, thallium, vanadium, and zinc

- Sediment
  - SVOCs: acenaphthylene, atrazine, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene
  - Inorganics: nickel and zinc

- Surface Water
  - Inorganics: aluminum, barium, lead, and manganese
- Pore Water
  - Inorganics: aluminum, barium, and manganese

Potential risk from the following media-specific contaminants cannot be concluded as ESLs are not available for these compounds:

- Soil
  - Volatile organic compounds (VOCs): 4-chlorobenzotrifluoride (PCBTF) and fluorobenzene
  - SVOCs: 2-methylphenol, 4-chlorophenyl-phenylether, 4-methylphenol, atrazine, benzaldehyde, carbazole, dibenzofuran, 1-bromo-3-fluorobenzene, 11H-benzo(b)fluorine, 2-bromopyridine, 3,4-dichlorobenzotrifluoride, 3-amino-4-chlorobenzotrifluoride, 3-nitro-4-chlorobenzotrifluoride, 4-bromofluorobenzene, benzo(e)pyrene, and perylene

- Sediment
  - VOCs: PCBTF
  - SVOCs: 11H-benzo(b)fluorine, benzo(e)pyrene, perylene, and carbazole
  - Inorganics: aluminum, barium, beryllium, and vanadium

- Pore water
  - VOCs: PCBTF

Chemicals of potential concern (COPCs) were comprised of different classes of contaminants in this SLERA. Review of the site background and historical information indicates the primary contaminants for the site consist of a variety of chlorinated fluorides, fluorinated benzenes, brominated compounds, 1,2-dichloroethane, vinyl chloride, and BTEX.

Responses to risk questions identified in Section 2, Problem Formulation, of this SLERA indicate risk to ecological receptors from various site-related contaminants. For those site-related compounds (e.g., PCBTF, fluorobenzene) for which no ESL value was found, risk or lack of, cannot be determined.

In conclusion, results of the SLERA, which utilized the most conservative assumptions, indicate potential risk to ecological receptors from a variety of COPCs. However, the majority of COPCs such as metals, pesticides, and polycyclic aromatic hydrocarbons (PAHs) are not considered to be site-related and are most likely associated with typical anthropogenic sources such as motor vehicle emissions and other processes involving combustion, and residential/agricultural pesticide application. Risks from exposure to all site-related chemicals detected, such as halogenated benzenes, benzotrifluorides, and PCBTF, are inconclusive due to a lack of toxicity information for these chemicals.

Section 1
Introduction

CDM Federal Programs Corporation (CDM) received Work Assignment Number 012-RICO-02SN under the Remedial Action Contract (RAC) 2 program to perform a Remedial Investigation/Feasibility Study (RI/FS) for the Diaz Chemical Corporation Superfund Site (the site) for the United States Protection Agency (EPA), Region 2. The site is located in the Village of Holley, Orleans County, New York (NY).

The overall purpose of the work assignment is to evaluate the nature and extent of contamination at the site and to develop and evaluate remedial alternatives, as appropriate. This Screening Level Ecological Risk Assessment (SLERA), as part of the RI/FS, provides a preliminary evaluation of ecological risks from contaminants to terrestrial and aquatic environments present within the study area.

1.1 Objectives

The objective of this SLERA is to evaluate the potential for risk at the site. Conservative assumptions are used to identify exposure pathways and, where possible, quantify potential ecological risks. This report is prepared in accordance with the following documents:

- *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final* (EPA 1997)
- *Guidelines for Ecological Risk Assessment* (EPA 1998)

The SLERA consists of Steps 1 and 2 of a recommended eight step process for conducting ecological risk assessments at Superfund sites (EPA 1997). Step 1 of the Ecological Risk Assessment Guidance (ERAGS), includes a screening level problem formulation and ecological effects evaluation. Descriptions are developed of:

- Environmental setting
- Contaminants known or suspected to exist at the site and the maximum concentrations present in each medium
- Contaminant fate and transport mechanisms that might exist
- Mechanisms of ecotoxicity associated with contaminants and categories of receptors that may be affected
- Potentially complete exposure pathways

In Step 2 of the ERAGS, the screening level preliminary exposure estimate and risk calculations, risk is estimated by comparing maximum documented exposure concentrations with the ecotoxicity screening values identified in Step 1. The process concludes with a scientific management decision point (SMDP), which determines that:

- Ecological threats are negligible.
- Ecological risk assessment should continue to determine whether a risk exists.

- There is a potential for adverse ecological effects, and a baseline ecological risk assessment (BERA), incorporating more site-specific information, is needed.

Per EPA's ERAGS (1997), a SMDP will be made by risk managers.

1.2 Report Organization

This SLERA is composed of eight sections and three appendices including:

Section 1	Introduction – provides an overview of the objectives and organization of the report.
Section 2	Screening Level Problem Formulation – presents the environmental setting, sample collection and analysis, risk questions, conceptual site model (CSM), and the process for selecting chemicals of potential concern (COPCs).
Section 3	Screening Level Exposure Assessment – presents the pathways and media through which receptors may be exposed to site contaminants.
Section 4	Screening Level Effects Assessment – presents the literature based- and chemical-specific ecological screening levels (ESLs) for detected chemicals.
Section 5	Screening Level Risk Characterization – integrates information from the exposure and effects assessments.
Section 6	Uncertainty Assessment – discusses the uncertainties associated with the assumptions used in this SLERA.
Section 7	Summary and Conclusions – summarizes the significant findings of the SLERA.
Section 8	References – provides a list of references cited.

Tables and figures are presented at the end of the text. In addition, Appendix A presents letters received from the New York State Department of Environmental Conservation (NYSDEC) Natural Heritage Program (NHP) and EPA regarding state and federally-listed threatened and endangered species at or in the vicinity of the site. Appendix B provides analytical results of soil, sediment, surface water, and pore water samples used to develop this SLERA. Fate, transport, and toxicity information for COPCs is included in Appendix C.

Section 2
Problem Formulation

The problem formulation contains a general description of the environmental setting, a summary of sample collection and analysis, a description of the risk questions and CSM, and risk characterization methods.

2.1 Environmental Setting

This subsection describes the site location and description, site history, site geology and hydrogeology, ecological habitat and biota, and threatened and endangered species that may occur at or in the vicinity of the site.

2.1.1 Site Location and Description

The site is located at 40 Jackson Street in the Village of Holley, Orleans County, NY, approximately 25 miles west of Rochester and 50 miles east of Buffalo, NY (Figure 2-1).

The Diaz property is a wedge shaped parcel, bounded on the north and east by residential parcels on Jackson Street and South Main Street. To the south and west, it is bordered by Conrail railroad tracks, across which lie undeveloped land, a former Duffy-Mott Corporation (Duffy-Mott), Inc. building, and a small tributary to the East Branch of Sandy Creek.

The Diaz facility included the Diaz property and Warehouse 9 located just north of the property, and included several buildings ranging in construction from masonry and timber (circa 1890) to a modern bulk handling building (circa 1990s). The production areas included five areas (Areas A through F). Areas A through D held glass lined reactors/vessels ranging in capacity from 2,000 gallons to 4,000 gallons; Area F was primarily used for capturing open source emissions from transfer operations.

Above ground storage tanks (ASTs) reportedly contained process wastewater, toluene, hydrobromic acid, methanol/water mix, mixed bromotoluene, sodium hydroxide, scrubber solution, sodium thiosulfate, and calcium chloride. When Diaz Chemical ceased operations in 2003, the ASTs were abandoned collectively containing approximately 111,000 gallons of the aforementioned liquids.

Removal actions conducted at the site included the removal of chemicals and decontamination and demolition of reactor vessels and other equipment. Many of these areas where structures once stood have been backfilled with clean gravel.

2.1.2 Site History

Between 1890 and 1914, Miller & Pettengill (M&P) owned and operated the property, using it for tomato processing and cider vinegar production. In 1914, the Genesee Fruit Corporation (Genesee) purchased the property, and reportedly also used the property for the processing of fruits and vegetables. Between 1914 and 1974, Duffy-Mott owned and operated the property, using it for food processing. Duffy-Mott's main activity was reportedly cider vinegar production.

In 1974, Diaz Chemical Corporation purchased the property for the onsite manufacture of specialty organic chemicals for the agricultural, pharmaceutical, photographic, color and dye, and personal care products industries. The Diaz Chemical product line varied over its years of operation; the primary products manufactured by Diaz were halogenated (containing chlorine, bromine, or fluorine) aromatics and substituted benzotrifluorides. In November 2001, Diaz reportedly began production of 2-chloro-6-fluorophenol (CFP) for a European pharmaceutical manufacturer.

On 30 March 1989, FMC Corporation signed an Operating Services Agreement with Diaz, authorizing FMC to occupy a certain portion of the Diaz property with the sole purpose of converting technical-grade carbofuran pesticide into technical-grade carbosulfan pesticide (the "conversion process"). Previously, Diaz had performed this conversion process for a fee.

Diaz Chemical operated at the site until June 2003, when the company filed for bankruptcy and abandoned the facility with wastes and chemicals in place. In June 2003, EPA assumed control of the site. Subsequent removal actions conducted at the site included the removal of unused chemicals, and decontamination and demolition of reactor vessels and other facility equipment.

2.1.3 Site Geology and Hydrogeology

This section provides a brief summary of the lithologic and hydrogeologic characteristics of the site and immediate area. A more detailed description of site geology and hydrogeology can be found in the RI report.

2.1.3.1 Site Geology

According to results from previous subsurface investigations (Haley &Aldrich [H&A] 1994, 2000), the site is underlain by a veneer of Pleistocene glacial deposits which rest on sedimentary bedrock of lower Paleozoic age. The underlying succession is described below from oldest to youngest.

Bedrock

Consolidated bedrock underlying the site consists of the top-Ordovician Queenston Formation which is a massively-bedded shale. It is likely that this sedimentary rock is up to 1,000 feet thick and unconformably overlies high grade metasediments of the Precambrian-age Grenville Province. At the site, the shale bedrock is covered by younger glacial and post-glacial deposits. However, within the ravine of the East Branch of Sandy Creek east of the site, the weathered shale bedrock surface is near to or exposed at ground surface.

Glacial Till

The basal till deposits have a dense red-brown fine-grained matrix consisting of silt with clasts of eroded rock fragments in the form of gravel, cobbles and boulders. Data suggest that this unit overlies the top-Queenston shale unconformity on the western side of the site (H&A 1994).

Lake-Margin Sands
Directly overlying the Queenston bedrock east of the site (where there is no till) and interbedded with the younger glacial lacustrine sediments are discontinuous units of grey medium to coarse-grained sands. These were previously referred to as "Glacioalluvial Sand" by H&A (2000) and likely are derived from lake margin alluvial fans and/or fan deltas of the former Glacial Lake Iroquois.

Glacial Lacustrine (lake bed) Sediments
The glacial lacustrine sediments consist of medium dense to dense brown interlaminated silty fine sands and silts. Occasional clay seams are identified within this unit which overlies the till deposit. These lake bottom fine-grained sediments were deposited over the pre-existing glacial topography, including the till deposits on the west side of the site and lake-margin sands east of the site. On the western side of the site the lake bed deposits are approximately 10 feet thick; they thicken eastwards to a maximum of about 20 feet as the underlying till deposits pinch out at the eastern side of the site. East of the site, where post-glacial surface erosion has formed the East Branch Sandy Creek valley, the unit is erosionally truncated, as is the underlying shale bedrock.

Swamp Deposit
Overlying the glacial lacustrine sediments across the center of the site lies a discrete (localized) horizon of soft brown-black wet silty clay. The unit is approximately five feet thick.

Fill
Anthropogenic surface fill covers most flat-lying surfaces across the site and on surrounding land. It consists of dark brown medium dense fine sand and gravelly sand with cobbles, cinders, fragments of bricks and wood and root fibers. Across the site, the unit measures between approximately four and eight feet thick.

2.1.3.2 Site Hydrogeology
Site-specific hydrogeologic information presented below was collected during the RI completed by H&A between 1994 and 1999 (H&A 2000), by EPA/Environmental Response Team (ERT) during 2005 (Lockheed Martin 2005), and by the United States Geological Survey (USGS) (for EPA) in 2006.

Based on previous investigations, the site can be divided into three hydrostratigraphic units: overburden/weathered bedrock, shallow bedrock, and deep bedrock.

Overburden/Weathered Bedrock
The overburden ranges in thickness from 25 to 30 feet across the site and thins to the east and south east towards the East Branch of Sandy Creek. The depth to water in the overburden ranges from 4 to 21 feet below the ground surface (bgs) and is unconfined. Moving to the east, groundwater from this zone either moves down into shallow bedrock or discharges to the ground surface before the overburden pinches out.

Shallow Bedrock
H&A (2000) characterized the shallow bedrock unit as 30 to 40 feet thick with a depth to water of 15 feet to 40 feet bgs. Water level elevations in the shallow bedrock suggest confined or semi-confined conditions. Groundwater flow in the shallow bedrock zone is to the east/southeast towards the ravine and the East Branch of Sandy Creek. As it moves to the east, groundwater either discharges to the creek or to seeps along the ravine.

Deep Bedrock
According to H&A (2000) the deep bedrock starts at an elevation of 490 feet above mean sea level (amsl). Groundwater flow in the deep bedrock zone is to the east/ southeast toward the ravine and the East Branch of Sandy Creek.

2.1.4 Habitat and Biota

Study area habitats were identified based on an ecological reconnaissance performed for the site on September 2 and 3, 2009. Areas surveyed included the former Diaz facility, an unnamed tributary, and East Branch of Sandy Creek. Information regarding the observed habitats and biota are discussed in this section. Vegetation observed during the visit is presented in Table 2-1.

The Diaz Chemical facility consists of an approximately five-acre parcel of land. It is bounded on the north by Jackson Street which is comprised mostly of residential properties, and a parcel of land formerly owned by Diaz Chemical, which includes a parking lot and warehouse. To the east, the site is bounded by residential properties on South Main Street. To the south and west, it is bordered by Conrail railroad tracks, followed by undeveloped land, and a group of buildings. Most of the undeveloped land is maintained or has undergone modifications (e.g., grading, placement of fill, etc.) within the immediate areas of the unnamed tributary, and the East Branch of Sandy Creek.

Diaz Facility
The entire site is fenced, limiting access by wildlife. With the exception of a small, regularly maintained area of mowed turf, the entire site is paved, covered in gravel fill, or developed. Site topography is generally flat, varying by only two to three feet in elevation. At the east edge of the property, the land slopes down toward the East Branch of Sandy Creek ravine, and at the southern edge, towards the unnamed tributary approaching from the west.

Vegetation on site was limited mostly to turf areas and within cracks in paved portions of the site or within gravel filled areas, and consisted of a mix of ruderal plant species typical of disturbed areas (Table 2-1). These species included staghorn sumac (*Rhus typhina*), butter and eggs (*Linaria vulgaris*), common mullen (*Verbascum thapsus*), common mugwort (*Artemisia vulgaris*), wild carrot (*Daucus carota*), birds foot trefoil (*Lotus corniculata*), spiny-leaved sow thistle (*Sonchus asper*), goldenrod (*Solidago* spp.), and eastern cottonwood (*Populus deltoidea*) saplings. In general, woody species tended to occur along fence lines, in particular along the southern and eastern portion of the property; however, cottonwood saplings were prevalent throughout the site. Species

found within turf areas consisted mostly of grasses, plantain (*Plantago* spp.), and other weed species.

Wildlife, or signs of, was scant. Individuals observed included American crow (*Corvus brachyrhynchos*) and grey squirrel (*Sciurus carolinensis*).

Unnamed Tributary

South of the site is the unnamed tributary portion of the study area. This includes the Veterans of Foreign Wars building and property opposite of the Conrail rail line immediately south of the site. The tributary flows in an easterly direction into the East Branch of Sandy Creek.

The unnamed tributary is a low gradient stream no more than two feet wide and several inches in depth and flows through a well defined channel. Substrate in the upstream reaches is composed of a mix of fine and coarse sand and gravel. Further downstream, the substrate consists mostly of gravel and cobble characterized with less sand and a more well defined channel. The creek eventually flows underneath two roads and is routed via a culvert to the East Branch of Sandy Creek east of Main Street. An unidentified aquatic macrophyte was observed growing on larger cobbles.

Riparian vegetation is variable, depending on the reach of the creek. Upstream portions are mostly forested with a canopy cover ranging from 60 to 90 percent. Moving downstream the tributary flows through a marsh area dominated by narrow-leaved cattail (*Typha angustifolia*) followed by an area of maintained turf where it flows into a riprap-lined channel before exiting to the culvert. Vegetation communities change along with stream substrate and proximity to the road. Dominant vegetation within upstream areas consists of black walnut (*Juglans nigra*) and willow (*Salix* spp.) along with red-osier dogwood (*Cornus stolonifera*), spotted Joe-Pye weed (*Eupatorium maculatum*), spotted touch-me-not (*Impatiens capensis*) and goldenrod. Upland and transition areas north of the creek are characterized as a mix of native and pioneer plant species typical of waste areas as indicated by the placement of fill material and disposal of yard wastes. Species in these areas included brambles, (*Rubus* spp.), goldenrod, multiflora rose (*Rosa mulitflora*), staghorn sumac, aster (*Aster* spp.), and thistle (*Cirsium* spp.). Residential properties lying south of the creek are vegetated with the same species, in addition to maintained turf grass and ornamental species.

Transition areas adjacent to the cattail marsh are dominated by Norway maple (*Acer platanoides*) and some of the previously mentioned species. Within the area of mowed turf, stream banks were dominated by Joe-Pye weed, and spotted touch-me-not. The turf area itself appeared to be sporadically maintained. Vegetative species in this area consisted mostly of grasses along with plantain, mugwort, burdock (*Arctium minus*), thistle, field horsetail (*Equisetum arvense*), healall (*Prunella vulgaris*), and pokeweed (*Phytolacca americana*).

Wildlife observed included green frog (*Rana clamitans*), unidentified fish, crayfish (order Decapoda), and white tail deer (*Odocoileus virginianus*) as evidenced by tracks.

Upland areas are mostly developed, or maintained within this portion of the study area. Immediately south of the Conrail line and the site is a maintained field consisting of various grass and weed species. Two Virginia pines (*Pinus virginiana*) are present along with apple (*Malus sylvestris*) and staghorn sumac, the latter of which are found along the fence line parallel to the rail line. Moving south across Hudson Street is a maintained field, again consisting of species found in the field adjacent to the VFW building. To the south of these areas, a line of trees are present consisting mostly of American cottonwood, quaking aspen (*Populus tremuloides*), staghorn sumac, and some honey locust (*Gleditsia triacanthos*).

East Branch of Sandy Creek

The East Branch of Sandy Creek is located east of the Diaz facility. Topographically, the creek is situated downgradient of the site as there is an approximate 120 foot drop in elevation between the site and creek bed. This portion of the creek is located within a steeply-sloped ravine where the south bank is bounded by the Conrail rail bed, to the east by Route 31, and the west and north by steeply-sloped sides along Main and Batavia Streets.

The East Branch of Sandy Creek, from the confluence of the east and west branches to Lake Ontario, has been designated by NYSDEC as a "Significant Coastal Fish and Wildlife Habitat". The entire stream, from the Village of Holley to Lake Ontario, has been designated as Class "C", indicative of waters which support fisheries and are suitable for non-contact activities. The creek does not carry a designation of (T) or (TS), which indicates that it does not support a trout population nor does it provide habitat for trout spawning (CDM 2009).

The creek enters the ravine via a culvert underneath the rail line where it pools. Pooling is caused by the placement of impoundments and is compounded by scouring during times of high flow, and sheet flow down the ravine during precipitation events as evidenced by gullies and debris piles within the ravine. The depth of the creek in this area was not measured; however, it is expected to be approximately four feet. The width is approximately 30 feet. Flow is extremely limited in this area. Immediately downstream of the pooled reach, the creek is comprised of various riffle/run sequences. Creek depth varied and at the time of the ecological reconnaissance ranged from a few inches to 1.5 feet; width ranged from approximately 3 to 20 feet. Deeper reaches, characterized by a narrower channel and higher stream velocities, are located in the downstream portions of the study area as the creek flows through a culvert underneath Route 31. Substrate varies from silt/sand intermixed with gravel to cobble-sized particles. No aquatic vegetation was present at the time of the reconnaissance.

Riparian areas are forested and are characterized by a canopy cover ranging from 90 to 100 percent. A denser stand of trees is located on the northern bank of the creek. Dominant tree species include sugar maple (*Acer saccharum*) and Norway maple, with white snakeroot (*Eupatorium rugosum*) composing the majority of herbaceous material. The shrub layer is not as dense and consists of saplings of the prior mentioned canopy tree species and a mix of hickory (*Carya* spp.), ironwood (*Ostrya virginiana*), hawthorn (*Crataegus* spp.), and maple leaf viburnum (*Viburnum acerifolium*). The ravine slopes

along Route 31 consist of riprap material with vegetative species reflecting those of disturbed communities such as American cottonwood, Japanese knotweed, and staghorn sumac.

Wildlife, or signs thereof, included unidentified fish species, green frog, red-back salamander (*Plethodon cinereus*), and American toad (*Bufo americanus*). In addition, raccoon (*Procyon lotor*), and white tail deer tracks were observed along stream banks and within the riparian corridor.

2.1.5 Threatened, Endangered Species/Sensitive Environments

Information regarding threatened and endangered species and ecologically sensitive environments that may exist at or in the vicinity of the site was requested from EPA and NYSDEC. Letters received from both agencies are presented in Appendix A.

2.1.5.1 Federally-Listed Species

EPA reported that the United States Fish and Wildlife Service (USFWS) records indicate that the bog turtle (*Clemmys muhlenbergii*) and Eastern prairie fringed orchid (*Platanthera leucophea*) are listed as found within Orleans County. Further review of wetland maps, the New York State Herpetological Atlas, and historical records indicate that both species are unlikely to occur within the site or immediate surrounding areas.

2.1.5.2 State-Listed Species

NYSDEC reported that a review of their records for the site and surrounding area indicated no known occurrences of rare or state-listed species, or significant natural communities and habitats.

2.2 Sample Collection and Analysis

In order to evaluate the potential for risks to ecological receptors, surface soil, sediment, surface water, and pore water samples were collected on site and surrounding areas (Figure 2-2), and analyzed for a variety of contaminants including those associated with site activities. Site-related contaminants were selected based on a review of site history including documented spills and releases, and results of previous investigations. These chemicals, collectively referred to as additional target (AT) compounds consist of site-specific halogenated benzenes, benzotrifluorides and substituted benzotrifluorides, CFP, and three polycyclic aromatic hydrocarbons (PAHs) (Table 2-2).

Background samples were collected as part of the RI investigation, but are not included or discussed in this SLERA. The total number of samples discussed below, do not include background samples.

Analytical results can be found in Appendix B. Data quality objectives (DQOs) were established during project planning to generate data of sufficient quality and quantity to achieve the above project objectives. Measurement criteria were also established for the data quality indicators (DQI) precision, accuracy, representativeness, comparability, and completeness. The overall goal was to generate a complete data set for at least 90 percent of the samples planned for collection, and 90 percent valid data

from the samples analyzed. The completeness of the data set was 97 percent. Therefore, CDM achieved data completeness and usability established in the Final Quality Assurance Project Plan (QAPP) (CDM 2009). Data failing other quality control criteria were appropriately qualified as estimated or non-detect during data validation. All data reported herein are usable as reported with the data validation qualifiers added except for rejected data which are not usable for any purpose. A copy of the Data Quality

The Assessment Summary Report is provided in the Human Health Risk Assessment.

2.2.1 Surface Soil

A total of 179 surface soil samples (ground surface to depths of either two or four feet) were collected in support of the RI. For the purposes of this SLERA, samples collected from areas covered by impermeable surfaces (asphalt, concrete, etc), or gravel were excluded from evaluation as no exposure pathways to ecological receptors are anticipated. Ecological receptors are not expected to be exposed to contaminants in subsurface soils. Thus, a total of 158 samples are evaluated in this SLERA.

All samples were collected in accordance with procedures outlined in the QAPP (CDM 2009). Samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), AT VOCs and SVOCs, pesticides/polychlorinated biphenyls (PCBs), dioxins/furans, Target Analyte List (TAL) metals, and cyanide. Additional analyses included pH and total organic carbon (TOC).

2.2.1.1 Volatile Organic Compounds

A total of 26 samples were analyzed for TCL VOCs and 145 samples for AT VOCs. A total of 10 VOCs were detected including acetone, benzene, chlorobenzene, ethylbenzene, m,p-xylene, methylene chloride, tetrachloroethene, trichlorofluoromethane, 4-chlorobenzotrifluoride (PCBTF), and fluorobenzene. With the exception of acetone and methylene chloride, VOCs detected can be considered site-related.

Most VOCs were detected within or immediately outside site boundaries in areas east of the southeastern portion of the Diaz facility near the intersection of Main Street and Batavia Street. On-site locations SS-17 and SS-18 had concentrations of the site-related compound PCBTF orders of magnitude higher than any other location at 19,300 micrograms per kilogram (µg/kg) and 29,500 µg/kg, respectively. The most commonly occurring VOCs detected were fluorobenzene followed by PCBTF in 17 and 10 out of 145 samples, respectively. Trichlorofluoromethane was found in 7 out of 26 samples.

2.2.1.2 Semi-Volatile Organic Compounds

A total of 146 samples were analyzed for TCL SVOCs and AT SVOCs. In addition, 12 samples were analyzed for just CFP. This compound, an AT SVOC, was included in the other 146 samples for a total of 158 samples analyzed for this chemical.

Several SVOCs were detected in all surface soil samples. The most commonly detected SVOCs were found in a minimum of 96 percent of samples and consisted of benzaldehyde, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. Soil from SS-131, located along Thomas Street, had the highest concentrations of SVOCs detected. Of the several AT fluorinated SVOCs, locations SS-17 and SS-18 had the most compounds detected; however, levels were not necessarily the highest detected. The AT SVOC, CFP which was analyzed in 158 samples was not detected in any sample.

2.2.1.3 Pesticides and PCBs

A total of 26 samples were analyzed for pesticides and PCB Aroclors. No PCBs were detected in any sample. Nine pesticides were detected, including 4,4'-DDE, 4,4'-DDT, alpha-BHC, beta-BHC, dieldrin, endrin, endrin ketone, gamma-BHC, and methoxychlor. Alpha-BHC was the most commonly detected compound, detected in 3 out of 26 samples followed by 4,4'-DDE, 4,4'-DDT in two samples. Other pesticides were found in only one sample. Pesticides were only detected in soil from SS-12, SS-17, SS-18, SS-173, and SS-174; SS-17, located within site boundaries, had the most compounds detected in any one sample.

2.2.1.4 Dioxin/Furans

A total of 96 samples were analyzed for dioxins and furans. All 17 compounds that comprise the full dioxin/furan suite of analysis were detected. Locations SS-66 and SS-57 had some of the highest concentrations detected. In general, the majority of all compounds were detected in almost every sample.

2.2.1.5 Target Analyte List Metals and Cyanide

A total of 146 samples were analyzed for TAL metals and cyanide; the latter was not detected in any sample. Of the 23 metals that comprise the TAL suite, most were detected in all samples. Silver was the least commonly detected metal, found in only two samples. The highest concentrations of arsenic, cadmium, iron, lead, nickel, selenium, silver, vanadium, and zinc were from location SS-57 where several metal concentrations were measured at levels considerably higher than other locations; however, concentrations between most locations were relatively consistent.

2.2.2 Sediment

A total of eight sediment samples were collected from the East Branch of Sandy Creek and the unnamed tributary. All samples were collected in accordance with procedures outlined in the QAPP (CDM 2009). Samples were analyzed for TCL VOCs and SVOCs, AT VOCs and SVOCs, TAL metals, cyanide, and TOC (Appendix B).

2.2.2.1 Volatile Organic Compounds

Four VOCs were detected including 2-butanone, acetone, toluene, and the site-related AT compound PCBTF which was detected in SD-10-R1 at a concentration of 1.89 µg/kg. No other VOCs were detected in any sample.

2.2.2.2 Semi-Volatile Organic Compounds

Several SVOCs were detected. The highest concentrations were from the sample collected at SD-11-R1 located downgradient of Route 31. No SVOCs were detected at SD-04-R1, the most upstream location within the unnamed tributary. In all other samples, SVOCs were detected, in general, at concentrations consistent between locations.

2.2.2.3 Target Analyte List Metals and Cyanide

Cyanide was not detected in any sample. Several metals were detected at concentrations relatively consistent between locations.

2.2.3 Surface Water

A total of nine surface water samples were collected from the East Branch of Sandy Creek, the unnamed tributary, and a seep discharging to the East Branch of Sandy Creek. All samples were collected in accordance with procedures outlined in the QAPP (CDM 2009). Samples were analyzed for TCL VOCs and SVOCs, AT VOCs and SVOCs, TAL metals, and cyanide. Additional analyses included total dissolved solids (TDS), total suspended solids (TSS), hardness, TOC, sulfides, nitrate, and nitrite (Appendix B).

2.2.3.1 Volatile Organic Compounds

No VOCs were detected in any sample.

2.2.3.2 Semi-Volatile Organic Compounds

Pentachlorophenol was detected at a concentration of 0.2 microgram per liter (µg/L) at location SEEP1A-R1. No other SVOCs were detected in any other sample.

2.2.3.3 Target Analyte List Metals and Cyanide

Cyanide was not detected in any sample. Several metals were detected, with location SEEP1A-R1 having the most, and with the exception of magnesium, the highest concentrations. In general, concentrations of metals at all locations (with the exception of SEEP1A-R1) were relatively consistent.

2.2.4 Pore Water

Due to poor piezometer recovery, pore water was only collected from the East Branch of Sandy Creek locations PW-07-R1, PW-08-R1, PW-09-R1, and PW-10ALT-R1. All samples were collected in accordance with procedures outlined in the QAPP (CDM 2009). When sufficient volumes were collected, samples were analyzed for TCL VOCs and SVOCs, AT VOCs and SVOCs, TAL metals and cyanide. Additional analyses included TDS, TSS, hardness, TOC, sulfides, nitrate, and nitrite (Appendix B).

2.2.4.1 Volatile Organic Compounds

Four VOCs were detected including 1,1,1-trichloroethane, methyl tert-butyl ether, toluene, and the site-related compound PCBTF. Moving in a downstream direction from the site, PCBTF was detected at locations PW-07-R1, PW-09-R1, and PW-10ALT-R1 at concentrations of 9.36 µg/L, 8.9 µg/L, and 2.14 µg/L, respectively. 1,1,1-

trichloroethane, methyl tert-butyl ether, and toluene were each detected in separate samples at concentrations of 0.13 µg/L, 0.072 µg/L, and 0.056 µg/L, respectively.

2.2.4.2 Semi-Volatile Organic Compounds

Due to poor piezometer productivity, AT SVOCs were not analyzed in pore water from PW-10ALT-R1. Bis (2-ethylhexyl)phthalate was detected in one sample (PW-08-R1) at a concentration of 2.8 µg/L. No other SVOCs were detected in any sample.

2.2.4.3 Target Analyte List Metals and Cyanide

Due to poor piezometer productivity, metals and cyanide were not analyzed in samples from PW-08-R1 and PW-10ALT-R1. Cyanide was not detected in any sample. Several metals were detected; PW-07-R1 had the majority of the highest concentrations detected. However, concentrations detected in all samples were relatively consistent.

2.3 Risk Questions

Risk questions summarize important components of the problem formulation phase of the SLERA. Risk questions are directly related to testable hypotheses that can be accepted or rejected using the results of the SLERA. Selected risk questions to be answered in this SLERA include:

- *Can ecological receptors be exposed to site-related contaminants present in soil, sediment surface water, and sediment pore water?*

  This question is addressed in the Exposure Assessment phase of the SLERA (Section 3).

- *Are concentrations of site-related contaminants sufficiently elevated to impair the survival, growth, or reproduction of ecological receptors?*

- This question is addressed in the Effects Assessment and Risk Characterization phases of the SLERA (Sections 4 and 5).

2.4 Conceptual Site Model

The CSM depicts the fate and transport of contaminants from source(s) to exposure media (surface water, sediment, food, etc.) and illustrates the exposure routes for ecological receptors. Development of the CSM includes identification of the sources of contamination, and potential exposure pathways (Figure 2-3).

2.4.1 Sources of Contamination

For the purposes of this SLERA, the sources of contamination are surface and subsurface soil, and groundwater contamination associated with historic site activities, spills, and releases. Contamination originating from these sources may have, or continue, to migrate to surrounding areas via erosion, overland flow, groundwater discharging to surface water, and, to a lesser extent, wind dispersion. Areas most prone to the deposition of contaminants are located downgradient of the site.

2.4.2 Exposure Pathways

An exposure pathway is the means by which contaminants are transported from a source to ecological receptors. For this SLERA, contaminated soil and groundwater

represent the source of contaminants. Any soil transport via erosion, wind dispersion, and groundwater discharge may result in the transport of contaminants to surrounding areas downgradient, including the East Branch of Sandy Creek and the unnamed tributary. The potential exposure pathways are illustrated on the CSM (Figure 2-3).

In undeveloped portions of the study area, habitats support a number of terrestrial and aquatic species including invertebrates, fish, amphibians, reptiles, birds, and mammals. Ecological receptors utilizing these areas may be exposed to contaminated media via direct contact or incidental ingestion. Exposure of higher trophic-level receptors can also occur through food chain exposure (through the ingestion of prey that may have become contaminated through site-related exposure).

2.5 Assessment Endpoints

A review of the CSM provided information for the selection of assessment endpoints. A variety of invertebrates, fish, reptiles, and amphibians inhabit the area. In addition, many birds and mammals inhabiting this and adjacent areas may forage within these areas and could feed on organisms inhabiting the site. Therefore, the assessment endpoints collectively focused on these groups.

Assessment endpoints are explicit expressions of an environmental resource that is considered of value, operationally defined by an ecological entity and its attributes (EPA 1997). In SLERAs, assessment endpoints are usually considered to be any adverse effects from site contaminants to any ecological receptors at the site. It is not practical or possible to directly evaluate risks to all the individual components of the ecosystem on site, so assessment endpoints are used to focus on particular components that could be adversely affected by the contaminants associated with the site.

2.6 Measurement Endpoints

Measurement endpoints are chosen to link the existing site conditions to the goals established by the assessment endpoints and are useful for assessment endpoint evaluation. Measurement endpoints are quantitative expressions of observed or measured biological responses to contamination relevant to selected assessment endpoints. For a SLERA, ESLs are commonly used as measurement endpoints. For this SLERA, measurement endpoints are based on conservative ESLs from sources discussed in Section 4.1.

For this SLERA, the following assessment endpoints and measurement endpoints were selected to evaluate whether site-related contaminants pose a risk to ecological receptors:

- Assessment Endpoint 1: Viability (survival, growth, and reproduction) of terrestrial ecological receptors/communities.

  Measurement Endpoint: Evaluate the toxicity of contaminants in soil by comparing maximum detected concentrations to soil-specific ESLs.

- Assessment Endpoint 2: Viability (survival, growth, and reproduction) of aquatic ecological receptor/communities.

  Measurement Endpoint: Evaluate the toxicity of sediment, surface water, and pore water by comparing maximum-detected concentrations to sediment- and surface water-specific ESLs.

2.7 Risk Characterization Methods

Potential risks to ecological receptors are evaluated using the hazard quotient (HQ) approach. This process involves comparing the maximum contaminant concentrations measured at the site to ESLs. The HQ takes the form of the following equation:

$$Hazard\ Quotient = \frac{Maximum\ Detected\ Concentration\ of\ a\ COPC}{ESL}$$

Where the ESL represents the no adverse effect level for a specific contaminant and exposure medium.

The ESLs are intended to be conservative screening values that avoid the potential for underestimating risk. The HQ method was used to estimate risk of exposure to each COPC. This method compares the maximum exposure concentration (EC) for a specific chemical to its screening benchmark counterpart.

For this SLERA, if HQs are greater than unity (1.0), risk is implied. An HQ less than or equal to 1.0 suggests there is a high degree of confidence that minimal risk exists for the given COPC. Contaminants for which the HQ is above one are retained as COPCs for potential further evaluation, such as a BERA. Higher HQs are not necessarily indicative of more severe effects because of varying degrees of uncertainty in the screening-level benchmarks used to calculate HQs.

Chemicals for which ESLs are not available are also retained as COPCs. In addition, contaminants with HQ values greater than 1.0 that may not be site related are retained. A discussion of their potential exclusion as COPCs is provided. Calcium, magnesium, potassium, and sodium are eliminated from further consideration as COPCs because they are ubiquitous, occur naturally in high concentrations, are essential nutrients, and are unlikely to pose risk. The COPC selection process for this SLERA is further discussed in Sections 3, 4, and 5.

Dioxin and furan data are evaluated utilizing the toxicity equivalents (TEQ) approach. Dioxins are generally found in mixtures containing several kinds of dioxins and dioxin-like compounds, each having its own degree of toxicity. The TEQ approach weighs the toxicity of less toxic compounds as fractions of the toxicity of the most toxic compound, 2,3,7,8,-tetrachlorodibenzodioxin (TCDD). Each compound is assigned a specific toxicity equivalence factor (TEF). This factor indicates the degree of toxicity compared to 2,3,7,8-TCDD, which is given a reference value of 1.

The World Health Organization (WHO) has published TEFs for dioxin and dioxin-like compounds (WHO 2005). Included in this list are TEF values for 17 dioxin and furan

compounds. To calculate the total 2,3,7,8-TCDD TEQ of a dioxin mixture, the maximum concentrations of each dioxin and furan detected within the study area is multiplied with their respective TEFs and summed together. The total dioxin TEF values are then compared to a screening benchmark for 2,3,7,8-TCDD for its respective matrix (i.e., soil).

Section 3
Exposure Assessment

The objective of the exposure assessment is to determine the pathways and media through which ecological receptors may be exposed to site contaminants. Exposure scenarios are simplified descriptions of how potential receptors may come in contact with contaminants. Potential exposure pathways are dependent on habitats and receptors present on-site, the extent and magnitude of contamination, and environmental fate and transport of COPCs.

For the purposes of this SLERA, sources of site-related contamination are surface and subsurface soils and groundwater contaminated by historic industrial practices, spills, and releases at the site. Contamination from these sources may have, or may continue to migrate to surrounding areas via erosion, overland flow, groundwater migration, and wind dispersion. Areas most prone to the deposition of contaminants are those situated downgradient of source areas.

Observations made during the ecological reconnaissance indicate the study area provides habitat for a number of terrestrial and aquatic species, including invertebrates, fish, reptiles, amphibians, birds, and mammals. Organisms or representative groups of organisms can be exposed to contaminants by direct contact and/or ingestion of contaminated media and/or prey. Although several potential exposure scenarios can be identified for ecological receptors, it is most appropriate to focus the assessment on critical exposure scenarios or those most likely to contribute to risk. Thus, this SLERA focuses on the direct contact exposure scenario.

Following EPA guidance for conducting SLERAs, the maximum detected concentration in soil, sediment, surface water, and pore water serves as the exposure concentration. Chemical-specific and media-specific screening levels serve as the effects concentration. The comparison of these two values is used to estimate risk.

Section 4
Effects Assessment

An effects assessment includes an evaluation of the available types and sources of effects data and presents media- and chemical-specific screening levels that serve as conservative effects concentrations for the SLERA. Effects data were limited to screening level or benchmark concentrations.

This section of the SLERA describes and provides the sources of effects data selected for use in this evaluation. As appropriate for a SLERA, effects data are limited to ESLs. Screening values from the following references were applied in a hierarchical fashion to the maximum site-specific COPC concentrations as follow:

- Soil
  - Primary Source
    - NYSDEC 2006. Remedial Program Soil Cleanup Objectives, Protection of Ecological Resources
  - Secondary Sources (in order of preference)
    - EPA 2003 - 2007. Ecological Soil Screening Levels (EcoSSLs); most conservative value used
    - Oak Ridge National Laboratory, Preliminary Remediation Goals for Ecological Endpoints (1997)
    - National Oceanic and Atmospheric Administration (NOAA). Screening Quick Reference Tables (SQuiRTs) (Buchman 2008)
    - EPA 2003a. Region 5 Resource Conservation and Recovery Act (RCRA) Ecological Screening Levels

- Sediment
  - Primary Source
    - NYSDEC 1998a. Technical Guidance for Screening Contaminated Sediments
  - Secondary Sources (in order of preference)
    - NOAA 2008. SQuiRTs
    - EPA 2006. Region 3 Biological Technical Assistance Group (BTAG) Freshwater Sediment Screening Benchmarks
    - EPA 2003a. Region 5 RCRA Ecological Screening Levels

- Surface Water and Pore Water
  - Primary Source
    - NYSDEC 1998b. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June.
  - Secondary Sources (in order of preference)
    - EPA 2009. National Recommended Water Quality Criteria
    - NOAA 2008. SQuiRTs

In this SLERA, NYSDEC values were examined first to determine if a screening value was available for a particular compound. If a value was available, it was utilized. If

not, values from secondary sources were used in the order they are listed above. If a selected screening level was exceeded, or no screening level was located, contaminants were retained as COPCs.

When applicable, criteria were adjusted for organic carbon content, and hardness for soil/sediment, and surface water/pore water samples, respectively.

Section 5
Risk Characterization

The risk characterization integrates information from the exposure and effects assessments and estimates risk to representative ecological receptors. This SLERA relies on the HQ approach, supplemented by site observations to assess ecological risks at the site.

5.1 Hazard Quotient Approach

The HQ approach for estimating risk is based on the ratio of a selected EC to a selected ESL or effects concentration. Following EPA guidance for conducting SLERAs, the maximum detected concentration in soil, sediment, surface water, and pore water serves as the EC. The equation is as follows:

$$\textit{Hazard Quotient} = \frac{\textit{Maximum Detected Concentration of a COPC}}{\textit{ESL}}$$

In general, the information derived through this approach contributes to the risk characterization for the assessment endpoints listed in Section 2.5.

The chemical-specific and media-specific screening levels serve as the effects concentration. The comparison of these two values allows calculation of the HQ, which in turn is used to estimate risk. HQs greater than 1.0 indicate a potential for adverse effects. HQs less than 1.0 are considered insignificant and therefore risks are not expected.

Note that higher HQs between COPCs are not necessarily indicative of more severe effects because of varying degrees of uncertainty in the ESLs used to calculate HQs, and due to differences in toxicity endpoints (e.g., body weight reduction vs. reproduction effects) and measurement endpoints (e.g., no-observed- adverse-effect level [NOAEL] vs. lowest-observed-adverse-effect level [LOAEL]). Resultant HQs should not be compared unless the confidence, toxicity endpoints, and measurement endpoints are equal. Where the confidence in ESLs is equal, a higher HQ suggests a greater likelihood of adverse effects.

5.2 HQ-based Risk Estimates

The reliability of HQs to predict actual risks is dependent on the quality of the exposure and effects concentrations used to calculate HQs. There is greater confidence in HQ-based risk estimates when exposure and effects data are based on large databases reflecting extensive sample collection (exposure data) and toxicological information (effects data). The data collected provide adequate confidence that detected COPC concentrations represent actual conditions relative to chemical contamination.

Similarly, screening levels based on a large toxicity database comprised of a wide variety of organisms are preferred over concentrations from a limited database or those not directly linked to adverse effects. As discussed previously, all screening

levels are biased towards over-protection, and it is, therefore, unlikely that risks are underestimated using these conservative screening levels.

5.3 Evaluation of Site-Specific Data

Data collected in support of this SLERA were used to describe the magnitude and distribution of contaminants (Section 2.2). Following ERAGS (EPA 1997), the maximum detected concentration for each chemical was used to evaluate potential risk for this SLERA. Maximum concentrations of detected chemicals, the sample location where the maximum contaminant concentration was measured, the frequency of detected chemicals, and the maximum HQs calculated are presented in Tables 5-1 through 5-4. If a maximum contaminant concentration exceeds the screening level for that contaminant (i.e., HQ > 1.0), then the potential for adverse ecological effects may exist.

5.4 Evaluation Approach

The following approach was used to identify and evaluate COPCs for this SLERA.

- An HQ > 1.0 (i.e., where the maximum concentration exceeds the ESL) indicates the potential for adverse effects. An HQ < 1.0 is considered insignificant as risks are not expected because ESLs are the lowest measurable concentration that is protective of the most sensitive organism.

- The exposure value for each contaminant is assumed to be present throughout the site at the measured concentration all of the time.

- The bioavailability of each contaminant is assumed to be 100 percent. No additional considerations regarding partitioning or, in the case of metals, presence of ionic species present, have been assumed.

5.5 Identification of Chemicals of Potential Concern

Chemicals with maximum detected values above their selected ESLs (i.e., HQ > 1.0) are identified as COPCs, as are detected contaminants for which screening-level benchmarks could not be identified unless otherwise noted below. The HQs and identified COPCs, and the rationale for their selection, are shown below (see also Tables 5-1 through 5-4).

Contaminants with maximum concentrations exceeding ESLs (HQs >1.0):

- Soil
  - SVOCs: 2,4-dimethylphenol, 2-chloronaphthalene, 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, bis(2-ethylhexyl)phthalate, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene
  - Pesticides: 4,4'-DDE, 4,4'-DDT, endrin ketone, and methoxychlor
  - Dioxins/furans: 2,3,7,8-TCDD (based on total toxicity equivalence concentration)
  - Inorganics: antimony, arsenic, barium, copper, lead, mercury, selenium, thallium, vanadium, and zinc

- Sediment
  - VOCs: acetone
  - SVOCs: acenaphthylene, atrazine, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene
  - Inorganics: nickel and zinc

- Surface Water
  - Inorganics: aluminum, barium, iron, lead, and manganese

- Pore Water
  - SVOCs: bis(2-ethylhexyl)phthalate
  - Inorganics: aluminum, barium, and manganese

Chemicals detected with no corresponding ESLs:

- Soil
  - VOCs: PCBTF and fluorobenzene
  - SVOCs: 2-methylphenol, 4-chlorophenyl-phenylether, 4-methylphenol, atrazine, benzaldehyde, carbazole, dibenzofuran, 1-bromo-3-fluorobenzene, 11H-benzo(b)fluorine, 2-bromopyridine, 3,4-dichlorobenzotrifluoride, 3-amino-4-chlorobenzotrifluoride, 3-nitro-4-chlorobenzotrifluoride, 4-bromofluorobenzene, benzo(e)pyrene, and perylene

- Sediment
  - VOCs: PCBTF
  - SVOCs: 11H-benzo(b)fluorine, benzo(e)pyrene, perylene, and carbazole
  - Inorganics: aluminum, barium, beryllium, and vanadium

- Pore water
  - VOCs: PCBTF

Several of the above-listed COPCs are potentially site-related (Section 2.2). COPCs most likely not site-related are probably associated with regional geology, or common urban/agricultural sources such as motor vehicles and pesticide application. The fate, transport, and toxicity of these COPCs are discussed in Appendix C.

A HQ of 2.4 was calculated for iron in surface water; however, it is not retained as a COPC. The greatest environmental threat posed by high iron concentrations typically relates to the precipitation of iron oxides in aquatic systems, resulting in the smothering and embedding of the bottom substrate of the water body. No such observations of iron precipitate were noted during the ecological reconnaissance. Thus, it is likely that iron concentrations in surface water pose no ecological risk and is eliminated from further evaluation.

Similarly, aluminum and iron in soil are excluded as COPCs. No soil screening values for either metal were located; however, a search of the literature indicates that any toxicity associated with these metals is pH dependant. Aluminum is considered toxic

when soil pH is less than 5.5; iron is considered toxic to plants at a pH of less than 5.0 or above 8.0. Both are some of the most commonly occurring metallic elements (EPA 2003b; 2003c). Soil pH was measured to be within acceptable levels relevant to any associated toxicity. The only exception was 4 samples where soil pH ranged from 8.3 to 9.0 suggesting the potential of iron toxicity to plants; however, this is still highly unlikely as plants can regulate iron uptake (EPA 2003c). Aluminum and iron in soil are eliminated from further evaluation.

Finally, acetone in sediment and bis(2-ethylhexyl)phthalate in pore water and soil samples were found at levels in exceedance of screening values. Both compounds are considered common laboratory contaminants and are not retained as COPCs. Acetone and bis(2-ethylhexyl)phthalate are eliminated from further evaluation.

5.6 Risk Summary

This section of the SLERA discusses the potential ecological significance of the estimated risks and provides conclusions. Ecological significance considers the limitations and uncertainties (see Section 6) with the quantitative HQ risk estimates. An important first step to understand the results of this SLERA is to answer the risk questions initially presented in Section 2, Problem Formulation.

The following risk questions were identified as important to the SLERA. The results of the SLERA are used to respond to these questions and to help form conclusions. The risk questions and associated responses are presented below.

- *May ecological receptors be exposed to site-related contaminants present in site media?*

  Response: Yes. Analytical data show that site-related chemicals were detected in site media; mostly in soil, and to a much lesser extent in the East Branch of Sandy Creek sediment and pore water. Based on the results of the RI, no clear overland pathway from site soils to the East Branch of Sandy Creek was identified. It was determined that contaminated groundwater is discharging to the East Branch of Sandy Creek as low levels of the site-related chemical PCBTF were detected in pore water and sediment from the East Branch of Sandy Creek. This is further supported by the results of the RI as groundwater flow is toward the east-southeast, toward the East Branch of Sandy Creek, and PCBTF was detected in groundwater samples (CDM 2011).

- *Where present, are the concentrations of site-related contaminants sufficiently elevated to impair the survival, growth, or reproduction of sensitive ecological receptors?*

  Response: Yes. Concentrations of some site-related COPCs detected in media are in exceedance of their respective ESLs. For those site-related compounds (e.g., PCBTF, fluorobenzene) for which no ESL value was found, risk or lack of, cannot be determined.

For risk management purposes, Table 5-5 lists COPCs and associated HQs, along with their identification whether they are site-related or not based on the results of the RI.

In addition, minimum concentrations of COPCs that were detected in background samples are also presented.

Section 6
Uncertainty Assessment

The potential risks due to contaminants in site media to ecological communities or populations at the site were evaluated by comparing maximum exposure concentrations to ecological screening values, an approach which provides the lowest level at which harmful effects would be predicted to occur. Some degree of uncertainty inherent in these comparisons is introduced during various steps in the evaluation. The sources of uncertainty are discussed below, as well as whether the assumptions used are likely to over- or under-represent ecological risks from contaminants at the site. In general, because this SLERA uses conservative assumptions, risks are likely overestimated.

The main sources of uncertainty include natural variability, error, and insufficient knowledge. Natural variability is an inherent characteristic of ecological systems, their stressors, and their combined behavior in the environment. Biotic and abiotic parameters in these systems may vary to such a degree that the exposure and response of similar assessment endpoints in the same system may differ temporally and spatially. Factors that contribute to temporal and spatial variability include differences in individual organism behavior (within and between species), changes in the weather or ambient temperature, unanticipated interference from other stressors, interactions with other species in the community, differences between microenvironments, and numerous other factors.

6.1 Problem Formulation

Sources of uncertainty within the problem formulation phase of the SLERA relate to the selection of assessment endpoints and assumptions within the CSM.

The selection of appropriate assessment endpoints to characterize risk is a critical step within the problem formulation of an ecological risk assessment. If an assessment endpoint is overlooked or not identified, environmental risk at the site will be underestimated. Within this SLERA, the selection of assessment endpoints was performed with the intent of being inclusive. However, given the complexity of the environment and the state of knowledge of organism interactions, it is possible that unique exposure pathways or assessment endpoints exist that were not acknowledged within the problem formulation. If additional pathways or assessment endpoints exist, risk may be underestimated.

The CSM presents the pathways by which contaminants are released from source areas to expose receptors. However, some exposure pathways are difficult to evaluate or cannot be quantitatively evaluated based on available information. Within this SLERA only the direct contact pathway was evaluated. Use of such a conservative endpoint may result in overestimating potential risk.

Potential receptors represent a variety of organisms with different feeding and behavioral strategies. For this SLERA, the evaluation optimizes exposure of receptors by assuming a significant portion of their life cycles is restricted to areas of contamination. For example, the assumption that ecological receptors spend a

significant portion of their life cycles at the site or a particular area may be conservative.

6.2 Exposure Assessment

All exposure assessments have a degree of uncertainty due to necessary simplifications and assumptions, which must be made as part of the evaluation. Major sources of uncertainty in the exposure assessment are discussed below.

Concentrations used to represent exposure point concentrations and characterizations of the distributions of COPCs can be a source of uncertainty. These issues relate to the adequate characterization of the nature and extent of chemical contamination. It is assumed that sufficient samples have been collected from site media and appropriately analyzed to adequately describe the nature and extent of chemical contamination resulting from the release of site-related chemicals.

When potential levels of uncertainty could adversely affect the results of the assessment, conservative approaches are taken that may result in over-protection of sensitive receptors. Such an approach is prudent where uncertainties are high and is in line with regulatory guidance for conducting SLERAs. For example, maximum detected concentrations of COPCs are used to assess potential risk at the SLERA stage, and this approach likely overestimated the average concentrations to which receptors may be exposed.

In this risk assessment, it was assumed that COPCs in environmental media were 100 percent bioavailable. This is a conservative assumption that most often will overestimate risk. Bioavailability can be affected by factors including chemical speciation, sorption onto soils or sediment, complexation, aging, competition with environmental ligands, or precipitation in anoxic environments in the presence of sulfides (Chapman *et al.* 2003). Soil and sediment particle size can also influence exposure concentrations and bioavailability; soil/sediment comprised of fine particles will tend to have higher COPC concentrations than coarser textured ones due to the larger surface area and increased number of potential adsorption sites.

6.3 Effects Assessment

Uncertainties associated with the effects assessment relate to estimations of ESLs, the use of conservative assumptions, and the degree of interaction between site contaminants.

Not all ESLs have the same degree of confidence. For some COPCs, information on toxicity is limited or not available. Additionally, many ESLs were derived from laboratory animal studies that evaluated exposure to a single chemical under controlled conditions. Wildlife species using the site may be exposed to a mixture of COPCs under sometimes stressful environmental conditions, which may affect the toxic impact of a contaminant. Additionally, extrapolation of an ESL derived from populations or species different from those at the site may introduce error because of differences in pharmacokinetics or population and species variability. Further, where ESLs were statistically determined, they do not represent absolute thresholds; they are reflective of the experimental design. Finally, ESLs incorporate error contributed by

the use of results from many studies incorporating different methods of sample collection, preparation, and analysis. These factors may result in over- or underestimating ecological risk.

Uncertainties can be introduced by use of unrealistic assumptions in the CSM. In SLERAs, conservative assumptions are generally made in light of the uncertainty associated with the risk assessment process. This minimizes the possibility of concluding that no risk is present when a threat actually does exist (e.g., minimizes false negatives). However, the accuracy with which risk was predicted is not known. The use of conservative assumptions likely overestimates potential risk.

There is also the potential of cumulative stress from exposure to additional stressors (e.g., habitat degradation); however, this was not evaluated in this SLERA. If other stressors exist at the site, and if the effects of those stressors and the effects of exposure to site-related contaminants are cumulative, ecological risks at the site may be underestimated.

6.4 Risk Characterization

By definition, uncertainties in risk characterization are influenced by uncertainties in exposure assessment and effects assessment. The adequate sampling and analysis of study area soil, sediment, surface water, and groundwater minimize the uncertainties in the exposure assessment of these media. Descriptions of the magnitude and distribution of COPCs at the site are considered to be generally representative of current conditions. Since only the maximum-detected concentrations are used at this stage of the ecological risk assessment, the range of exposure concentrations is less critical to the results of the SLERA.

The frequency of a specific chemical in exceedance of its criteria was not taken into consideration as part of the COPC identification process. In several instances, chemicals were retained as COPCs; however, they were often detected in a fraction of the samples and in several cases were only found in one.

Effects data can also contribute to overall uncertainty in risk characterization. Science and scientific investigations cannot prove any hypothesis beyond doubt. The scientific method is instead based on stating the hypotheses, testing the hypotheses, and either accepting or rejecting the hypotheses based on the weight-of-evidence provided by test data. Confidence in the ability of selected ESLs to assess ecological risks varies for each data value selected. While all ESLs used in this SLERA are associated with some degree of uncertainty, it is the general trend described by the comparisons between exposure concentrations and effects concentrations, and the overall confidence in such comparisons, that are most important. Available information suggests that the ESLs selected for use in this SLERA are generally similar to other ESLs, are commonly accepted for screening, and adequate for estimating risk using conservative assumptions.

Detected concentrations of COPCs may not be indicative of bioavailable concentrations. All contaminant data used in the assessment were based upon the total concentration of the chemical present, as opposed to the bioavailable fraction. Both

metals and organic compounds may bind to soil and sediment, making them less available to ecological receptors, particularly higher trophic level receptors. Thus, risk may be overestimated in some cases.

Another potential source of uncertainty is the small amount of biological or ecological survey data to support this SLERA. The types of surveys needed to aid in the determination of cause and effect relationships, especially at the community or population level, are highly dependent on data quality and data quantity. Such data, however, are not typically included in a SLERA. Observations based on a more general site visit/survey are used to qualitatively evaluate habitat quality, habitat use, presence of receptors, and observations of adverse impacts.

Finally, the risk characterization method itself can contribute to uncertainty. HQs depend on a single value for both exposure concentration and effects concentration. Selecting a single screening level, only after consulting multiple sources to ensure some degree of consistency, minimizes the uncertainty associated with any single value. Incorporating site observations into final conclusions also reduces the dependence on strict quantitative risk estimates that, in some cases, can be highly uncertain.

Section 7
Summary and Conclusions

Based on a comparison of maximum detected concentrations of contaminants in site soil, sediment, surface water, and pore water to conservatively derived ESLs, the potential for ecological risk may occur. Specifically, HQs > 1.0 were calculated, which indicate potential risk from exposure to the following media-specific contaminants.

- Soil
  - SVOCs: 2,4-dimethylphenol, 2-chloronaphthalene, 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene
  - Pesticides: 4,4'-DDE, 4,4'-DDT, endrin ketone, and methoxychlor
  - Dioxins/furans: 2,3,7,8-TCDD (based on total TEQ concentration)
  - Inorganics: antimony, arsenic, barium, copper, lead, mercury, selenium, thallium, vanadium, and zinc

- Sediment
  - SVOCs: acenaphthylene, atrazine, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene
  - Inorganics: nickel and zinc

- Surface Water
  - Inorganics: aluminum, barium, lead, and manganese

- Pore Water
  - Inorganics: aluminum, barium, and manganese

Potential risk from the following media-specific contaminants cannot be concluded as ESLs are not available for these compounds:

- Soil
  - VOCs: PCBTF and fluorobenzene
  - SVOCs: 2-methylphenol, 4-chlorophenyl-phenylether, 4-methylphenol, atrazine, benzaldehyde, carbazole, dibenzofuran, 1-bromo-3-fluorobenzene, 11H-benzo(b)fluorine, 2-bromopyridine, 3,4-dichlorobenzotrifluoride, 3-amino-4-chlorobenzotrifluoride, 3-nitro-4-chlorobenzotrifluoride, 4-bromofluorobenzene, benzo(e)pyrene, and perylene

- Sediment
  - VOCs: PCBTF
  - SVOCs: 11H-benzo(b)fluorine, benzo(e)pyrene, perylene, and carbazole
  - Inorganics: aluminum, barium, beryllium, and vanadium

- Pore water
  - VOCs: PCBTF

COPCs were comprised of different classes of contaminants in this SLERA. Review of the site background and historic information indicate the primary contaminants for the site consist of a variety of chlorinated fluorides, fluorinated benzenes, brominated compounds, 1,2-dichloroethane, vinyl chloride, and BTEX (Section 2.2).

Responses to risk questions identified in Section 2, Problem Formulation, of this SLERA indicate risk to ecological receptors from various contaminants. For those site-related compounds (e.g., PCBTF, fluorobenzene) for which no ESLs value were found, risk or lack of, cannot be determined.

In conclusion the SLERA results, which utilized the most conservative assumptions, indicate potential risk to ecological receptors from a variety of COPCs. However, the majority of COPCs such as metals, pesticides, and PAHs are not considered to be site-related and are most likely associated with typical anthropogenic sources such as motor vehicle emissions and other processes involving combustion, and residential/agricultural pesticide application (Table 5-5). Risks from exposure to all site-related chemicals detected such as halogenated benzenes, benzotrifluorides, and PCBTF are inconclusive due to a lack of toxicity information for these chemicals.

Section 8
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Table 2-1
List of Plant Species Observed
Diaz Chemical Corporation Site
Holley, New York

Common Name	Scientific Name	Common Name	Scientific Name
Aster	*Aster spp.*	Japanese knotweed	*Polygonum cuspidatum*
American basswood	*Tilia americana*	Lady's thumb	*Polygonum persicaria*
Apple	*Malus sylvestris*	Maple leaf viburnum	*Viburnum acerifolium*
Birdsfoot trefoil	*Lotus corniculata*	Mint	*Mentha* spp.
Bittersweet nightshade	*Solanum dulcamara*	Mouse-ear hawkweed	*Hieracium pilosella*
Black medic	*Medicago lupulina*	Mulitflora rose	*Rosa mulitflora*
Black mustard	*Brassica nigra*	Narrow leaf cattail	*Typha angustifolia*
Black walnut	*Juglans nigra*	Norway maple	*Acer platanoides*
Boneset	*Eupatorium perfoliatum*	Partridge berry	*Mitchella repens*
Boxelder	*Acer negundo*	Pennsylvania smartweed	*Polygonum pensylvanicum*
Brambles	*Rubus* spp.	Pigweed	*Amaranthus* spp.
Broadleaf plantain	*Plantago major*	Poison ivy	*Toxicodendron radicans*
Buckhorn plantain	*Plantago lanceolata*	Quaking aspen	*Populus tremuloides*
Bulbous buttercup	*Ranunculus bulbosus*	Queen Annes lace	*Daucus carota*
Bush honeysuckle	*Lonicera* spp.	Red clover	*Trifolium pratense*
Butter and eggs	*Linaria vulgaris*	Red-osier dogwood	*Cornus stolonifera*
Chicory	*Cichorium intybus*	Scarlet oak	*Quercus coccinea*
Cinquefoil	*Potentilla* spp.	Sensitive fern	*Onoclea sensibilis*
Common burdock	*Arctium minus*	Slippery Elm	*Ulmus rubra*
Common mugwort	*Artemisia vulgaris*	Spiny-leaved sow thistle	*Sonchus asper*
Common mullein	*Verbascum thapsus*	Spotted Joe-Pye weed	*Eupatorium maculatum*
Common pokeweed	*Phytolacca americana*	Spotted spurge	*Euphorbia maculata*
Common reed	*Phragmites australis*	Spotted touch-me-not	*Impatiens capensis*
Curly dock	*Rumex crispus*	Staghorn sumac	*Rhus typhina*
Dandelion	*Taraxacum officinale*	Wild strawberry	*Fragaria virginiana*
Deptford pink	*Dianthus armeria*	Sugar maple	*Acer saccharum*
Dogwood	*Cornus* spp.	Teasel	*Dipsacus fullonum*
Eastern cottonwood	*Populus deltoidea*	Thistle	*Cirsium* spp.
Evening primrose	*Oenothera biennis*	True forget-me-not	*Myosotis scorpioides*
Field horsetail	*Equisetum arvense*	Tulip tree	*Liriodendron tulipifera*
Field pennycrest	*Thlaspi arvense*	Aquatic macrophyte	NI
Foxtail	*Setaria* spp.	Virginia creeper	*Parthenocissus quinquefolia*
Goldenrod	*Solidago* spp.	Virginia pine	*Pinus virginiana*
Grape	*Vitis* spp.	Virgin's bower	*Clematis virginiana*
Hairy willow herb	*Epilobium hirsutum*	White ash	*Fraxinus americana*
Hawthorn	Crataegus spp.	White clover	*Trifolium repens*
Heal-all	*Prunella vulgaris*	White snakeroot	*Eupatorium rugosum*
Hedge bindweed	*Calystegia sepium*	Wild grape	*Vitis* spp.
Hickory	*Carya* spp.	Willow	*Salix* spp.
Honey locust	*Gleditsia triacanthos*	Yellow nutsedge	*Cyperus esculentus*
Ironwood	*Ostrya virginiana*	Yellow wood sorrel	*Oxalis stricta*
Japanese barberry	*Berberis thunbergii*		

NI - not identified

Table 2-2
Additional Target Compounds
Diaz Chemical Corporation Site
Holley, New York

Chemical	CAS No.	Molecular Formula
Volatile Organic Compounds		
1-Bromo-2-chloroethane (BCE)	107-04-0	C_2H_4BrCl
4-Chlorobenzotrifluoride (PCBTF)	98-56-6	$C_7H_4ClF_3$
Fluorobenzene	462-06-6	C_6H_5F
1,3-Dibromobenzene	108-36-1	$C_6H_4Br_2$
Semi-volatile Organic Compounds		
Acetophenone	98-86-2	C_8H_8O
11H-Benzo(b)fluorene	243-17-4	$C_{17}H_{12}$
1-Bromo-3-fluorobenzene	1073-06-9	C_6H_4BrF
1-Bromo-4-ethylbenzene	1585-07-5	C_8H_9Br
1-Bromo-4-fluorobenzene (PBFB)	460-00-4	C_6H_4BrF
1,4-Dibromobenzene	106-37-6	$C_6H_4Br_2$
2-Bromopyridine	109-04-6	C_5H_4BrN
2-Chloro-6-fluorophenol (CFP)	2040-90-6	C_6H_4ClFO
3,4-Dichlorobenzotrifluoride	328-84-7	$C_7H_3Cl_2F_3$
3-Amino-4-chlorobenzotrifluoride	121-50-6	$C_7H_5ClF_3N$
3-Bromoacetophenone	2142-63-4	C_8H_7BrO
3-Nitro-4-chlorobenzotrifluoride	121-17-5	$C_7H_3ClF_3NO_2$
Benzo(e)pyrene	192-97-2	$C_{20}H_{12}$
Perylene	198-55-0	$C_{20}H_{12}$

Table 5-1
Chemicals of Potential Concern Detected in Soil
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value	Hazard Quotient	COPC	Rationale
Volatile Organic Compounds (µg/kg)									
Acetone	67-64-1	23	100	SS12	2 / 26	2200 a	0.05	No	BSL
Benzene	71-43-2	0.12 J	0.12 J	SS12	1 / 26	70000 a	0.000002	No	BSL
Chlorobenzene	108-90-7	24 J	24 J	SS18	1 / 26	40000 a	0.001	No	BSL
Ethylbenzene	100-41-4	0.23 J	26 J	SS18	2 / 26	5160 d	0.005	No	BSL
m,p-Xylene	179601-23-1	0.14 J	0.15 J	SB23-A	2 / 26	260 a**	0.001	No	BSL
Methylene Chloride	75-09-2	1.8	4.9 J	SB172-A	4 / 26	12000 a	0.0004	No	BSL
Tetrachloroethene	127-18-4	0.31 J	0.31 J	SS176	1 / 26	2000 a	0.0002	No	BSL
Trichlorofluoromethane	75-69-4	0.47 J	1.7 J	SS12	7 / 26	164000 d	0.00001	No	BSL
4-Chlorobenzotrifluoride	98-56-6	1.98 J	29500	SS18	10 / 145	NL	NC	**Yes**	NV
Fluorobenzene	462-06-6	1.43 J	3.28 J	SS57	17 / 145	NL	NC	**Yes**	NV
Semi-Volatile Organic Compounds (µg/kg)									
1,1'-Biphenyl	92-52-4	6.1 J	760 J	SS17	17 / 146	60000 c	0.01	No	BSL
2,4-Dimethylphenol	105-67-9	12 J	100 J	SS17	3 / 146	10 d	10	**Yes**	ASL
2,4-Dinitrotoluene	121-14-2	0.31 J	8.1 J	SS116	3 / 146	1280 d	0.01	No	BSL
2-Chloronaphthalene	91-58-7	24 J	24 J	SS46	1 / 146	12.2 d	2.0	**Yes**	ASL
2-Methylnaphthalene	91-57-6	1.5 J	4900 J	SS17	138 / 146	3240 d	1.5	**Yes**	ASL
2-Methylphenol	95-48-7	0.24 J	120 J	SS17	17 / 146	NL	NC	**Yes**	NV
4-Chloroaniline	106-47-8	270	270	SS42	1 / 146	1100 d	0.25	No	BSL
4-Chlorophenyl-phenylether	7005-72-3	20 J	20 J	SS134	1 / 146	NL	NC	**Yes**	NV
4-Methylphenol	106-44-5	7.9 J	310 J	SS17	8 / 146	NL	NC	**Yes**	NV
4-Nitrophenol	100-02-7	6 J	6 J	SS12	1 / 146	5120 d	0.001	No	BSL
Acenaphthene	83-32-9	0.51 J	1100	SS17	37 / 146	20000 a	0.06	No	BSL
Acenaphthylene	208-96-8	0.55 J	2400	SS131	79 / 146	29000 b	0.08	No	BSL
Acetophenone	98-86-2	16 J	200 Y	SS119	84 / 146	300000 d	0.001	No	BSL
Anthracene	120-12-7	0.62 J	1900	SS49	107 / 146	29000 b	0.07	No	BSL
Atrazine	1912-24-9	14 J	14 J	SS70	1 / 146	NL	NC	**Yes**	NV
Benzaldehyde	100-52-7	20 J	1000	SS57	145 / 146	NL	NC	**Yes**	NV
Benzo(a)anthracene	56-55-3	0.19 J	15000 J	SS131	145 / 146	1100 b	13.6	**Yes**	ASL
Benzo(a)pyrene	50-32-8	0.2 J	14000 J	SS131	144 / 146	2600 a	5.4	**Yes**	ASL
Benzo(b)fluoranthene	205-99-2	0.36 J	21000 J	SS131	146 / 146	59800 d	0.4	No	BSL
Benzo(g,h,i)perylene	191-24-2	4.2	10000 J	SS131	130 / 146	1100 b	9.1	**Yes**	ASL
Benzo(k)fluoranthene	207-08-9	0.58 J	6400 J	SS131	138 / 146	148000 d	0.04	No	BSL
bis(2-Chloroethyl)ether	111-44-4	0.85 J	0.85 J	SS121	1 / 146	23700 d	0.00004	No	BSL
bis(2-Ethylhexyl)phthalate	117-81-7	8.2 J	1200	SS103	36 / 146	925 d	1.3	No	LC
Butylbenzylphthalate	85-68-7	5.3 J	180 J	SS103	57 / 146	239 d	0.75	No	BSL
Carbazole	86-74-8	0.3 J	1800 J	SS158	135 / 146	NL	NC	**Yes**	NV
Chrysene	218-01-9	0.89 J	14000 J	SS131	142 / 146	1100 b	12.7	**Yes**	ASL
Di-n-butylphthalate	84-74-2	5.8 J	36 J	SS103	77 / 146	150 c	0.24	No	BSL
Dibenz(a,h)anthracene	53-70-3	0.46 J	2700 J	SS131	140 / 146	1100 b	2.5	**Yes**	ASL
Dibenzofuran	132-64-9	5.8 J	2000	SS17	63 / 146	NL	NC	**Yes**	NV
Diethylphthalate	84-66-2	5.5 J	16 J	SB172-A	7 / 146	24800 c	0.001	No	BSL
Dimethylphthalate	131-11-3	7.7 J	21 J	SS101	4 / 146	200000 d	0.0001	No	BSL
Fluoranthene	206-44-0	1.5 J	20000	SS131	141 / 146	1100 b	18.2	**Yes**	ASL
Fluorene	86-73-7	0.54 J	1500	SS17	73 / 146	30000 a	0.05	No	BSL
Hexachlorobutadiene	87-68-3	0.97 J	0.97 J	SS121	1 / 146	39.8 d	0.02	No	BSL
Hexachloroethane	67-72-1	2.1 J	2.1 J	SS121	1 / 146	596 d	0.004	No	BSL

Table 5-1
Chemicals of Potential Concern Detected in Soil
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value	Hazard Quotient	COPC	Rationale
Indeno(1,2,3-cd)pyrene	193-39-5	0.27 J	14000 J	SS131	142 / 146	1100 b	12.7	**Yes**	ASL
Isophorone	78-59-1	1.1 J	15 J	SS98	2 / 146	139000 d	0.0001	No	BSL
N-Nitrosodiphenylamine	86-30-6	1.2 J	19 J	SS58	3 / 146	545 d	0.03	No	BSL
Naphthalene	91-20-3	2.2 J	4000 J	SS17	143 / 146	29000 b	0.14	No	BSL
Pentachlorophenol	87-86-5	1.2 J	7.2 J	SS11	9 / 146	800 a	0.01	No	BSL
Phenanthrene	85-01-8	0.69 J	9800	SS49	143 / 146	29000 b	0.34	No	BSL
Phenol	108-95-2	7.3 J	210 J	SS17	37 / 146	30000 a	0.007	No	BSL
Pyrene	129-00-0	0.74 J	21000 J	SS131	143 / 146	1100 b	19.1	**Yes**	ASL
1-Bromo-3-fluorobenzene	1073-06-9	115 J	115 J	SS17	1 / 146	NL	NC	**Yes**	NV
11H-Benzo(b)fluorene	30777-19-6	115 J	3010	SS131	15 / 146	NL	NC	**Yes**	NV
2-Bromopyridine	109-04-6	8870	8870	SS17	1 / 146	NL	NC	**Yes**	NV
3,4-Dichlorobenzotrifluoride	328-84-7	105 J	11300	SS17	4 / 146	NL	NC	**Yes**	NV
3-Amino-4-chlorobenzotrifluoride	121-50-6	135 J	1350	SS18	2 / 146	NL	NC	**Yes**	NV
3-Nitro-4-chlorobenzotrifluoride	121-17-5	574	3820	SS18	2 / 146	NL	NC	**Yes**	NV
4-Bromofluorobenzene	460-00-4	9730	9730	SS17	1 / 146	NL	NC	**Yes**	NV
Benzo(e)pyrene	192-97-2	103 J	8560	SS49	57 / 146	NL	NC	**Yes**	NV
Perylene	198-55-0	99.2 J	2470	SS49	21 / 146	NL	NC	**Yes**	NV
Pesticides (µg/kg)									
4,4'-DDE	72-55-9	29	57	SS173	2 / 25	3.3 a	17.3	**Yes**	ASL
4,4'-DDT	50-29-3	5 J	18 J	SS173	2 / 26	3.3 a	5.5	**Yes**	ASL
alpha-BHC	319-84-6	0.31 JN	0.85 JN	SS17	3 / 25	40 a	0.02	No	BSL
beta-BHC	319-85-7	2.3 JN	2.3 JN	SS17	1 / 26	600 a	0.004	No	BSL
Dieldrin	60-57-1	0.59 J	0.59 J	SS17	1 / 26	6 a	0.10	No	BSL
Endrin	72-20-8	3.5 J	3.5 J	SS173	1 / 25	14 a	0.25	No	BSL
Endrin ketone	53494-70-5	27 J	27 J	SS12	1 / 26	14 a#	1.9	**Yes**	ASL
gamma-BHC (Lindane)	58-89-9	0.91 JN	0.91 JN	SS17	1 / 26	6000 a	0.0002	No	BSL
Methoxychlor	72-43-5	99 J	99 J	SS12	1 / 26	19.9 d	5.0	**Yes**	ASL
Dioxins and Furans (ng/kg)									
Total 2,3,7,8-TCDD TEC	NA	0.757	173	NA	NA	0.199 d***	871	**Yes**	ASL
Inorganic Analytes (mg/kg)									
Aluminum	7429-90-5	1460	9660	SS120	146 / 146	NL	NT	No	NV
Antimony	7440-36-0	0.46 J	22.2	SS156	11 / 146	0.27 b	82.2	**Yes**	ASL
Arsenic	7440-38-2	1.6 J	24 J	SS57	143 / 143	13 a	1.8	**Yes**	ASL
Barium	7440-39-3	19.7 J	452	SS147	146 / 146	433 a	1.0	**Yes**	ASL
Beryllium	7440-41-7	0.1 J	0.47	SS134	145 / 146	10 a	0.05	No	BSL

Table 5-1
Chemicals of Potential Concern Detected in Soil
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value	Hazard Quotient	COPC	Rationale
Cadmium	7440-43-9	0.15 J	2.3	SS57	126 / 146	4 a	0.58	No	BSL
Calcium	7440-70-2	954	130000	SS70	145 / 145	NL	NC	No	EN
Chromium	7440-47-3	4.7	26.6	SS158	146 / 146	41 a**	0.65	No	BSL
Cobalt	7440-48-4	1.2 J	6.5	SS83	146 / 146	13 b	0.5	No	BSL
Copper	7440-50-8	3.9	103	SS147	146 / 146	50 a	2.1	**Yes**	ASL
Iron	7439-89-6	5250	36800	SS57	146 / 146	NL	NC	No	NT
Lead	7439-92-1	3.7 J	1670	SS57	146 / 146	63 a	26.5	**Yes**	ASL
Magnesium	7439-95-4	1270	74800	SS70	146 / 146	NL	NC	No	EN
Manganese	7439-96-5	127	1010	SS87	146 / 146	1600 a	0.63	No	BSL
Mercury	7439-97-6	0.027 J	7.8	SS62	122 / 146	0.18 a	43.3	**Yes**	ASL
Nickel	7440-02-0	5.6	28.7	SS57	146 / 146	30 a	0.96	No	BSL
Potassium	7440-09-7	319 J	1010	SS11	146 / 146	NL	NC	No	EN
Selenium	7782-49-2	0.07 J	6 J	SS57	141 / 146	3.9 a	1.5	**Yes**	ASL
Silver	7440-22-4	0.4 J	0.65 J	SS57	2 / 146	2 a	0.33	No	BSL
Sodium	7440-23-5	203 J	587	SS124	13 / 146	NL	NC	No	EN
Thallium	7440-28-0	0.05	0.36	SS17	16 / 146	0.057 e	6.3	**Yes**	ASL
Vanadium	7440-62-2	6.2	35.4	SS57	146 / 146	7.8 b	4.5	**Yes**	ASL
Zinc	7440-66-6	20.1	913	SS57	146 / 146	109 a	8.4	**Yes**	ASL

ng/kg - nanograms per kilogram

µg/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

ASL - above screening level

BSL - below screening level

COPC - contaminant of potential concern

EN - essential nutrient

J - estimated

JN - estimated

LC - considered a common laboratory contaminant

NC - no hazard quotient calculated

NL - not listed

NT - not toxic at soil pH measured; regulated by plants

NV - chemical detected, but no screening value located

Total 2,3,7,8 - TCDD TEC -total 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalence concentration

a - New York State Department of Environmental Conservation. 2006. Remedial Program Soil Cleanup Objectives, Protection of Ecological Resources. December.

b - United States Environmental Protection Agency (EPA). 2007. Ecological Soil Screening Values

c - Efroymson, R.A., G.W. Suter II, B.E. Sample, and D.S. Jones, 1997. Preliminary Remediation Goals for Ecological Endpoints. Oak Ridge National Laboratory. August.

d - Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle, WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration.

e - EPA Region 5. 2003. Resource, Conservation, Recovery, Act Ecological Screening Levels. August.

* value for mixed xylene

** value for trivalent chromium

*** value for sum of PCDDs

value for endrin

Bold - retained as COPC

Table 5-2
Chemicals of Potential Concern Detected in Sediment
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value		Hazard Quotient	COPC	Rationale
Volatile Organic Compounds (µg/kg)										
2-Butanone	78-93-3	11 J	11 J	SD-08-R1	1 / 8	42.4	c	0.26	No	BSL
Acetone	67-64-1	12 J	23	SD-08-R1	3 / 8	9.9	c	2.3	No	LC
Toluene	108-88-3	0.87 J	0.87 J	SD-06-R1	1 / 8	1127	a*	0.001	No	BSL
4-Chlorobenzotrifluoride	98-56-6	1.89 J	1.89 J	SD-10-R1	1 / 8	NL		NC	**Yes**	NV
Semi-Volatile Organic Compounds (µg/kg)										
11H-Benzo(b)fluorene	30777-19-6	132 J	132 J	SD-09-R1	1 / 8	NL		NC	**Yes**	NV
Benzo(e)pyrene	192-97-2	122 J	2670	SD-09-R1	3 / 8	NL		NC	**Yes**	NV
Perylene	198-55-0	125 J	458 J	SD-09-R1	2 / 8	NL		NC	**Yes**	NV
2-Methylnaphthalene	91-57-6	4.2 J	12	SD-11-R1	2 / 8	510	a*	0.024	No	BSL
Acenaphthene	83-32-9	4.3 J	30 J	SD-11-R1	2 / 8	2100	a*	0.014	No	BSL
Acenaphthylene	208-96-8	5	13	SD-11-R1	4 / 8	5.9	b	2.2	**Yes**	ASL
Anthracene	120-12-7	9.1 J	150 J	SD-11-R1	5 / 8	1605	a*	0.093	No	BSL
Atrazine	1912-24-9	510	510	SD-09-R1	1 / 8	14.6	b*	34.9	**Yes**	ASL
Benzo(a)anthracene	56-55-3	5.4	510 J	SD-11-R1	7 / 8	180	a*	2.8	**Yes**	ASL
Benzo(a)pyrene	50-32-8	26	580 J	SD-11-R1	6 / 8	150	b	3.9	**Yes**	ASL
Benzo(b)fluoranthene	205-99-2	9.2	590 J	SD-11-R1	7 / 8	27.2	b	21.7	**Yes**	ASL
Benzo(g,h,i)perylene	191-24-2	8.7	130 J	SD-11-R1	6 / 8	170	b	0.765	No	BSL
Benzo(k)fluoranthene	207-08-9	13	220 J	SD-11-R1	6 / 8	27.2	b	8.1	**Yes**	ASL
Carbazole	86-74-8	47 J	47 J	SD-11-R1	1 / 8	NL		NC	**Yes**	NV
Chrysene	218-01-9	6.6	490 J	SD-11-R1	7 / 8	166	b	3.0	**Yes**	ASL
Di-n-octylphthalate	117-84-0	28 J	28 J	SD-11-R1	1 / 6	40600	c	0.001	No	BSL
Fluoranthene	206-44-0	9.2	1600 J	SD-11-R1	7 / 8	15300	a*	0.105	No	BSL
Fluorene	86-73-7	38	38	SD-11-R1	1 / 8	120	a*	0.317	No	BSL
Indeno(1,2,3-cd)pyrene	193-39-5	15	220 J	SD-11-R1	6 / 8	17	b	12.9	**Yes**	ASL
Naphthalene	91-20-3	2.2 J	14	SD-11-R1	4 / 8	450	a*	0.031	No	BSL
Phenanthrene	85-01-8	12	740 J	SD-11-R1	6 / 8	1800	a*	0.411	No	BSL
Pyrene	129-00-0	15	1600 J	SD-11-R1	7 / 8	14415	a*	0.111	No	BSL
Inorganic Analytes (mg/kg)										
Aluminum	7429-90-5	1670	6580	SD-10-R1	8 / 8	NL		NC	**Yes**	NV
Antimony	7440-36-0	0.05 J	0.19 J	SD-11-R1	7 / 8	2	a*	0.095	No	BSL
Arsenic	7440-38-2	1.1 J	3.2 J	SD-07-R1	8 / 8	6	a*	0.533	No	BSL
Barium	7440-39-3	24.3 J	96.9 J	SD-07-R1	8 / 8	NL		NC	**Yes**	NV
Beryllium	7440-41-7	0.08 J	0.25	SD-10-R1	8 / 8	NL		NC	**Yes**	NV
Calcium	7440-70-2	4490	141000	SD-06-R1	8 / 8	NL		NC	No	EN
Chromium	7440-47-3	3.5 J	12.9 J	SD-11-R1	8 / 8	26	a*	0.496	No	BSL
Cobalt	7440-48-4	1.9 J	4.5 J	SD-07-R1	7 / 8	50	b	0.090	No	BSL
Copper	7440-50-8	2.3 J	9.3	SD-07-R1	8 / 8	16	a*	0.581	No	BSL
Iron	7439-89-6	5320	16400	SD-10-R1	8 / 8	20000	a*	0.820	No	BSL
Lead	7439-92-1	3.7 J	25.1 J	SD-11-R1	8 / 8	31	a*	0.810	No	BSL
Magnesium	7439-95-4	1360	52500	SD-06-R1	8 / 8	NL		NC	No	EN
Nickel	7440-02-0	3.8 J	19.4	SD-10-R1	8 / 8	16	a*	1.2	**Yes**	ASL

Table 5-2
Chemicals of Potential Concern Detected in Sediment
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value		Hazard Quotient	COPC	Rationale
Potassium	7440-09-7	276 J	998	SD-10-R1	8 / 8	NL		NC	No	EN
Selenium	7782-49-2	0.05 J	0.18 J	SD-07-R1	6 / 8	2	b	0.090	No	BSL
Sodium	7440-23-5	243 J	243 J	SD-06-R1	1 / 8	NL		NC	No	EN
Vanadium	7440-62-2	4.8 J	13	SD-10-R1	8 / 8	NL		NC	**Yes**	NV
Zinc	7440-66-6	16.2	386	SD-06-R1	8 / 8	120	a*	3.2	**Yes**	ASL

µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
ASL - above screening level
BSL - below screening level
COPC - contaminant of potential concern
EN - essential nutrient
J - estimated
LC - considered a common laboratory contaminant
NC - no hazard quotient calculated
NL - not listed
NV - chemical detected, but no screening value located
a - New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources. 1998. Technical Guidance for Screening Contaminated Sediments. March.
b - United States Environmental Protection Agency (EPA), Region 3 Biological Technical Assitance Group. 2006. Freshwater Sediment Screening Benchmarks. August.
c - EPA Region 5. 2003. Resource, Conservation, Recovery, Act Ecological Screening Levels. August.
*where applicable, screening values adjusted to location specific organic carbon content
Bold - retained as COPC

Table 5-3
Chemicals of Potential Concern Detected in Surface Water
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected		Maximum Concentration Detected		Sample Location of Maximum Concentration	Frequency of Detection	Screening Value		Hazard Quotient	COPC	Rationale
Semi-Volatile Organic Compounds (µg/L)												
Pentachlorophenol	87-86-5	0.2		0.2		SEEP1A-R1	1 / 9	6.69	a#	0.03	No	BSL
Inorganic Analytes (µg/L)												
Aluminum	7429-90-5	118		644		SEEP1A-R1	2 / 9	100	a	6.4	**Yes**	ASL
Arsenic	7440-38-2	1.2	J	2.2	J	SEEP1A-R1	9 / 9	150	a	0.01	No	BSL
Barium	7440-39-3	67.6		197		SEEP1A-R1	9 / 9	3.9	b	50.5	**Yes**	ASL
Cadmium	7440-43-9	0.36	J	0.36	J	SEEP1A-R1	1 / 9	6.1	a*	0.06	No	BSL
Calcium	7440-70-2	80100		113000		SEEP1A-R1	9 / 9	NL		NC	No	EN
Chromium	7440-47-3	1.2	J	1.2	J	SEEP1A-R1	1 / 9	226	a*	0.01	No	BSL
Cobalt	7440-48-4	1.2		1.2		SEEP1A-R1	1 / 9	5	a	0.24	No	BSL
Copper	7440-50-8	0.8	J	18.8	J	SEEP1A-R1	6 / 9	29	a*	0.65	No	BSL
Iron	7439-89-6	109		713		SEEP1A-R1	9 / 9	300	a	2.4	No	NT
Lead	7439-92-1	0.4	J	28		SEEP1A-R1	4 / 9	16	a*	1.8	**Yes**	ASL
Magnesium	7439-95-4	14800		30300		SW-10-R1	9 / 9	NL		NC	No	EN
Manganese	7439-96-5	18.9		190		SEEP1A-R1	9 / 9	80	b	2.4	**Yes**	ASL
Nickel	7440-02-0	0.69	J	2	J	SEEP1A-R1	6 / 9	164	a*	0.01	No	BSL
Potassium	7440-09-7	2750	J	5260		SW-10-R1	9 / 9	NL		NC	No	EN
Selenium	7782-49-2	0.31	J	0.87	J	SEEP1A-R1	6 / 9	4.6	a	0.19	No	BSL
Sodium	7440-23-5	14100		193000		SEEP1A-R1	9 / 9	NL		NC	No	EN
Vanadium	7440-62-2	2.4	J	2.4	J	SEEP1A-R1	1 / 9	14	a	0.17	No	BSL
Zinc	7440-66-6	0.83	J	92		SEEP1A-R1	9 / 9	547	a*	0.17	No	BSL

µg/L - micrograms per liter
ASL - above screening level
BSL - below screening level
COPC - contaminant of potential concern
EN - essential nutrient
J - estimated
NC - no hazard quotient calculated
NL - not listed
NT - not toxic; ecological affects from high iron is attributed to the precipatation of iron oxides and the smothering/embeddings of benthic organisms.
NV - chemical detected, but no screening value located
a- New York State Department of Environmental Conservation, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June.
b - Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle, WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration.
- screening value is pH dependent, no surface water pH was collected value adjusted using a pH of 7.0.
* screening value adjust using location specific hardness
Bold - retained as COPC

Table 5-4
Chemicals of Potential Concern Detected in Pore Water
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS Number	Minimum Concentration Detected	Maximum Concentration Detected	Sample Location of Maximum Concentration	Frequency of Detection	Screening Value [1]	Hazard Quotient	COPC	Rationale
Volatile Organic Compounds (µg/L)									
4-Chlorobenzotrifluoride	98-56-6	2.14 J	9.36	PW-07-R1	3 / 4	NL	NC	**Yes**	NV
1,1,1-Trichloroethane	71-55-6	0.13 J	0.13 J	PW-07-R1	1 / 4	11 b	0.012	No	BSL
Methyl Tert-Butyl Ether	1634-04-4	0.072 J	0.072 J	PW-10ALT-R1	1 / 4	10000 b	0.0000072	No	BSL
Toluene	108-88-3	0.056 J	0.056 J	PW-08-R1	1 / 4	100 a	0.00056	No	BSL
Semi-Volatile Organic Compounds (µg/L)									
bis(2-Ethylhexyl)phthalate	117-81-7	2.8 J	2.8 J	PW-08-R1	1 / 4	0.6 a	4.7	No	LC
Inorganic Analytes (µg/L)									
Aluminum	7429-90-5	76.9 J	102	PW-07-R1	2 / 2	100 a	1.0	**Yes**	ASL
Arsenic	7440-38-2	1.2 J	1.4 J	PW-09-R1	2 / 2	150 a	0.009	No	BSL
Barium	7440-39-3	105	200	PW-07-R1	2 / 2	3.9 b	51.3	**Yes**	ASL
Calcium	7440-70-2	99600	164000	PW-07-R1	2 / 2	NL	NC	No	EN
Cobalt	7440-48-4	0.36 J	0.36 J	PW-07-R1	1 / 2	5 a	0.072	No	BSL
Copper	7440-50-8	2.3 J	2.3 J	PW-07-R1	1 / 2	40.5 a	0.057	No	BSL
Iron	7439-89-6	38 J	90.3 J	PW-09-R1	2 / 2	300 a	0.301	No	BSL
Magnesium	7439-95-4	29300	42200	PW-07-R1	2 / 2	NL	NC	No	EN
Manganese	7439-96-5	91.3	617	PW-07-R1	2 / 2	80 b	7.7	**Yes**	ASL
Nickel	7440-02-0	0.72 J	0.8 J	PW-09-R1	2 / 2	157 a	0.005	No	BSL
Potassium	7440-09-7	3380 J	4940 J	PW-07-R1	2 / 2	NL	NC	No	EN
Selenium	7782-49-2	0.39 J	1.1 J	PW-09-R1	2 / 2	4.6 a	0.239	No	BSL
Sodium	7440-23-5	59100	107000	PW-07-R1	2 / 2	NL	NC	No	EN
Zinc	7440-66-6	7 J	9.9 J	PW-07-R1	2 / 2	817 a	0.012	No	BSL

µg/L - micrograms per liter

ASL - above screening level

BSL - below screening level

COPC - contaminant of potential concern

EN - essential nutrient

J - estimated

LC - considered a common laboratory contaminant

NC - no hazard quotient calculated

NL - not listed

NT - not toxic; ecological affects from high iron is attributed to the precipatation of iron oxides and the smothering/embeddings of benthic organisms.

NV - chemical detected, but no screening value located

1 - surface water screening values used

a- New York State Department of Environmental Conservation, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June.

b - Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle, WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration.

- screening value is pH dependent, no surface water pH was collected value adjusted using a pH of 7.0.

* screening value adjust using location specific hardness

Bold - retained as COPC

Table 5-5
Concentrations of Chemicals of Potential Concern Detected in Background Samples to Maximum Concentrations Detected in Site Media
Diaz Chemical Corporation Site
Holley, New York

Media	Chemical of Potential Concern	Units	Hazard Quotient	Rationale	Site-related?[1]	Minimum Background Concentration Detected	Maximum Concentration Detected
Soil	4-Chlorobenzotrifluoride	µg/kg	NC	NV	Yes	ND	29500
	Fluorobenzene	µg/kg	NC	NV	Yes	ND	3.28 J
	2,4-Dimethylphenol	µg/kg	10	ASL	No	ND	100 J
	2-Chloronaphthalene	µg/kg	2.0	ASL	No	ND	24 J
	2-Methylnaphthalene	µg/kg	1.5	ASL	No	120	4900 J
	2-Methylphenol	µg/kg	NC	NV	No	ND	120 J
	4-Chlorophenyl-phenylether	µg/kg	NC	NV	No	ND	20 J
	4-Methylphenol	µg/kg	NC	NV	No	ND	310 J
	Atrazine	µg/kg	NC	NV	No	ND	14 J
	Benzaldehyde	µg/kg	NC	NV	No	200	1000
	Benzo(a)anthracene	µg/kg	13.6	ASL	No	470	15000 J
	Benzo(a)pyrene	µg/kg	5.4	ASL	No	580	14000 J
	Benzo(g,h,i)perylene	µg/kg	9.1	ASL	No	170	10000 J
	Carbazole	µg/kg	NC	NV	No	42	1800 J
	Chrysene	µg/kg	12.7	ASL	No	300	14000 J
	Dibenz(a,h)anthracene	µg/kg	2.5	ASL	No	66	2700 J
	Dibenzofuran	µg/kg	NC	NV	No	80	2000
	Fluoranthene	µg/kg	18.2	ASL	No	360	20000
	Indeno(1,2,3-cd)pyrene	µg/kg	12.7	ASL	No	590	14000 J
	Pyrene	µg/kg	19.1	ASL	No	470	21000 J
	1-Bromo-3-fluorobenzene	µg/kg	NC	NV	Yes	ND	115 J
	11H-Benzo(b)fluorene	µg/kg	NC	NV	Yes	138	3010
	2-Bromopyridine	µg/kg	NC	NV	Yes	ND	8870
	3,4-Dichlorobenzotrifluoride	µg/kg	NC	NV	Yes	ND	11300
	3-Amino-4-chlorobenzotrifluoride	µg/kg	NC	NV	Yes	ND	1350
	3-Nitro-4-chlorobenzotrifluoride	µg/kg	NC	NV	Yes	ND	3820
	4-Bromofluorobenzene	µg/kg	NC	NV	Yes	ND	9730
	Benzo(e)pyrene	µg/kg	NC	NV	Yes	566	8560
	Perylene	µg/kg	NC	NV	Yes	186	2470
	4,4'-DDE	µg/kg	17.3	ASL	No	3.8	57
	4,4'-DDT	µg/kg	5.5	ASL	No	4.1	18 J
	Endrin ketone	µg/kg	1.9	ASL	No	ND	27 J
	Methoxychlor	µg/kg	5.0	ASL	No	ND	99 J
	Total 2,3,7,8-TCDD TEC	ng/kg	871	ASL	No	NC	173
	Antimony	mg/kg	82.2	ASL	No	14.8	22.2
	Arsenic	mg/kg	1.8	ASL	No	1.8	24 J
	Barium	mg/kg	1.0	ASL	No	37.9	452
	Copper	mg/kg	2.1	ASL	No	5.3	103
	Lead	mg/kg	26.5	ASL	No	6.9	1670
	Mercury	mg/kg	43.3	ASL	No	ND	7.8
	Selenium	mg/kg	1.5	ASL	No	1.0	6 J
	Thallium	mg/kg	6.3	ASL	No	3.8	0.36
	Vanadium	mg/kg	4.5	ASL	No	9.2	35.4
	Zinc	mg/kg	8.4	ASL	No	21.7	913

Table 5-5
Concentrations of Chemicals of Potential Concern Detected in Background Samples to Maximum Concentrations Detected in Site Media
Diaz Chemical Corporation Site
Holley, New York

Media	Chemical of Potential Concern	Units	Hazard Quotient	Rationale	Site-related?[1]	Minimum Background Concentration Detected	Maximum Concentration Detected
Sediment	4-Chlorobenzotrifluoride	µg/kg	NC	NV	Yes	ND	1.89 J
	11H-Benzo(b)fluorene	µg/kg	NC	NV	Yes	125 J	132 J
	Benzo(e)pyrene	µg/kg	NC	NV	Yes	700	2670
	Perylene	µg/kg	NC	NV	Yes	267 J	458 J
	Acenaphthylene	µg/kg	2.2	ASL	No	3.8 J	13
	Atrazine	µg/kg	34.9	ASL	No	ND	510
	Benzo(a)anthracene	µg/kg	2.8	ASL	No	36 J	510 J
	Benzo(a)pyrene	µg/kg	3.9	ASL	No	29 J	580 J
	Benzo(b)fluoranthene	µg/kg	21.7	ASL	No	33 J	590 J
	Benzo(k)fluoranthene	µg/kg	8.1	ASL	No	5.7	220 J
	Carbazole	µg/kg	NC	NV	No	ND	47 J
	Chrysene	µg/kg	3.0	ASL	No	30 J	490 J
	Indeno(1,2,3-cd)pyrene	µg/kg	12.9	ASL	No	5.9	220 J
	Aluminum	mg/kg	NC	NV	No	4220 J	6580
	Barium	mg/kg	NC	NV	No	239 J	96.9 J
	Beryllium	mg/kg	NC	NV	No	0.11 J	0.25
	Nickel	mg/kg	1.2	ASL	No	13.9	19.4
	Vanadium	mg/kg	NC	NV	No	11.3	13
	Zinc	mg/kg	3.2	ASL	No	735 J	386
Surface Water	Aluminum	µg/L	6.4	ASL	No	93.3 J	644
	Barium	µg/L	50.5	ASL	No	59.5	197
	Lead	µg/L	1.8	ASL	No	ND	28
	Manganese	µg/L	2.4	ASL	No	31.3	190
Pore Water	4-Chlorobenzotrifluoride	µg/L	NC	NV	Yes	ND	9.36
	Aluminum	µg/L	1.0	ASL	No	85.7 J	102
	Barium	µg/L	51.3	ASL	No	55.6	200
	Manganese	µg/L	7.7	ASL	No	205	617

µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
ng/kg - nanograms per kilogram
µg/L - micrograms per liter
ASL - above screening level
J - estimated
NC - Total 2,3,7,8-TCDD TEC not calculated for background
ND - chemical not detected
NV - chemical detected, but no screening value located
Total 2,3,7,8 - TCDD TEC -total 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalence concentration
1 - chemical determined as site-related based on the results of the remedial investigation (CDM 2011)

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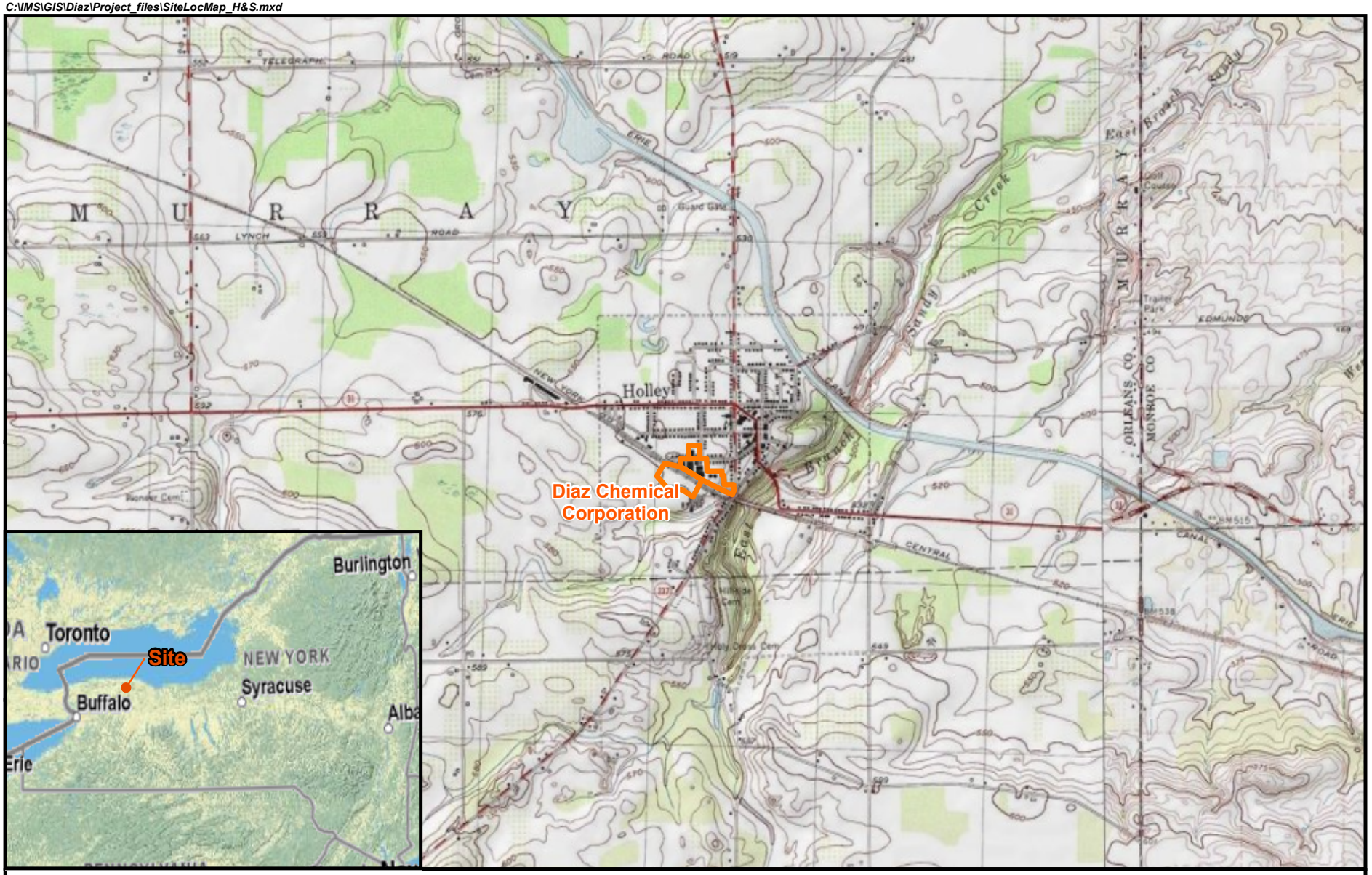

Figure 2-1
Site Location Map
Diaz Chemical Corporation Site
Holley, New York

CDM

R2-0000315

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24 Van Buren St
26 Van Buren St
28 Van Buren St
27 South Main St
31 South Main St
33 South Main St
37 South Main St
28 South Main St
26A/B South Main St
39 Jackson St
19 Jackson St
13 Jackson St
11 Jackson St
9 Jackson St
18 Jackson St
16 Jackson St
14 Jackson St
10 Jackson St
8 Jackson St
6 Jackson St
2 Jackson St
40 South Main St
41 South Main St
42 South Main St
43 South Main St
45 South Main St
49 South Main St
53 South Main St
55 South Main St
54 South Main St
23 Thomas St
27 Thomas St
26 Thomas St
28 Thomas St
30 Batavia St
12 Batavia St
VAN BUREN STREET
JACKSON STREET
THOMAS STREET
BATAVIA STREET
S MAIN STREET
WAREHOUSE 9
WAREHOUSE 2
WAREHOUSE 3
MAINTENANCE SHOP
AREA F
SOUTH WAREHOUSE
(DEMOLISHED)
CHIMNEY
UNNAMED TRIBUTARY
East Branch Sandy Creek
SEEP1A
SB-22
SB-23
SB-25
SB-26
SB-171
SB-172
SB-173
SB-175
SB-176
SS-11
SS-12
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SD-09
SD-10
SD-11
PW-07
PW-08
PW-09
PW-10ALT

Pore Water Sample
Sediment Sample
Seep Sample
Soil Boring Sample
Surface Soil Sample
Surface Water
Former Diaz Chemical Corporation Facility

0 37.5 75 150 225 300 Feet

N

Figure 2-2
Sample Location Map
Diaz Chemical Corporation Site
Holley, New York

CDM

R2-0000316

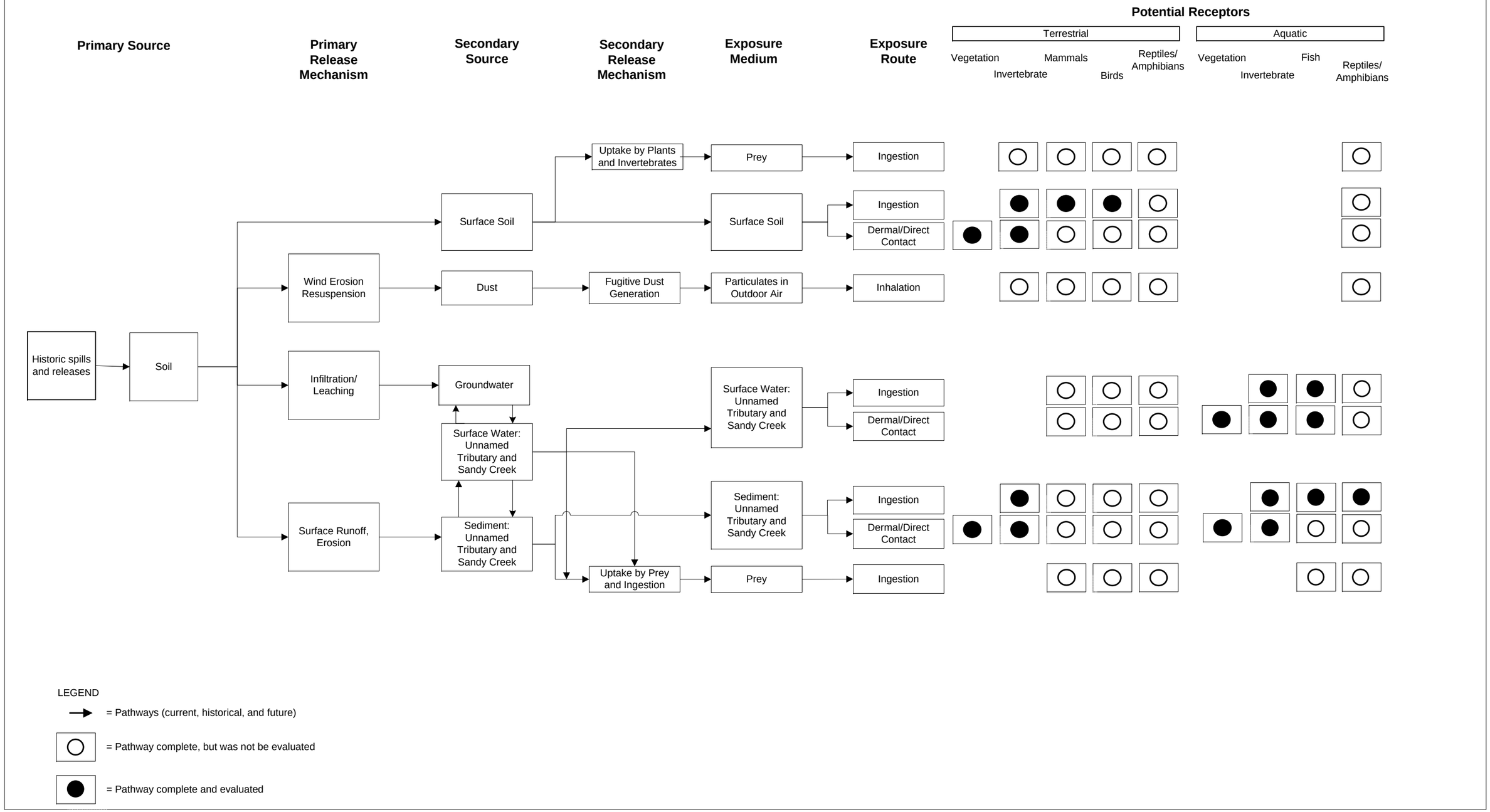


Figure 2-3
Conceptual Site Model
Diaz Chemical Site
Holley, New York

R2-0000317

Appendix A

Letters from the United States Environmental Protection Agency and New York State Department of Environmental Conservation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

DEC 0 3 2010

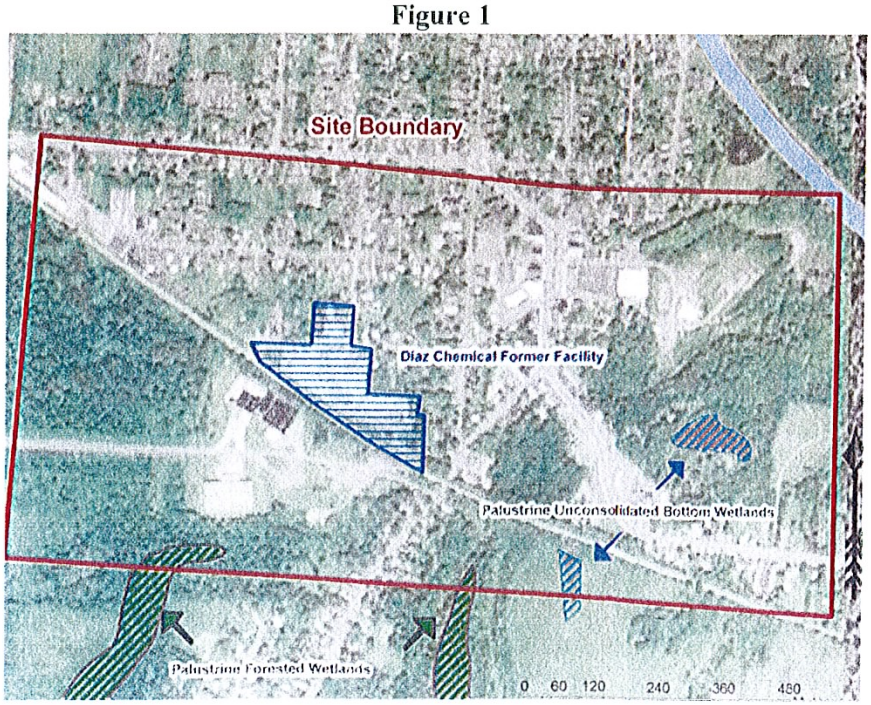
George G. Molnar
Environmental Scientist
CDM Federal
1110 Fieldcrest Avenue, 6th Floor
Edison, New Jersey 08837

Dear Mr. Molnar:

I have received your request for information concerning Federally-listed endangered or threatened species or critical habitats located on or in the vicinity of the Diaz Chemical Superfund Site (Diaz Chemical), located in the Village of Holly, Town of Murray, Orleans County, New York. It is my understanding that this information is needed to assist in the preparation of a screening level ecological risk assessment for this project.

Diaz Chemical (see Figure 1) was a manufacturer of specialty organic intermediates for the agricultural, pharmaceutical, photographic, color and dye, and personal care products industries. The specific product line varied over the years of operation but primarily consisted of halogenated aromatic compounds and substituted benzotrifluorides. The Diaz Chemical facility had a history of spills, releases and discharges of various materials; an air release in 2002 led to the relocation of several nearby residences. In 2003, the company declared bankruptcy, and EPA has subsequently removed 112,000 gallons and over 900 drums of hazardous materials from the site, and removed the majority of the former onsite facilities. EPA is currently investigating groundwater, soil, surface water and sediment in the project vicinity, in order to determine the extent of site-related contamination, as well as to evaluate potential remedial alternatives.

Figure 1



Pursuant to the New York Field Office of the U.S. Fish and Wildlife Service (FWS) request, the Environmental Protection Agency (EPA) has reviewed information on the FWS website, as well as the New York State Natural Heritage Program (NYSNHP) website, to determine what, if any, impacts to Federally-listed endangered or threatened species or critical habitats are possible as a result of the implementation of the proposed project. Written consultation is necessary if EPA determines that the proposed project may affect Federally-listed species.

Accordingly, we have reviewed the available information located on the FWS website in relation to the potential impact area associated with the Diaz Chemical site. Our review notes that the Bog turtle (*Clemmys muhlenbergii*) and Eastern prairie fringed orchid (*Platanthera leucophea*) are listed as being found within Orleans County. As requested on the FWS website, we then accessed the NYSNHP website for more information about the distribution of these species within New York.

The bog turtle, one of the smallest turtles in the world is a Federally-listed threatened species. In New York, bog turtles occur in open-canopy wet meadows, sedge meadows, and calcareous fens. As seen in Figure 2, the potential range of the bog turtle within New York State is quite large, while the known occurrences are much more discreet. Looking further into the New York State Herpetological Atlas (Figure 3), it becomes apparent that the bog turtle is far more prevalent in far southeastern New York then in upstate New York, where very distinct limited populations are known from Oswego, Seneca and Wayne Counties.

Further, after a review of National Wetlands Inventory (NWI) GIS mapping, limited wetlands habitat occurs in the project area. There are no NWI wetlands located on the facility proper, and only a few patches of wetlands, including one small forested wetland and two small ponds, located within the more extensive project impact area.

In consideration of the above information, EPA has determined that any future proposed remedial actions will have no effect on the bog turtle or its habitat.

The Eastern prairie fringed orchid, another Federally-listed threatened species, occurs in a wide variety of habitats, from prairie to wetlands such as sedge meadows, marsh edges, and bogs. It requires full sun and a grassy, tree-free habitat. According to the FWS, it is only known from Orleans County historical records. A closer look at information from the New York State Department of Environmental Conservation (NYSDEC), as well as the NYSNHP website, indicates that historic populations were located in the Towns of Barre and Shelby, located to the south and west of the Town of Murray. Further, the online New York Flora Atlas (http://newyork.plantatlas.usf.edu/Plant.aspx?id=1990) notes that no vouchered prairie-fringed orchid specimens have been found in Orleans County. Accordingly, while there are historic records from Orleans County, there is no information indicating that the Eastern prairie fringed orchid has ever been found within the project impact area.

Figure 2: Bog Turtle Distribution in New York State:
New York Natural Heritage Program
http://www.acris.nynhp.org/map.php?id=7507

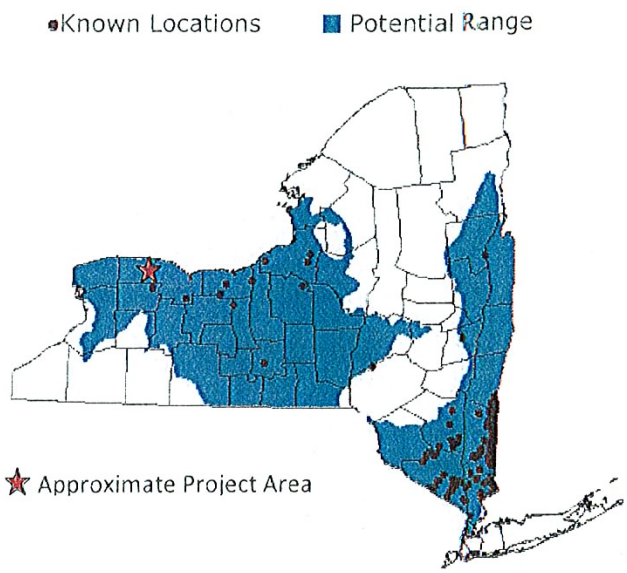
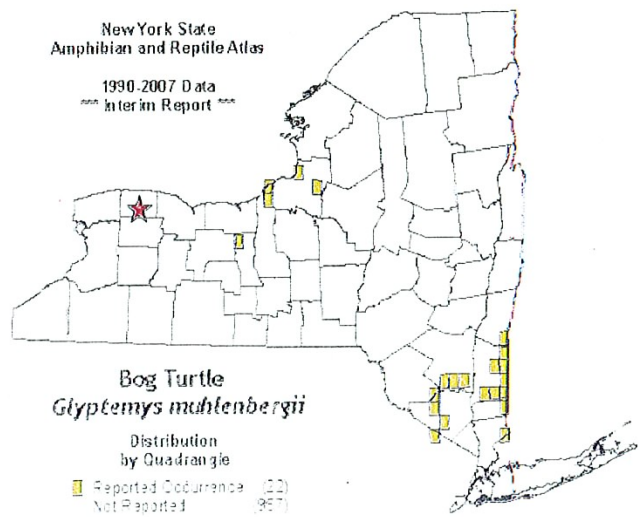
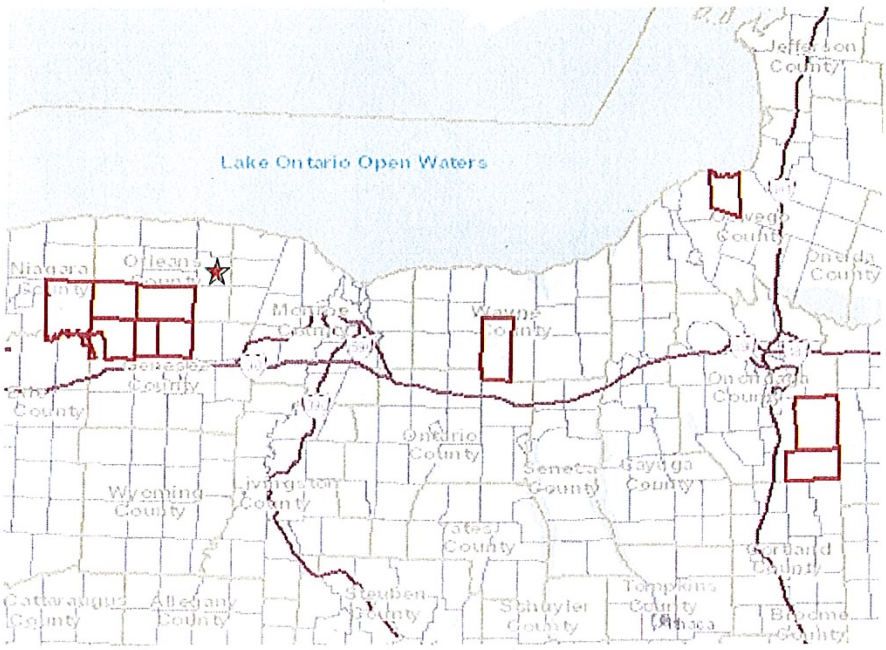


Figure 3: Bog Turtle Distribution in New York State:
New York Herpetological Atlas
http://www.dec.ny.gov/animals/44397.html



Approximate Project Area

Figure 4: Distribution of Eastern Prairie Fringed Orchid (Mainly Historic)
http://www.dec.ny.gov/natureexplorer/app/species/results.12



★ Approximate Project Area

Consequently, after review, EPA has determined that the investigation and cleanup of the Diaz Chemical Superfund Site will have no effect on Federally-listed threatened or endangered species or their critical habitats.

Please note that should the scope of future investigations or cleanups associated with this site go beyond the approximate boundaries of Figure 1, or should additional species be listed or the species distribution of currently listed species change, a revised determination from this office will be needed.

Sincerely,

Steven J Ferreira
Environmental Scientist
Environmental Review Section

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925

Alexander B. Grannis
Commissioner

August 3, 2009

George C. Molnar
C D M Federal Programs Corp
Raritan Plaza 1, Raritan Center
Edison, NJ 08818-3142

Dear Mr. Molnar:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Remedial Investigation/Feasibility Study - Diaz Chemical Corp., site as indicated on the map you provided, located in the Town of Murray, Orleans County.

We have no records of <u>known</u> occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of your site.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain any information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of rare or state-listed species, or of significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,
Tara Salerno jp
Tara Salerno, Information Services
NY Natural Heritage Program

Enc.
cc: Reg. 8, Wildlife Mgr.
Reg. 8, Fisheries Mgr.

New York State Department of Environmental Conservation

Regional Permit Administrators

Region	Counties	Regional Permit Administrator
1	Nassau & Suffolk FAX: 631-444-0360	Roger Evans NYSDEC 50 Circle Rd SUNY @ Stony BrookStony Brook, NY 11790-3409 631-444-0365 631-444-0355 (Duty Analyst-M,W&F only)
2	New York City, (Boroughs of Manhattan,Brooklyn, Bronx, Queens & Staten Island) FAX: 718-482-4975	John Cryan NYSDEC One Hunters Point Plaza 47-40 21st St. Long Island City, NY 11101-5407 718-482-4997
3	Dutchess, Orange, Putnam, Rockland,Sullivan, Ulster & Westchester FAX: 845-255-3042	Margaret Duke NYSDEC 21 South Putt Corners Rd. New Paltz, NY 12561-1620 845-256-3054
4	Albany, Columbia, Greene, Montgomery,Rensselaer & Schenectady FAX:518-357-2460	William Clarke NYSDEC 1130 North Westcott Rd. Schenectady, NY 12306-2014 518-357-2069
4(sub-office)	Delaware, Otsego & Schoharie FAX: 607-652-2342	Kent Sanders* NYSDEC 65561 State Highway - Route 10 HCR #1, Box 3A Stamford, NY 12167-9503 607-652-7741
5	Clinton, Essex, Franklin & Hamilton FAX: 518-897-1394	Thomas Hall NYSDEC Route 86, P.O. Box 296 Ray Brook, NY 12977-0296 518-897-1234
5(sub-office)	Fulton, Saratoga, Warren & Washington FAX: 518-623-3603	Thomas Hall NYSDEC P.O. Box 220 232 Golf Course Rd. Warrensburg, NY 12885-0220 518-623-1281

1/8/2009

Appendix B

Analytical Results

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6	5.8 UJ	5.9 UJ	5.8 U	340 UJ	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,1,2,2-Tetrachloroethane	79-34-5	0.23 U	0.24 U	0.23 U	340 U	0.22 U	0.18 U	0.22 UJ	0.2 U	0.21 U	0.22 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5.8 UJ	5.9 UJ	5.8 U	340 UJ	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,1,2-Trichloroethane	79-00-5	1.1 U	1.1 U	1 U	340 U	0.98 U	0.83 U	1 UJ	0.9 U	0.95 U	0.99 U
1,1-Dichloroethane	75-34-3	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,1-Dichloroethene	75-35-4	3.5 U	3.6 U	3.5 U	340 U	3.3 U	2.8 U	3.3 UJ	3 U	3.2 U	3.3 U
1,2,3-Trichlorobenzene	87-61-6	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,2,4-Trichlorobenzene	120-82-1	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,2-Dibromo-3-chloropropane	96-12-8	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,2-Dibromoethane	106-93-4	5.8 UJ	5.9 UJ	5.8 U	340 UJ	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,2-Dichlorobenzene	95-50-1	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,2-Dichloroethane	107-06-2	0.49 J	1.3 J	1.2 U	340 UJ	1.1 U	0.92 U	1.1 UJ	1 U	1.1 U	1.1 U
1,2-Dichloropropane	78-87-5	1.2 U	1.2 U	1.2 U	340 U	1.1 U	0.92 U	1.1 UJ	1 U	1.1 U	1.1 U
1,3-Dichlorobenzene	541-73-1	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,4-Dichlorobenzene	106-46-7	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
1,4-Dioxane	123-91-1	120 R	120 R	120 R	6800 R	110 R	100 R	99 R	120 R	100 R	110 R
2-Butanone	78-93-3	12 U	27	12 U	680 U	11 U	10 U	9.9 U	12 U	10 U	11 U
2-Hexanone	591-78-6	12 U	12 U	12 U	680 U	11 U	10 U	9.9 U	12 U	10 U	11 U
4-Methyl-2-pentanone	108-10-1	12 U	12 U	12 U	680 U	11 U	10 U	9.9 U	12 U	10 U	11 U
Acetone	67-64-1	12 U	100	12 U	680 U	11 U	10 U	9.9 U	12 U	10 U	11 U
Benzene	71-43-2	2.3 U	0.12 J	2.3 U	340 U	2.2 U	1.8 U	2.2 UJ	2 U	2.1 U	2.2 U
Bromodichloromethane	75-27-4	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Bromoform	75-25-2	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Bromomethane	74-83-9	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Carbon Disulfide	75-15-0	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Carbon Tetrachloride	56-23-5	3.5 U	3.6 U	3.5 U	340 UJ	3.3 U	2.8 U	3.3 UJ	3 U	3.2 U	3.3 U
Chlorobenzene	108-90-7	5.8 U	5.9 U	5.8 U	24 J	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Chlorobromomethane	74-97-5	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Chloroethane	75-00-3	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Chloroform	67-66-3	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Chloromethane	74-87-3	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
cis-1,2-Dichloroethene	156-59-2	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
cis-1,3-Dichloropropene	10061-01-5	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Cyclohexane	110-82-7	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Dibromochloromethane	124-48-1	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Dichlorodifluoromethane	75-71-8	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Ethylbenzene	100-41-4	0.23 J	5.9 U	5.8 U	26 J	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Isopropylbenzene	98-82-8	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
m,p-Xylene	179601-23-1	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	0.14 J	0.15 J	5.7 U
Methyl Acetate	79-20-9	5.8 UJ	5.9 UJ	5.8 U	340 UJ	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Methyl Tert-Butyl Ether	1634-04-4	5.8 UJ	5.9 UJ	5.8 U	340 UJ	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Methylene Chloride	75-09-2	1.2 U	1.5 U	1.2 UJ	340 UJ	1.1 UJ	0.92 U	1.1 UJ	1 U	1.1 U	1.1 U

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
O-Xylene	95-47-6	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Styrene	100-42-5	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Tetrachloroethene	127-18-4	3.5 U	3.6 U	3.5 U	340 U	3.3 U	2.8 U	3.3 UJ	3 U	3.2 U	3.3 U
Toluene	108-88-3	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
trans-1,2-Dichloroethene	156-60-5	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
trans-1,3-Dichloropropene	10061-02-6	5.8 U	5.9 U	5.8 U	340 U	5.4 U	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Trichloroethene	79-01-6	3.5 U	3.6 U	3.5 U	340 U	3.3 U	2.8 U	3.3 UJ	3 U	3.2 U	3.3 U
Trichlorofluoromethane	75-69-4	1.4 J	1.7 J	1.3 J	340 UJ	0.6 J	5.2 U	5 U	5.8 U	5.2 U	5.7 U
Vinyl Chloride	75-01-4	0.82 U	0.83 U	0.81 U	340 U	0.76 U	0.64 U	0.78 UJ	0.7 U	0.74 U	0.77 U
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	5.95 U	6.02 U	61 U	58.1 U	5.43 U	5.62 U	5.68 U	5.95 U	5.68 U	5.81 U
4-Chlorobenzotrifluoride	98-56-6	5.95 U	5.3 J	19300 J	29500	5.43 U	5.62 U	5.68 U	5.95 U	5.68 U	5.81 U
1-Bromo-2-chloroethane	107-04-0	5.95 U	6.02 U	61 U	58.1 U	5.43 U	5.62 U	5.68 U	5.95 U	5.68 U	5.81 U
1,3-Dibromobenzene	108-36-1	5.95 U	6.02 U	61 U	58.1 U	5.43 U	5.62 U	5.68 U	5.95 U	5.68 U	5.81 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	190 U	23 J	760 J	37 J	180 U	190 U	190 U	13 J	31 J	200 U
1,2,4,5-Tetrachlorobenzene	95-94-3	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
2,2'-oxybis(1-Chloropropane)	108-60-1	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
2,4,5-Trichlorophenol	95-95-4	120 U	120 U	110 U	120 U	110 U	190 U	110 U	190 U	190 U	200 U
2,4,6-Trichlorophenol	88-06-2	9.3 U	9.4 U	9.1 U	9.3 U	8.6 U	45 U	8.8 U	91 U	180 U	19 U
2,4-Dichlorophenol	120-83-2	58 U	59 U	57 U	58 U	54 U	190 U	55 U	190 U	190 U	120 U
2,4-Dimethylphenol	105-67-9	12 UJ	13 J	100 J	12 UJ	11 UJ	56 UJ	11 U	110 UJ	12 J	23 UJ
2,4-Dinitrophenol	51-28-5	40 U	40 U	39 U	39 U	37 U	190 U	37 U	370 U	380 U	79 U
2,4-Dinitrotoluene	121-14-2	1.2 U	1.2 U	1.1 U	1.2 U	0.31 J	5.6 U	1.1 U	11 U	23 U	2.3 U
2,6-Dinitrotoluene	606-20-2	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	5.6 U	1.1 U	11 U	23 U	2.3 U
2-Chloronaphthalene	91-58-7	14 U	14 U	14 U	14 U	13 U	68 U	13 U	140 U	190 U	28 U
2-Chlorophenol	95-57-8	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
2-Methylnaphthalene	91-57-6	13 J	170	4900 J	260 J	3.9	11	14	210 J	470 J	25
2-Methylphenol	95-48-7	120 UJ	9.6 J	120 J	1.7 J	110 UJ	190 U	0.79 J	190 U	8.9 J	200 U
2-Nitroaniline	88-74-4	360 U	370 U	1900 U	380 U	350 U	370 U	360 U	370 U	380 U	380 U
2-Nitrophenol	88-75-5	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
3,3'-Dichlorobenzidine	91-94-1	3.9 UJ	3.9 UJ	3.8 UJ	200 U	3.6 UJ	19 UJ	3.6 U	38 UJ	76 UJ	7.6 UJ
3-Nitroaniline	99-09-2	360 U	370 U	1900 U	380 U	350 U	370 U	360 U	370 U	380 U	380 U
4,6-Dinitro-2-methylphenol	534-52-1	160 U	170 U	160 U	160 U	150 U	370 U	150 U	370 U	380 U	320 U
4-Bromophenyl-phenylether	101-55-3	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
4-Chloro-3-methylphenol	59-50-7	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
4-Chloroaniline	106-47-8	35 UJ	35 UJ	34 UJ	35 UJ	32 UJ	170 UJ	33 U	190 U	190 U	70 UJ
4-Chlorophenyl-phenylether	7005-72-3	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
4-Methylphenol	106-44-5	190 U	21 J	310 J	14 J	180 U	190 U	190 U	190 U	11 J	200 U
4-Nitroaniline	100-01-6	360 U	370 U	1900 U	380 U	350 U	370 U	360 U	370 U	380 U	380 U
4-Nitrophenol	100-02-7	120 U	6 J	110 U	120 U	110 U	370 U	110 U	370 U	380 U	230 U

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Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	3.6 U	130	1100	130 J	3.5 U	3.7 U	3.6 U	19 U	7.2 J	3.8 U
Acenaphthylene	208-96-8	0.99 J	25 J	180 J	32 J	3.5 U	2.9 J	3.6 U	3.7 J	8.1 J	3.8 U
Acetophenone	98-86-2	41 J	58 J	950 U	23 J	16 J	38 J	43 J	49 J	31 J	24 J
Anthracene	120-12-7	16 J	300	1600	520	0.86 J	3.7 J	0.62 J	3.7 J	10 J	0.83 J
Atrazine	1912-24-9	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Benzaldehyde	100-52-7	34 J	60 J	950 U	69 J	20 J	110 J	43 J	75 J	98 J	27 J
Benzo(a)anthracene	56-55-3	120	1100 J	3400	1600 J	4.4 J	29 J	8.8 J	32 J	46 J	6.9
Benzo(a)pyrene	50-32-8	120	700 J	2600 J	1000 J	2.6 J	30	9.5 J	18 J	15 J	12
Benzo(b)fluoranthene	205-99-2	160	1100 J	3800 J	1500 J	5.7	55	14 J	31 J	34	23
Benzo(g,h,i)perylene	191-24-2	97	400 J	1600 J	560 J	3.5 U	25	4.5	19 U	19 U	41
Benzo(k)fluoranthene	207-08-9	53 J	260	1200	400 J	1.2 J	18 J	6.3 J	7.1 J	8.1 J	5
bis(2-Chloroethoxy)methane	111-91-1	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
bis(2-Chloroethyl)ether	111-44-4	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	5.6 U	1.1 U	11 U	23 U	2.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	220	79 J	47 J	20 J	8.2 J	190 U	190 U	190 U	190 U	200 U
Butylbenzylphthalate	85-68-7	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Caprolactam	105-60-2	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Carbazole	86-74-8	14 J	280 J	770 J	150 J	0.3 J	170 U	2.1 J	11 J	7.1 J	1.6 J
Chlorophenols	58-90-2	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Chrysene	218-01-9	120	770 J	2900 J	1300	6.8 J	33 J	8.4 J	33 J	60 J	15
Dibenz(a,h)anthracene	53-70-3	20	130 J	380 J	150 J	0.72 J	6	1.4 J	7.1 J	6.2 J	6.5
Dibenzofuran	132-64-9	5.8 J	140 J	2000	160 J	180 U	190 U	190 U	55 J	120 J	7 J
Diethylphthalate	84-66-2	190 U	7.4 J	950 U	200 U	5.5 J	190 U	190 U	190 U	190 U	200 U
Dimethylphthalate	131-11-3	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Di-n-butylphthalate	84-74-2	13 J	17 J	150 U	18 J	13 J	11 J	12 J	10 J	14 J	9.7 J
Di-n-octylphthalate	117-84-0	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Fluoranthene	206-44-0	170	1500 J	6300 J	2200 J	6 J	40 J	7.6 J	24 J	42	4.3
Fluorene	86-73-7	5.9 J	170 J	1500	200	0.54 J	0.95 J	0.68 J	7.2 J	24 J	1.1 J
Hexachlorobenzene	118-74-1	120 U	120 U	110 U	120 U	110 U	190 U	110 U	190 U	190 U	200 U
Hexachlorobutadiene	87-68-3	47 U	47 U	46 U	46 U	43 U	190 U	44 U	190 U	190 U	93 U
Hexachlorocyclopentadiene	77-47-4	190 U	190 U	950 U	200 U	180 U	190 U	190 U	190 U	190 U	200 U
Hexachloroethane	67-72-1	23 U	23 U	23 U	23 U	21 U	110 U	22 U	190 U	190 U	46 U
Indeno(1,2,3-cd)pyrene	193-39-5	110	590 J	1900 J	670 J	3.5 U	32	8.7 J	15 J	8.8 J	35
Isophorone	78-59-1	35 U	35 U	34 U	35 U	32 U	170 U	33 U	190 U	190 U	70 U
Naphthalene	91-20-3	12 J	380 J	4000 J	200 J	2.2 J	10 J	21 J	170 J	250	24 J
Nitrobenzene	98-95-3	8.1 U	8.2 U	8 U	8.1 U	7.5 U	39 U	7.7 U	80 U	160 U	16 U
N-Nitroso-di-n-propylamine	621-64-7	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	5.6 U	1.1 U	11 U	23 U	2.3 U
N-Nitrosodiphenylamine	86-30-6	70 U	70 U	69 U	70 U	64 U	190 U	66 U	190 U	190 U	140 U
Pentachlorophenol	87-86-5	7.2 J	3.9 U	3.8 U	3.8 U	3.5 U	370 U	2.8 J	370 UJ	380 U	380 UJ
Phenanthrene	85-01-8	91 J	1400 J	8800 J	2200 J	13 J	23 J	16 J	130 J	270	30
Phenol	108-95-2	9.5 J	18 J	210 J	12 J	180 U	7.5 J	16 J	11 J	14 J	9 J
Pyrene	129-00-0	200	1600 J	6200	2900	7.4 J	41 J	7.8 J	28 J	24 J	8.6 J

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Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	397 U	402 U	407 U	388 U	362 U	375 U	379 U	397 U	379 U	388 U
1-Bromo-3-fluorobenzene	1073-06-9	397 UJ	402 UJ	115 J	388 U	362 U	375 U	379 U	397 U	379 U	388 U
2-Bromopyridine	109-04-6	397 U	402 U	8870	388 U	362 U	375 U	379 U	397 U	379 U	388 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	397 U	402 U	574	3820	362 U	375 U	379 U	397 U	379 U	388 UJ
3-Amino-4-chlorobenzotrifluoride	121-50-6	397 U	402 U	135 J	1350	362 U	375 U	379 U	397 U	379 U	388 U
1-Bromo-4-ethylbenzene	1585-07-5	397 UJ	402 UJ	407 U	388 U	362 U	375 U	379 U	397 U	379 U	388 U
Benzo(e)pyrene	192-97-2	397 U	494	850	834	362 U	375 U	379 U	397 U	379 U	388 U
Perylene	198-55-0	397 UJ	287 J	260 J	260 J	362 U	375 U	379 U	397 U	379 U	388 U
2-Chloro-6-fluorophenol	2040-90-6	397 U	402 U	407 U	388 U	362 U	375 U	379 U	397 U	379 U	388 U
3-Bromoacetophenone	2142-63-4	397 U	402 U	407 U	388 U	362 U	375 U	379 U	397 U	379 U	388 U
11H-Benzo(b)fluorene	30777-19-6	397 UJ	150 J	205 J	279 J	362 U	375 U	379 U	397 U	379 U	388 U
3,4-Dichlorobenzotrifluoride	328-84-7	397 UJ	402 UJ	11300	313 J	362 U	375 U	379 U	397 U	379 U	388 U
4-Bromofluorobenzene	460-00-4	397 U	402 U	9730	388 U	362 U	375 U	379 U	397 U	379 U	388 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8	3.7 R	4 R	3.7 R	3.9 R	3.6 R	3.6 R	4 U	3.7 R	3.7 R	3.8 R
4,4'-DDE	72-55-9	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
4,4'-DDT	50-29-3	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
Aldrin	309-00-2	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
alpha-BHC	319-84-6	0.095 UJ	0.31 JN	0.85 JN	0.64 NJ	0.091 U	0.093 U	0.1 U	0.097 U	0.096 U	0.099 U
alpha-Chlordane	5103-71-9	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
Aroclor 1262	37324-23-5	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor 1268	11100-14-4	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1016	12674-11-2	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1221	11104-28-2	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1232	11141-16-5	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1242	53469-21-9	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1248	12672-29-6	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1254	11097-69-1	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
Aroclor-1260	11096-82-5	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 UJ	1.9 U	1.9 U	2 U
beta-BHC	319-85-7	0.11 UJ	0.12 U	2.3 JN	0.12 U	0.11 U	0.11 U	0.12 U	0.11 U	0.11 U	0.12 U
delta-BHC	319-86-8	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
Dieldrin	60-57-1	0.22 UJ	0.24 U	0.59 J	0.24 U	0.21 U	0.22 U	0.24 U	0.23 U	0.23 U	0.23 U
Endosulfan I	959-98-8	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
Endosulfan II	33213-65-9	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
Endosulfan sulfate	1031-07-8	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
Endrin	72-20-8	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
Endrin aldehyde	7421-93-4	3.7 U	4 U	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
Endrin ketone	53494-70-5	3.7 U	27 J	3.7 U	3.9 U	3.6 U	3.6 U	4 U	3.7 U	3.7 U	3.8 U
gamma-BHC (Lindane)	58-89-9	0.56 UJ	0.61 UJ	0.91 JN	0.59 U	0.54 U	0.55 U	0.61 U	0.6 U	0.57 U	0.58 U
gamma-Chlordane	5103-74-2	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
Heptachlor	76-44-8	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U
Heptachlor epoxide	1024-57-3	1.9 U	2.1 U	1.9 U	2 U	1.8 U	1.9 U	2.1 U	1.9 U	1.9 U	2 U

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Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5	19 U	99 J	19 U	20 U	18 U	19 U	21 U	19 U	19 U	20 U
Toxaphene	8001-35-2	130 UJ	150 U	140 U	140 U	130 U	130 U	140 U	140 U	130 U	140 U
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.896 JN	0.38 R	0.54 UJ	0.544 JN	0.37 UJ	0.16 UJ		0.657 R		0.33 U
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	23.1 J	125 J	4.53 J	3.51 J	0.15 UJ	0.284 JN		17		0.866 JN
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	3 J	7.52 J	1.57 J	0.792 JN	0.15 UJ	0.197 JN		2.6 J		0.406 JN
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	9.37 J	44.2 J	3.03 J	1.66 JN	0.15 UJ	0.216 J		8.4		0.471 JN
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	1.02 J	4.99 J	1.23 J	0.26 UJ	0.2 UJ	0.1 UJ		1.7 J		0.218 JN
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.39 UJ	0.876 J	1.41 J	0.28 UJ	0.15 UJ	0.15 UJ		0.27 J		0.14 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	1.35 UJ	3.46 J	4.02 J	0.19 UJ	0.21 UJ	0.179 JN		2 J		0.14 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	4.82 J	15.3 J	29.8 J	9.12 J	0.51 UJ	1.89 JN		12.8		0.709 JN
Total Pentachlorodibenzo-p-dioxin	36088-22-9	4.28 J	19 J	8.6 J	5.41 J	0.2 U	0.127 J		2.3 J		0.23 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.18 UJ	0.492 J	0.48 UJ	0.431 JN	0.3 UJ	0.16 UJ		0.24 U		0.27 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.39 UJ	1.12 JN	7.4 JN	0.14 UJ	0.16 UJ	0.14 UJ		1.1 J		0.36 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.498 J	2.06 J	0.985 J	0.302 UJ	0.2 UJ	0.127 J		0.512 JN		0.23 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	3.68 J	15.1 J	1.88 J	0.618 JN	0.13 UJ	0.0938 JN		3.6 J		0.27 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.82 JN	1.42 J	2.79 J	0.242 UJ	0.165 UJ	0.124 JN		0.581 JN		0.14 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.453 JN	1.77 J	1.46 JN	0.324 UJ	0.21 UJ	0.23 UJ		1.2 J		0.147 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	4.9 J	24.2 J	20.3 J	2.35 J	0.17 UJ	0.689 JN		11.8		0.496 JN
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	16.1 J	18.4 J	81 J	4.91 J	0.23 UJ	2.57 JN		23		0.493 JN
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	128 J	134 J	825 J	38.5 J	0.963 JN	21.5 J		256		3.88 JN
Total TCDF	55722-27-5	286 J	1100 J	120 J	117 J	0.37 U	2.6 J		540		11
Total Tetra-Dioxins	41903-57-5	0.49 J	10 J	5.9 J	3.97 J	0.3 U	0.16 U		0.33 J		0.27 U
Total Penta-Furans	30402-15-4	396 J	1600 J	120 J	108 J	0.15 U	4.61 J		500		15
Total Hexa-Furans	55684-94-1	170 J	810 J	87 J	45.5 J	0.16 U	2.86 J		180		7
Total Hexa-Dioxins	34465-46-8	11.5 J	32 J	39 J	6.92 J	0.18 U	0.869 J		9.6		0.38 J
Total Hepta-Furans	38998-75-3	13.9 J	68 J	61 J	5.89 J	0.19 U	1.69 J		38		0.94
Total Hepta-Dioxins	37871-00-4	31 J	37 J	160 J	9.69 J	0.23 U	5.03 J		40		0.95 J

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Chemical Name	CAS No.	SS11	SS12	SS17	SS18	SS20	SS21	SB22-A	SS23	SB23-A	SS24
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	9630	6800	6710	5870	5300	5240 J	8130	4950	5180	6300
Antimony	7440-36-0	0.63 U	0.65 U	0.64 U	0.65 U	0.59 U	0.6 U	0.61 U	0.61 U	0.62 U	0.61 U
Arsenic	7440-38-2	2 J	6.5 J	11 J	3.9 J	2.3 J	2.2 R	3.1 J	5 J	5.4 J	2.1 J
Barium	7440-39-3	60.6	117	75.1	52.1	49.7	43.6	35.6	28.1	27.8	38.5
Beryllium	7440-41-7	0.32 J	0.37 J	0.41	0.39	0.2 J	0.19 J	0.36 J	0.2 J	0.19 J	0.29 J
Cadmium	7440-43-9	0.18 J	0.38 J	0.27 J	0.87 U	0.16 J	0.79 U	0.16 J	0.81 U	0.82 U	0.82 U
Calcium	7440-70-2	2500 R	4070	7730	2290	23100	11300	1230	4360	4290	2510
Chromium	7440-47-3	13.8	10.3	8.9	6.7	7.6	7.8	11.5	6.2	6.8	8
Cobalt	7440-48-4	4.3 J	4.6 J	2.8 J	4.8 J	4 J	3.7 J	5.3	2.9 J	3.3 J	3.3 J
Copper	7440-50-8	7.7	68.9	11.2	25.3	9.6	9.8 J	8.2	9.8	16.8	7.4
Cyanide	57-12-5	2.3 U	2.3 U	2.4 U	2.4 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3 U	2.3 U
Iron	7439-89-6	14600	11500	17100	13500	10800	10300 J	13700	9780	11100	9860
Lead	7439-92-1	9.2	122	32.8 J	27.7 J	5.2 J	9.7 J	8.8 J	9.2 J	18.1 J	16.4 J
Magnesium	7439-95-4	3150	1930	4950	2010	5150	3380	2510	2310	2200	1620
Manganese	7439-96-5	615	154	191	127	416	334 J	355 J	354 J	352 J	356 J
Mercury	7439-97-6	0.058 J	0.078 J	0.065 J	0.12 U	0.1 U	0.11 U	0.11 U	0.027 J	0.11 U	0.058 J
Nickel	7440-02-0	18.1	12.2	10.4	12	13.8	11.3	13.3	9.1	11.7	9.1
Potassium	9-7-7440	1010	736	689	374 J	757	583	596	459 J	434 J	426 J
Selenium	7782-49-2	0.19 J	0.47 J	0.67 J	0.31 J	0.16 J	0.17 J	0.31 J	0.23 J	0.2 J	0.13 J
Silver	7440-22-4	1.1 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 UJ	1.1 UJ	1.1 U	1.1 U	1.1 U
Sodium	7440-23-5	564 U	592 U	579 U	590 U	548 U	557 U	553 U	562 U	562 U	569 U
Thallium	7440-28-0	0.09 U	0.1 U	0.36	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Vanadium	7440-62-2	18.6	15.9	15.3	12.2	9.7	10.9	17.4	9.5	10.3	12.6
Zinc	7440-66-6	41.2	131	80.5	49.4	28.2	34.1	33.2	28.6	35.3	37.3

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Volatile Organic Compounds (µg/kg)												
1,1,1-Trichloroethane	71-55-6	5.8 U	5.5 U	6.1 U	6.5 U							
1,1,2,2-Tetrachloroethane	79-34-5	0.21 UJ	0.21 UJ	0.22 UJ	0.24 UJ							
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5.8 U	5.5 U	6.1 U	6.5 U							
1,1,2-Trichloroethane	79-00-5	0.96 UJ	0.94 UJ	1 UJ	1.1 UJ							
1,1-Dichloroethane	75-34-3	5.8 U	5.5 U	6.1 U	6.5 U							
1,1-Dichloroethene	75-35-4	3.2 UJ	3.1 UJ	3.3 UJ	3.6 UJ							
1,2,3-Trichlorobenzene	87-61-6	5.8 U	5.5 U	6.1 U	6.5 U							
1,2,4-Trichlorobenzene	120-82-1	5.8 U	5.5 U	6.1 U	6.5 U							
1,2-Dibromo-3-chloropropane	96-12-8	5.8 U	5.5 U	6.1 U	6.5 U							
1,2-Dibromoethane	106-93-4	5.8 U	5.5 U	6.1 U	6.5 U							
1,2-Dichlorobenzene	95-50-1	5.8 U	5.5 U	6.1 U	6.5 U							
1,2-Dichloroethane	107-06-2	1.1 UJ	1 UJ	1.1 UJ	1.2 UJ							
1,2-Dichloropropane	78-87-5	1.1 UJ	1 UJ	1.1 UJ	1.2 UJ							
1,3-Dichlorobenzene	541-73-1	5.8 U	5.5 U	6.1 U	6.5 U							
1,4-Dichlorobenzene	106-46-7	5.8 U	5.5 U	6.1 U	6.5 U							
1,4-Dioxane	123-91-1	120 R	110 R	120 R	130 R							
2-Butanone	78-93-3	12 U	11 U	12 U	13 U							
2-Hexanone	591-78-6	12 U	11 U	12 U	13 U							
4-Methyl-2-pentanone	108-10-1	12 U	11 U	12 U	13 U							
Acetone	67-64-1	12 U	11 U	12 U	13 U							
Benzene	71-43-2	2.1 UJ	2.1 UJ	2.2 UJ	2.4 UJ							
Bromodichloromethane	75-27-4	5.8 U	5.5 U	6.1 U	6.5 U							
Bromoform	75-25-2	5.8 U	5.5 U	6.1 U	6.5 U							
Bromomethane	74-83-9	5.8 U	5.5 U	6.1 U	6.5 U							
Carbon Disulfide	75-15-0	5.8 U	5.5 U	6.1 U	6.5 U							
Carbon Tetrachloride	56-23-5	3.2 UJ	3.1 UJ	3.3 UJ	3.6 UJ							
Chlorobenzene	108-90-7	5.8 U	5.5 U	6.1 U	6.5 U							
Chlorobromomethane	74-97-5	5.8 U	5.5 U	6.1 U	6.5 U							
Chloroethane	75-00-3	5.8 U	5.5 U	6.1 U	6.5 U							
Chloroform	67-66-3	5.8 U	5.5 U	6.1 U	6.5 U							
Chloromethane	74-87-3	5.8 U	5.5 U	6.1 U	6.5 U							
cis-1,2-Dichloroethene	156-59-2	5.8 U	5.5 U	6.1 U	6.5 U							
cis-1,3-Dichloropropene	10061-01-5	5.8 U	5.5 U	6.1 U	6.5 U							
Cyclohexane	110-82-7	5.8 U	5.5 U	6.1 U	6.5 U							
Dibromochloromethane	124-48-1	5.8 U	5.5 U	6.1 U	6.5 U							
Dichlorodifluoromethane	75-71-8	5.8 U	5.5 U	6.1 U	6.5 U							
Ethylbenzene	100-41-4	5.8 U	5.5 U	6.1 U	6.5 U							
Isopropylbenzene	98-82-8	5.8 U	5.5 U	6.1 U	6.5 U							
m,p-Xylene	179601-23-1	5.8 U	5.5 U	6.1 U	6.5 U							
Methyl Acetate	79-20-9	5.8 U	5.5 U	6.1 U	6.5 U							
Methyl Tert-Butyl Ether	1634-04-4	5.8 U	5.5 U	6.1 U	6.5 U							
Methylene Chloride	75-09-2	1.1 UJ	1 UJ	1.1 UJ	1.2 UJ							

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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Volatile Organic Compounds (µg/kg) (cont'd)												
Metylcyclohexane	108-87-2	5.8 U	5.5 U	6.1 U	6.5 U							
O-Xylene	95-47-6	5.8 U	5.5 U	6.1 U	6.5 U							
Styrene	100-42-5	5.8 U	5.5 U	6.1 U	6.5 U							
Tetrachloroethene	127-18-4	3.2 UJ	3.1 UJ	3.3 UJ	3.6 UJ							
Toluene	108-88-3	5.8 U	5.5 U	6.1 U	6.5 U							
trans-1,2-Dichloroethene	156-60-5	5.8 U	5.5 U	6.1 U	6.5 U							
trans-1,3-Dichloropropene	10061-02-6	5.8 U	5.5 U	6.1 U	6.5 U							
Trichloroethene	79-01-6	3.2 UJ	3.1 UJ	3.3 UJ	3.6 UJ							
Trichlorofluoromethane	75-69-4	5.8 U	5.5 U	1 J	6.5 U							
Vinyl Chloride	75-01-4	0.75 UJ	0.73 UJ	0.78 UJ	0.85 UJ							
Additional Target Volatile Organic Compounds (µg/kg)												
Fluorobenzene	462-06-6	1.51 J	5.81 U	5.75 U	5.95 U							
4-Chlorobenzotrifluoride	98-56-6	5.81 U	5.81 U	5.75 U	5.95 U							
1-Bromo-2-chloroethane	107-04-0	5.81 U	5.81 U	5.75 U	5.95 U							
1,3-Dibromobenzene	108-36-1	5.81 U	5.81 U	5.75 U	5.95 U							
Semi-Volatile Organic Compounds (µg/kg)												
1,1'-Biphenyl	92-52-4	25 J	190 U	6.1 J	230 U							
1,2,4,5-Tetrachlorobenzene	95-94-3	200 U	190 U	190 U	230 U							
2,2'-oxybis(1-Chloropropane)	108-60-1	200 U	190 U	190 U	230 U							
2,4,5-Trichlorophenol	95-95-4	200 U	110 U	190 U	140 U							
2,4,6-Trichlorophenol	88-06-2	190 U	9.1 U	46 U	11 U							
2,4-Dichlorophenol	120-83-2	200 U	57 U	190 U	69 U							
2,4-Dimethylphenol	105-67-9	200 U	11 U	57 U	14 U							
2,4-Dinitrophenol	51-28-5	390 U	39 U	200 U	47 U							
2,4-Dinitrotoluene	121-14-2	23 U	1.1 U	5.7 U	1.4 U							
2,6-Dinitrotoluene	606-20-2	23 U	1.1 U	5.7 U	1.4 U							
2-Chloronaphthalene	91-58-7	200 U	14 U	69 U	17 U							
2-Chlorophenol	95-57-8	200 U	190 U	190 U	230 U							
2-Methylnaphthalene	91-57-6	350 J	2.5 J	120	14							
2-Methylphenol	95-48-7	6.2 J	110 U	190 U	140 U							
2-Nitroaniline	88-74-4	390 U	370 U	380 U	460 U							
2-Nitrophenol	88-75-5	200 U	190 U	190 U	230 U							
3,3'-Dichlorobenzidine	91-94-1	77 U	3.7 U	19 U	4.6 U							
3-Nitroaniline	99-09-2	390 U	370 U	380 U	460 U							
4,6-Dinitro-2-methylphenol	534-52-1	390 U	160 U	380 U	190 U							
4-Bromophenyl-phenylether	101-55-3	200 U	190 U	190 U	230 U							
4-Chloro-3-methylphenol	59-50-7	200 U	190 U	190 U	230 U							
4-Chloroaniline	106-47-8	200 U	34 U	170 U	41 U							
4-Chlorophenyl-phenylether	7005-72-3	200 U	190 U	190 U	230 U							
4-Methylphenol	106-44-5	7.9 J	190 U	190 U	230 U							
4-Nitroaniline	100-01-6	390 U	370 U	380 U	460 U							
4-Nitrophenol	100-02-7	390 U	110 U	380 U	140 U							

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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Semi-Volatile Organic Compounds (µg/kg) (cont'd)												
Acenaphthene	83-32-9	6.3 J	3.7 U	0.74 J	4.6 U							
Acenaphthylene	208-96-8	10 J	3.7 U	1.2 J	4.6 U							
Acetophenone	98-86-2	110 J	37 J	70 J	58 J							
Anthracene	120-12-7	8.8 J	3.7 U	1.8 J	4.6 U							
Atrazine	1912-24-9	200 U	190 U	190 U	230 U							
Benzaldehyde	100-52-7	330	28 J	76 J	44 J							
Benzo(a)anthracene	56-55-3	67 J	3.7 U	19 J	2.1 J							
Benzo(a)pyrene	50-32-8	65 J	3.7 U	15 J	1.5 J							
Benzo(b)fluoranthene	205-99-2	110 J	0.6 J	26 J	3.2 J							
Benzo(g,h,i)perylene	191-24-2	61 J	3.7 U	12 J	4.6 U							
Benzo(k)fluoranthene	207-08-9	25 J	3.7 U	4	4.6 U							
bis(2-Chloroethoxy)methane	111-91-1	200 U	190 U	190 U	230 U							
bis(2-Chloroethyl)ether	111-44-4	23 U	1.1 U	5.7 U	1.4 U							
bis(2-Ethylhexyl)phthalate	117-81-7	200 U	190 U	190 U	230 U							
Butylbenzylphthalate	85-68-7	200 U	190 U	190 U	230 U							
Caprolactam	105-60-2	200 U	190 U	190 U	230 U							
Carbazole	86-74-8	15 J	34 U	5.9 J	41 U							
Chlorophenols	58-90-2	200 U	190 U	190 U	230 U							
Chrysene	218-01-9	84	3.7 U	16	1.9 J							
Dibenz(a,h)anthracene	53-70-3	16 J	3.7 U	3.8 J	0.46 J							
Dibenzofuran	132-64-9	92 J	190 U	26 J	230 U							
Diethylphthalate	84-66-2	200 U	190 U	190 U	230 U							
Dimethylphthalate	131-11-3	200 U	190 U	190 U	230 U							
Di-n-butylphthalate	84-74-2	13 J	12 J	11 J	15 J							
Di-n-octylphthalate	117-84-0	200 U	190 U	190 U	230 U							
Fluoranthene	206-44-0	79 J	3.7 U	13 J	1.5 J							
Fluorene	86-73-7	17 J	3.7 U	1.8 J	4.6 U							
Hexachlorobenzene	118-74-1	200 U	110 U	190 U	140 U							
Hexachlorobutadiene	87-68-3	200 U	45 U	190 U	55 U							
Hexachlorocyclopentadiene	77-47-4	200 U	190 U	190 U	230 U							
Hexachloroethane	67-72-1	200 U	23 U	110 U	28 U							
Indeno(1,2,3-cd)pyrene	193-39-5	61 J	0.65 J	16 J	2.1 J							
Isophorone	78-59-1	200 U	34 U	170 U	41 U							
Naphthalene	91-20-3	220 J	3.9	73 J	17 J							
Nitrobenzene	98-95-3	160 U	8 U	40 U	9.7 U							
N-Nitroso-di-n-propylamine	621-64-7	23 U	1.1 U	5.7 U	1.4 U							
N-Nitrosodiphenylamine	86-30-6	200 U	68 U	190 U	83 U							
Pentachlorophenol	87-86-5	390 U	370 U	380 U	460 U							
Phenanthrene	85-01-8	200 J	1.6 J	55	9.2 J							
Phenol	108-95-2	28 J	16 J	15 J	20 J							
Pyrene	129-00-0	80 J	3.7 U	18 J	2 J							

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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Additional Target Semi-Volatile Organic Compounds (µg/kg)												
1,4-Dibromobenzene	106-37-6	388 U	388 U	381 U	397 U							
1-Bromo-3-fluorobenzene	1073-06-9	388 U	388 U	381 U	397 U							
2-Bromopyridine	109-04-6	388 U	388 U	381 U	397 U							
3-Nitro-4-chlorobenzotrifluoride	121-17-5	388 U	388 U	381 U	397 U							
3-Amino-4-chlorobenzotrifluoride	121-50-6	388 U	388 U	381 U	397 U							
1-Bromo-4-ethylbenzene	1585-07-5	388 U	388 U	381 U	397 U							
Benzo(e)pyrene	192-97-2	388 U	388 U	381 U	397 U							
Perylene	198-55-0	388 U	388 U	381 U	397 U							
2-Chloro-6-fluorophenol	2040-90-6	388 U	388 U	381 U	397 U	397 U	412 U	412 U	407 U	397 U	2060 U	392 U
3-Bromoacetophenone	2142-63-4	388 U	388 U	381 U	397 U							
11H-Benzo(b)fluorene	30777-19-6	388 U	388 U	381 U	397 U							
3,4-Dichlorobenzotrifluoride	328-84-7	388 U	388 U	381 U	397 U							
4-Bromofluorobenzene	460-00-4	388 U	388 U	381 U	397 U							
Pesticides/PCB Aroclors (µg/kg)												
4,4'-DDD	72-54-8	3.7 R	3.8 U	3.8 R	3.9 R							
4,4'-DDE	72-55-9	3.7 U	3.8 U	3.8 U	3.9 U							
4,4'-DDT	50-29-3	3.7 U	3.8 U	3.8 U	3.9 U							
Aldrin	309-00-2	1.9 U	2 U	1.9 U	2 U							
alpha-BHC	319-84-6	0.16 R	0.099 U	0.096 U	0.1 U							
alpha-Chlordane	5103-71-9	1.9 U	2 U	1.9 U	2 U							
Aroclor 1262	37324-23-5	1.9 U	2 U	1.9 U	2 U							
Aroclor 1268	11100-14-4	1.9 U	2 U	1.9 U	2 U							
Aroclor-1016	12674-11-2	1.9 U	2 U	1.9 U	2 U							
Aroclor-1221	11104-28-2	1.9 U	2 U	1.9 U	2 U							
Aroclor-1232	11141-16-5	1.9 U	2 U	1.9 U	2 U							
Aroclor-1242	53469-21-9	1.9 U	2 U	1.9 U	2 U							
Aroclor-1248	12672-29-6	1.9 U	2 U	1.9 U	2 U							
Aroclor-1254	11097-69-1	1.9 U	2 U	1.9 U	2 U							
Aroclor-1260	11096-82-5	1.9 U	2 U	1.9 U	2 U							
beta-BHC	319-85-7	0.11 U	0.12 U	0.11 U	0.12 U							
delta-BHC	319-86-8	1.9 U	2 U	1.9 U	2 U							
Dieldrin	60-57-1	0.2 U	0.24 UJ	0.23 U	0.24 U							
Endosulfan I	959-98-8	1.9 U	2 U	1.9 U	2 U							
Endosulfan II	33213-65-9	3.7 U	3.8 U	3.8 U	3.9 U							
Endosulfan sulfate	1031-07-8	3.7 U	3.8 U	3.8 U	3.9 U							
Endrin	72-20-8	3.7 U	3.8 U	3.8 U	3.9 U							
Endrin aldehyde	7421-93-4	3.7 U	3.8 U	3.8 U	3.9 U							
Endrin ketone	53494-70-5	3.7 U	3.8 U	3.8 U	3.9 U							
gamma-BHC (Lindane)	58-89-9	0.56 U	0.58 U	0.57 U	0.59 U							
gamma-Chlordane	5103-74-2	1.9 U	2 U	1.9 U	2 U							
Heptachlor	76-44-8	1.9 U	2 U	1.9 U	2 U							
Heptachlor epoxide	1024-57-3	1.9 U	2 U	1.9 U	2 U							

Appendix B - 1
Surface Soil Results
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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Pesticides/PCB Aroclors (µg/kg) (cont'd)												
Methoxychlor	72-43-5	19 U	20 U	19 U	20 U							
Toxaphene	8001-35-2	130 U	140 U	140 U	140 U							
Dioxins/Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1.62 R		2.58 R								
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	42		39								
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	4.6 JN		4.4 J								
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	23		20								
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	3.15 JN		2.2 J								
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	1.2 J		0.8 JN								
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	5.9		2 J								
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	79		25.8								
Total Pentachlorodibenzo-p-dioxin	36088-22-9	19		11								
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.43 JN		0.26 U								
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1.5 J		2.21 JN								
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	2.4 J		0.88 J								
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	9.8		8.6								
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	3.71 J		1.5 J								
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	3.1 J		2 J								
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	74		20.2								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	49		27.9								
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	363		279								
Total TCDF	55722-27-5	680		520								
Total Tetra-Dioxins	41903-57-5	6.2		4.3								
Total Penta-Furans	30402-15-4	1200		920								
Total Hexa-Furans	55684-94-1	510		390								
Total Hexa-Dioxins	34465-46-8	54		25								
Total Hepta-Furans	38998-75-3	150		47								
Total Hepta-Dioxins	37871-00-4	92		49								

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Chemical Name	CAS No.	SS25	SB25-A	SS26	SB26-A	SS29	SS30	SS31	SS32	SS33	SS34	SS35
Inorganic Analytes (mg/kg)												
Aluminum	7429-90-5	4100	5470	5720	5220							
Antimony	7440-36-0	0.59 U	0.62 U	0.6 U	0.61 U							
Arsenic	7440-38-2	3 J	2.7 J	8.1 J	1.6 J							
Barium	7440-39-3	418	37.4	50.6	19.7 J							
Beryllium	7440-41-7	0.13 J	0.22 J	0.16 J	0.16 J							
Cadmium	7440-43-9	0.27 J	0.18 J	0.81 U	0.17 J							
Calcium	7440-70-2	81900	4020	14000	2290							
Chromium	7440-47-3	7.8	8.4	8.5	7.1							
Cobalt	7440-48-4	2 J	4 J	2.4 J	3.7 J							
Copper	7440-50-8	20.6	10.1	12.9	7.3							
Cyanide	57-12-5	2.2 U	2.3 U	2.3 U	2.4 U							
Iron	7439-89-6	8860	12300	12000	10600							
Lead	7439-92-1	467 J	16.3 J	21.3 J	3.7 J							
Magnesium	7439-95-4	8230	2290	4930	2370							
Manganese	7439-96-5	407 J	572 J	438 J	455 J							
Mercury	7439-97-6	0.056 J	0.12 U	0.11 U	0.12 U							
Nickel	7440-02-0	10.2	11.7	12.1	12.6							
Potassium	9-7-7440	482 J	583	528 J	596							
Selenium	7782-49-2	0.14 J	0.22 J	0.15 J	0.07 J							
Silver	7440-22-4	1.1 U	1.1 UJ	1.1 U	1.2 U							
Sodium	7440-23-5	551 U	568 U	571 U	579 U							
Thallium	7440-28-0	0.09 U	0.09 U	0.09 U	0.09 U							
Vanadium	7440-62-2	10	14.7	13.5	11.9							
Zinc	7440-66-6	331	42.1	41.8	95.5							

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
Diaz Chemical Corporation Site
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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Volatile Organic Compounds (µg/kg)												
1,1,1-Trichloroethane	71-55-6											
1,1,2,2-Tetrachloroethane	79-34-5											
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1											
1,1,2-Trichloroethane	79-00-5											
1,1-Dichloroethane	75-34-3											
1,1-Dichloroethene	75-35-4											
1,2,3-Trichlorobenzene	87-61-6											
1,2,4-Trichlorobenzene	120-82-1											
1,2-Dibromo-3-chloropropane	96-12-8											
1,2-Dibromoethane	106-93-4											
1,2-Dichlorobenzene	95-50-1											
1,2-Dichloroethane	107-06-2											
1,2-Dichloropropane	78-87-5											
1,3-Dichlorobenzene	541-73-1											
1,4-Dichlorobenzene	106-46-7											
1,4-Dioxane	123-91-1											
2-Butanone	78-93-3											
2-Hexanone	591-78-6											
4-Methyl-2-pentanone	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2											
Bromodichloromethane	75-27-4											
Bromoform	75-25-2											
Bromomethane	74-83-9											
Carbon Disulfide	75-15-0											
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7											
Chlorobromomethane	74-97-5											
Chloroethane	75-00-3											
Chloroform	67-66-3											
Chloromethane	74-87-3											
cis-1,2-Dichloroethene	156-59-2											
cis-1,3-Dichloropropene	10061-01-5											
Cyclohexane	110-82-7											
Dibromochloromethane	124-48-1											
Dichlorodifluoromethane	75-71-8											
Ethylbenzene	100-41-4											
Isopropylbenzene	98-82-8											
m,p-Xylene	179601-23-1											
Methyl Acetate	79-20-9											
Methyl Tert-Butyl Ether	1634-04-4											
Methylene Chloride	75-09-2											

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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Volatile Organic Compounds (µg/kg) (cont'd)												
Metylcyclohexane	108-87-2											
O-Xylene	95-47-6											
Styrene	100-42-5											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
trans-1,2-Dichloroethene	156-60-5											
trans-1,3-Dichloropropene	10061-02-6											
Trichloroethene	79-01-6											
Trichlorofluoromethane	75-69-4											
Vinyl Chloride	75-01-4											
Additional Target Volatile Organic Compounds (µg/kg)												
Fluorobenzene	462-06-6						1.47 J	5.95 U	6.02 U	6.02 U	6.02 U	6.25 U
4-Chlorobenzotrifluoride	98-56-6						5.81 U	5.95 U	6.02 U	6.02 U	6.02 U	6.25 U
1-Bromo-2-chloroethane	107-04-0						5.81 U	5.95 U	6.02 U	6.02 U	6.02 U	6.25 U
1,3-Dibromobenzene	108-36-1						5.81 U	5.95 U	6.02 U	6.02 U	6.02 U	6.25 U
Semi-Volatile Organic Compounds (µg/kg)												
1,1'-Biphenyl	92-52-4						180 U	90 J	350 U	390 U	180 U	180 U
1,2,4,5-Tetrachlorobenzene	95-94-3						180 U	190 U	350 U	390 U	180 U	180 U
2,2'-oxybis(1-Chloropropane)	108-60-1						180 U	190 U	350 U	390 U	180 U	180 U
2,4,5-Trichlorophenol	95-95-4						180 U	190 U	350 U	230 U	180 U	180 U
2,4,6-Trichlorophenol	88-06-2						180 U	190 U	190 U	18 U	91 U	94 U
2,4-Dichlorophenol	120-83-2						180 U	190 U	350 U	110 U	180 U	180 U
2,4-Dimethylphenol	105-67-9						180 U	190 U	230 U	23 U	110 U	120 U
2,4-Dinitrophenol	51-28-5						360 U	380 U	690 U	78 U	350 U	350 U
2,4-Dinitrotoluene	121-14-2						180 U	190 U	23 U	2.3 U	11 U	12 U
2,6-Dinitrotoluene	606-20-2						180 U	190 U	23 U	2.3 U	11 U	12 U
2-Chloronaphthalene	91-58-7						180 U	190 U	280 U	27 U	140 U	24 J
2-Chlorophenol	95-57-8						180 U	190 U	350 U	390 U	180 U	180 U
2-Methylnaphthalene	91-57-6						27	350 J	19	19 U	9.1 J	10 J
2-Methylphenol	95-48-7						180 U	190 U	350 U	230 U	180 U	180 U
2-Nitroaniline	88-74-4						360 U	380 U	690 U	760 U	350 U	350 U
2-Nitrophenol	88-75-5						180 U	190 U	350 U	390 U	180 U	180 U
3,3'-Dichlorobenzidine	91-94-1						180 U	190 U	77 U	7.6 U	38 U	39 U
3-Nitroaniline	99-09-2						360 U	380 U	690 U	760 U	350 U	350 U
4,6-Dinitro-2-methylphenol	534-52-1						360 U	380 U	690 U	320 U	350 U	350 U
4-Bromophenyl-phenylether	101-55-3						180 U	190 U	350 U	390 U	180 U	180 U
4-Chloro-3-methylphenol	59-50-7						180 U	190 U	350 U	390 U	180 U	180 U
4-Chloroaniline	106-47-8						180 U	270	350 U	69 U	180 U	180 U
4-Chlorophenyl-phenylether	7005-72-3						180 U	190 U	350 U	390 U	180 U	180 U
4-Methylphenol	106-44-5						180 U	26 J	350 U	390 U	180 U	180 U
4-Nitroaniline	100-01-6						360 U	380 U	690 U	760 U	350 U	350 U
4-Nitrophenol	100-02-7						360 U	380 U	690 U	230 U	350 U	350 U

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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Semi-Volatile Organic Compounds (µg/kg) (cont'd)												
Acenaphthene	83-32-9						16 J	810	15 U	19 U	17 U	18 U
Acenaphthylene	208-96-8						76 J	24 J	21 J	19 U	7.8 J	18 U
Acetophenone	98-86-2						49 J	54 J	40 J	29 J	24 J	26 J
Anthracene	120-12-7						120	1700	19	19 U	5.7 J	5.7 J
Atrazine	1912-24-9						180 U	190 U	350 U	390 U	180 U	180 U
Benzaldehyde	100-52-7						390	280	580	310 J	410	270
Benzo(a)anthracene	56-55-3						1100 J	3100 J	150	40 J	58 J	47
Benzo(a)pyrene	50-32-8						990 J	2400 J	190 J	35 J	65	57
Benzo(b)fluoranthene	205-99-2						1600 J	3400 J	310 J	50 J	110	99
Benzo(g,h,i)perylene	191-24-2						680	1700 J	140	21	46	45
Benzo(k)fluoranthene	207-08-9						330 J	980 J	90	20 J	28 J	25
bis(2-Chloroethoxy)methane	111-91-1						180 U	190 U	350 U	390 U	180 U	180 U
bis(2-Chloroethyl)ether	111-44-4						180 U	190 U	23 U	2.3 U	11 U	12 U
bis(2-Ethylhexyl)phthalate	117-81-7						180 U	190 U	350 U	390 U	180 U	180 U
Butylbenzylphthalate	85-68-7						180 U	190 U	350 U	390 U	180 U	180 U
Caprolactam	105-60-2						180 U	190 U	350 U	390 U	180 U	180 U
Carbazole	86-74-8						120 J	930	19 J	2.8 J	7.6 J	7 J
Chlorophenols	58-90-2						180 U	190 U	350 U	390 U	180 U	180 U
Chrysene	218-01-9						780 J	2300	180 J	34	49	51 J
Dibenz(a,h)anthracene	53-70-3						130	380 J	32	5.5 J	9.7 J	8.5 J
Dibenzofuran	132-64-9						20 J	790	350 U	390 U	180 U	180 U
Diethylphthalate	84-66-2						180 U	190 U	350 U	390 U	180 U	180 U
Dimethylphthalate	131-11-3						21 J	190 U	350 U	390 U	180 U	180 U
Di-n-butylphthalate	84-74-2						180 U	190 U	350 U	340 U	180 U	180 U
Di-n-octylphthalate	117-84-0						180 U	190 U	350 U	390 U	180 U	180 U
Fluoranthene	206-44-0						2000	6500	370	74 J	110 J	110 J
Fluorene	86-73-7						45 J	630	11 J	19 U	5.3 J	18 U
Hexachlorobenzene	118-74-1						180 U	190 U	350 U	230 U	180 U	180 U
Hexachlorobutadiene	87-68-3						180 U	190 U	350 U	92 U	180 U	180 U
Hexachlorocyclopentadiene	77-47-4						180 U	190 U	350 U	390 U	180 U	180 U
Hexachloroethane	67-72-1						180 U	190 U	350 U	46 U	180 U	180 U
Indeno(1,2,3-cd)pyrene	193-39-5						900 J	2400 J	200 J	29	64	60
Isophorone	78-59-1						180 U	190 U	350 U	69 U	180 U	180 U
Naphthalene	91-20-3						30 J	730	21 J	6.9 J	10 J	31 J
Nitrobenzene	98-95-3						180 U	190 U	160 U	16 U	80 U	82 U
N-Nitroso-di-n-propylamine	621-64-7						180 U	190 U	23 UJ	2.3 UJ	11 UJ	12 UJ
N-Nitrosodiphenylamine	86-30-6						180 U	190 U	350 U	140 U	180 U	180 U
Pentachlorophenol	87-86-5						360 U	380 U	77 U	7.6 U	38 U	39 U
Phenanthrene	85-01-8						760	7100	160 J	32	70 J	50 J
Phenol	108-95-2						180 U	37 J	350 U	390 U	180 U	180 U
Pyrene	129-00-0						1200 J	4600	270 J	56 J	81 J	72

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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Additional Target Semi-Volatile Organic Compounds (µg/kg)												
1,4-Dibromobenzene	106-37-6						388 U	397 U	402 U	402 U	402 U	417 U
1-Bromo-3-fluorobenzene	1073-06-9						388 U	397 U	402 U	402 U	402 U	417 U
2-Bromopyridine	109-04-6						388 U	397 U	402 U	402 U	402 U	417 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5						388 U	397 U	402 U	402 U	402 U	417 U
3-Amino-4-chlorobenzotrifluoride	121-50-6						388 U	397 U	402 U	402 U	402 U	417 U
1-Bromo-4-ethylbenzene	1585-07-5						388 U	397 U	402 U	402 U	402 U	417 U
Benzo(e)pyrene	192-97-2						1630	397 U	231 J	402 U	402 U	417 U
Perylene	198-55-0						512	397 U	402 U	402 U	402 U	417 U
2-Chloro-6-fluorophenol	2040-90-6	427 U	397 U	397 U	397 U	383 U	388 U	397 U	402 U	402 U	402 U	417 U
3-Bromoacetophenone	2142-63-4						388 U	397 U	402 U	402 U	402 U	417 U
11H-Benzo(b)fluorene	30777-19-6						627	397 U	402 U	402 U	402 U	417 U
3,4-Dichlorobenzotrifluoride	328-84-7						388 U	397 U	402 U	402 U	402 U	417 U
4-Bromofluorobenzene	460-00-4						388 U	397 U	402 U	402 U	402 U	417 U
Pesticides/PCB Aroclors (µg/kg)												
4,4'-DDD	72-54-8											
4,4'-DDE	72-55-9											
4,4'-DDT	50-29-3											
Aldrin	309-00-2											
alpha-BHC	319-84-6											
alpha-Chlordane	5103-71-9											
Aroclor 1262	37324-23-5											
Aroclor 1268	11100-14-4											
Aroclor-1016	12674-11-2											
Aroclor-1221	11104-28-2											
Aroclor-1232	11141-16-5											
Aroclor-1242	53469-21-9											
Aroclor-1248	12672-29-6											
Aroclor-1254	11097-69-1											
Aroclor-1260	11096-82-5											
beta-BHC	319-85-7											
delta-BHC	319-86-8											
Dieldrin	60-57-1											
Endosulfan I	959-98-8											
Endosulfan II	33213-65-9											
Endosulfan sulfate	1031-07-8											
Endrin	72-20-8											
Endrin aldehyde	7421-93-4											
Endrin ketone	53494-70-5											
gamma-BHC (Lindane)	58-89-9											
gamma-Chlordane	5103-74-2											
Heptachlor	76-44-8											
Heptachlor epoxide	1024-57-3											

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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Pesticides/PCB Aroclors (µg/kg) (cont'd)												
Methoxychlor	72-43-5											
Toxaphene	8001-35-2											
Dioxins/Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9						1.17 R	0.55 U	0.86 J	0.206 JN	0.25 J	0.47 J
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4						3.4 J	3.1 J	4.5 J	0.98 JN	1.11 JN	0.831 JN
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9						1.3 J	1.4 J	1.3 J	0.34 J	0.36 J	0.46 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5						2.9 J	2.17 JN	3.2 J	0.689 JN	0.844 JN	0.622 JN
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9						0.7 J	0.301 JN	0.59 J	0.16 J	0.16 J	0.16 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6						1.2 J	0.492 JN	0.838 JN	0.138 JN	0.211 JN	0.1 JN
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7						2.5 J	0.83 JN	2 J	0.289 JN	0.505 JN	0.239 JN
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0						45.7	10.8	28.4	4.42 JN	8.1 J	3.11 JN
Total Pentachlorodibenzo-p-dioxin	36088-22-9						7.3	2.7 J	5.7	1.4 J	1.9 J	1.6 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6						0.22 J	0.42 U	0.193 JN	0.13 U	0.14 U	0.12 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6						5.58 J	0.58 J	0.628 JN	0.198 JN	0.25 JN	0.306 JN
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4						1.1 J	0.43 J	0.67 J	0.16 J	0.213 JN	0.136 JN
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9						1.8 J	1.34 JN	1.7 J	0.35 J	0.44 J	0.44 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3						0.999 J	0.65 JN	1.45 J	0.261 J	0.467 J	0.196 JN
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7						1.3 J	0.459 JN	0.75 J	0.179 JN	0.248 JN	0.133 JN
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4						20	5.8	12.6	2.1 J	3.6 J	2 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9						57 J	13	32	4.7	9.5	3 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9						513	114	237	33.6	75.1	19.9
Total TCDF	55722-27-5						160	46	80	18	16	13
Total Tetra-Dioxins	41903-57-5						2.9	1.4	3.4	0.93	1	1.2
Total Penta-Furans	30402-15-4						130	57	83	19	18	11
Total Hexa-Furans	55684-94-1						110	31	52	9.4	11	5.7
Total Hexa-Dioxins	34465-46-8						24	7.2	16	2.7 J	4.6	2.6 J
Total Hepta-Furans	38998-75-3						51	12	30	4.9	8.2	3.7 J
Total Hepta-Dioxins	37871-00-4						100	25	60	8.5	18	5.4

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Surface Soil Results
Diaz Chemical Corporation Site
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Chemical Name	CAS No.	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46
Inorganic Analytes (mg/kg)												
Aluminum	7429-90-5						5120	5200	4840	4760	5380	5320
Antimony	7440-36-0						0.63 U	0.64 U	0.64 U	0.63 U	0.64 U	0.61 U
Arsenic	7440-38-2						3.6 J	2.9 J	2.3 J	1.8 J	1.7 J	1.6 J
Barium	7440-39-3						106	119	53.8	52.9	54.9	48.9
Beryllium	7440-41-7						0.17 J	0.18 J	0.14 J	0.13 J	0.15 J	0.14 J
Cadmium	7440-43-9						0.35 J	0.28 J	0.2 J	0.83 U	0.19 J	0.26 J
Calcium	7440-70-2						8670	10800 J	11100	10000	4620	6440
Chromium	7440-47-3						9.3	8.2	8.1	7.7	8.2	8.4
Cobalt	7440-48-4						2.4 J	2.3 J	2.2 J	2 J	2.2 J	2.3 J
Copper	7440-50-8						15.5	20.7	11.7	8	15	15.5
Cyanide	57-12-5						2.3 U	2.3 U	2.4 U	2.4 U	2.4 U	2.4 U
Iron	7439-89-6						9340	10200	9460	8870	9530	9770
Lead	7439-92-1						671	729 J	121	152	128	64.7
Magnesium	7439-95-4						3550	3310	3910	3230	2280	2810
Manganese	7439-96-5						484	640 J	439	383	389	423
Mercury	7439-97-6						0.38	0.39	0.099 J	0.12	0.12 J	0.29
Nickel	7440-02-0						9.7	10.5	11.2	9.9	10.1	12.3
Potassium	9-7-7440						500 J	505 J	567 J	459 J	445 J	551 J
Selenium	7782-49-2						0.21 J	0.14 J	0.22 J	0.09 J	0.15 J	0.22 J
Silver	7440-22-4						1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sodium	7440-23-5						586 U	587 U	598 U	585 U	600 U	592 U
Thallium	7440-28-0						0.09 U	0.09 U	0.09 U	0.09 U	0.1 U	0.09 U
Vanadium	7440-62-2						12.3	12.6	11.4	10.5	11.6	11.5
Zinc	7440-66-6						140	146	69.9	52.9	73.4	93.6

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
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Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.25 U	6.17 U	6.17 U	2.27 J	5.88 U	5.88 U	6.02 U	6.17 U	6.33 U	6.67 U
4-Chlorobenzotrifluoride	98-56-6	6.25 U	6.17 U	6.17 U	5.88 U	5.88 U	5.88 U	6.02 U	6.17 U	6.33 U	6.67 U
1-Bromo-2-chloroethane	107-04-0	6.25 U	6.17 U	6.17 U	5.88 U	5.88 U	5.88 U	6.02 U	6.17 U	6.33 U	6.67 U
1,3-Dibromobenzene	108-36-1	6.25 U	6.17 U	6.17 U	5.88 U	5.88 U	5.88 U	6.02 U	6.17 U	6.33 U	6.67 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	180 U	350 U	32 J	370 U	160 U	170 U	180 U	180 U	190 U	190 U
1,2,4,5-Tetrachlorobenzene	95-94-3	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2,2'-oxybis(1-Chloropropane)	108-60-1	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2,4,5-Trichlorophenol	95-95-4	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2,4,6-Trichlorophenol	88-06-2	180 U	100 U	180 U	270 U	160 U	170 U	180 U	180 U	98 U	190 U
2,4-Dichlorophenol	120-83-2	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2,4-Dimethylphenol	105-67-9	180 U	130 U	180 U	340 U	160 U	170 U	180 U	180 U	120 U	190 U
2,4-Dinitrophenol	51-28-5	360 U	430 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U
2,4-Dinitrotoluene	121-14-2	24 U	13 U	180 U	34 U	58 U	21 U	22 U	48 U	12 U	30 U
2,6-Dinitrotoluene	606-20-2	24 U	13 U	180 U	34 U	58 U	21 U	22 U	48 U	12 U	30 U
2-Chloronaphthalene	91-58-7	180 U	150 U	180 U	370 U	160 U	170 U	180 U	180 U	150 U	190 U
2-Chlorophenol	95-57-8	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2-Methylnaphthalene	91-57-6	19 J	17 U	100	18 U	27 J	15 J	19 J	54	29	16 J
2-Methylphenol	95-48-7	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
2-Nitroaniline	88-74-4	360 U	680 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U
2-Nitrophenol	88-75-5	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
3,3'-Dichlorobenzidine	91-94-1	80 U	42 U	180 U	110 U	160 U	70 U	73 U	160 U	41 U	98 U
3-Nitroaniline	99-09-2	360 U	680 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U
4,6-Dinitro-2-methylphenol	534-52-1	360 U	680 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U
4-Bromophenyl-phenylether	101-55-3	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
4-Chloro-3-methylphenol	59-50-7	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
4-Chloroaniline	106-47-8	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
4-Chlorophenyl-phenylether	7005-72-3	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
4-Methylphenol	106-44-5	180 U	350 U	18 J	370 U	160 U	170 U	180 U	180 U	190 U	190 U
4-Nitroaniline	100-01-6	360 U	680 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U
4-Nitrophenol	100-02-7	360 U	680 U	360 U	720 U	310 U	330 U	350 U	360 U	380 U	380 U

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Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	18 U	17 U	250	18 U	6.3 J	16 U	17 U	8.4 J	19 U	19 U
Acenaphthylene	208-96-8	12 J	17 U	710	16 J	19 J	9 J	17 U	12 J	19 U	7.5 J
Acetophenone	98-86-2	31 J	27 J	54 J	25 J	25 J	21 J	23 J	30 J	27 J	24 J
Anthracene	120-12-7	8.6 J	15 J	1900	46 J	27 J	21 J	6.9 J	31 J	7.4 J	11 J
Atrazine	1912-24-9	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Benzaldehyde	100-52-7	300	140 J	350	650	210	180	500	230	110 J	300
Benzo(a)anthracene	56-55-3	98 J	98	12000 J	500 J	310 J	120 J	55 J	170 J	59 J	72 J
Benzo(a)pyrene	50-32-8	93 J	89 J	12000 J	460 J	310 J	120 J	70 J	140 J	59 J	84 J
Benzo(b)fluoranthene	205-99-2	130 J	160 J	18000 J	680 J	500 J	170 J	110 J	250	95 J	130 J
Benzo(g,h,i)perylene	191-24-2	49	58	5700 J	130	190	42 J	21 J	71	22	23 J
Benzo(k)fluoranthene	207-08-9	41 J	34	3100	130 J	99 J	57 J	29 J	72 J	36 J	33 J
bis(2-Chloroethoxy)methane	111-91-1	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
bis(2-Chloroethyl)ether	111-44-4	24 U	13 U	180 U	34 U	58 U	21 U	22 U	48 U	12 U	30 U
bis(2-Ethylhexyl)phthalate	117-81-7	180 U	350 U	180 U	370 U	180	170 U	180 U	180 U	190 U	190 U
Butylbenzylphthalate	85-68-7	180 U	350 U	180 U	370 U	14 J	170 U	180 U	8.7 J	190 U	190 U
Caprolactam	105-60-2	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Carbazole	86-74-8	11 J	10 J	1300 J	35 J	22 J	11 J	180 U	23 J	8 J	9.1 J
Chlorophenols	58-90-2	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Chrysene	218-01-9	89 J	89	7700	360 J	180 J	120 J	73 J	160 J	56 J	65 J
Dibenz(a,h)anthracene	53-70-3	9.8 J	11 J	1500 J	53 J	36 J	14 J	5.9 J	16 J	9.5 J	12 J
Dibenzofuran	132-64-9	180 U	350 U	270	370 U	9.3 J	9 J	180 U	19 J	190 U	190 U
Diethylphthalate	84-66-2	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Dimethylphthalate	131-11-3	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Di-n-butylphthalate	84-74-2	180 U	350 U	19 J	370 U	7.7 J	170 U	180 U	180 U	190 U	190 U
Di-n-octylphthalate	117-84-0	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Fluoranthene	206-44-0	190	200 J	17000	740	420 J	250	120 J	350	110 J	130 J
Fluorene	86-73-7	6.5 J	17 U	810	23 J	9.1 J	7.3 J	17 U	12 J	19 U	19 U
Hexachlorobenzene	118-74-1	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Hexachlorobutadiene	87-68-3	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Hexachlorocyclopentadiene	77-47-4	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Hexachloroethane	67-72-1	180 U	250 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Indeno(1,2,3-cd)pyrene	193-39-5	64	77 J	9600 J	360 J	270 J	76 J	33 J	99	49 J	61 J
Isophorone	78-59-1	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Naphthalene	91-20-3	20 J	17 U	230 J	22 J	24 J	18 J	16 J	40 J	48 J	26 J
Nitrobenzene	98-95-3	170 U	88 U	180 U	240 U	160 U	150 U	160 U	180 U	86 U	190 U
N-Nitroso-di-n-propylamine	621-64-7	24 UJ	13 UJ	180 U	34 UJ	58 UJ	21 UJ	22 UJ	48 UJ	12 UJ	30 UJ
N-Nitrosodiphenylamine	86-30-6	180 U	350 U	180 U	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Pentachlorophenol	87-86-5	80 U	42 U	360 U	110 UJ	190 UJ	70 UJ	73 UJ	160 UJ	41 UJ	98 UJ
Phenanthrene	85-01-8	78	90 J	9800	290 J	150 J	110 J	52 J	190	82 J	68 J
Phenol	108-95-2	180 U	350 U	27 J	370 U	160 U	170 U	180 U	180 U	190 U	190 U
Pyrene	129-00-0	120	150	15000	470	230 J	170 J	79 J	200	79 J	78 J

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Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
1-Bromo-3-fluorobenzene	1073-06-9	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
2-Bromopyridine	109-04-6	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
1-Bromo-4-ethylbenzene	1585-07-5	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
Benzo(e)pyrene	192-97-2	417 U	354 J	8560	208 J	233 J	140 J	402 U	412 U	422 U	735
Perylene	198-55-0	417 U	108 J	2470	392 U	392 U	392 U	402 U	412 U	422 U	284 J
2-Chloro-6-fluorophenol	2040-90-6	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
3-Bromoacetophenone	2142-63-4	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
11H-Benzo(b)fluorene	30777-19-6	417 U	412 U	2840	392 U	392 U	392 U	402 U	412 U	422 U	224 J
3,4-Dichlorobenzotrifluoride	328-84-7	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
4-Bromofluorobenzene	460-00-4	417 U	412 U	412 U	392 U	392 U	392 U	402 U	412 U	422 U	444 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.55 J	0.396 JN	4.1 U	1.6	0.92 R	0.93 R	0.65 J	1.41 R	0.75 J	2.1 R
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	1.96 J	0.976 JN	5.45 JN	2.8 J	5.6	4.5 J	1.6 J	15	1.5 J	4.8 J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.73 J	0.6 J	3.8 J	1.7 J	2.6 J	1.3 J	0.75 J	1.7 J	0.76 J	2.5 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	1.5 J	0.544 JN	4.99 JN	2.3 J	3.9 J	2.8 J	1.2 J	6.6	1.2 J	3.4 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.21 J	0.197 JN	2.47 JN	0.618 JN	0.6 J	0.484 J	0.278 JN	1.1 J	0.28 J	0.88 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.312 JN	0.446 JN	2.36 JN	0.362 JN	1.6 J	1.2 J	0.329 JN	0.49 J	0.28 J	0.575 JN
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.81 JN	1.5 J	7.31 JN	0.509 JN	5	3 J	1 J	1.02 JN	0.528 JN	1 JN
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	14	32.6	53 JN	7.8 J	67	45	17	16.5	9.5 J	12
Total Pentachlorodibenzo-p-dioxin	36088-22-9	3.3 J	2.2 J	6.1	5.2	8.4	6.4	1.5 J	6.3	3	8.9
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.16 U	0.134 JN	4.8 U	0.14 U	0.21 UJ	0.19 J	0.14 UJ	0.13 U	0.15 UJ	0.39 J
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.46 JN	0.265 JN	7.09 JN	1.1 J	0.5 J	0.33 J	0.23 J	0.542 JN	0.4 J	1.4 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.34 J	0.29 J	3.73 JN	0.68 J	1.2 J	0.89 J	0.37 J	0.6 J	0.332 JN	1 JN
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.9 J	0.48 J	4.81 JN	1.8 J	1.8 J	1.6 J	0.61 J	2.9 J	0.76 J	3 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.558 J	0.793 J	7.05 JN	0.576 J	4.29 J	2.68 J	1 J	0.788 J	0.371 J	0.918 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.42 J	0.54 J	4.1 J	0.554 JN	1.4 J	1 J	0.19 UJ	0.581 JN	0.283 JN	0.92 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.2	8.3	28.1 JN	7	27	15	6.2	8.5	4.1 J	10
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	16	40	84 JN	5.4	110	67	18	13	7.7	13
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	120	425	607 D	35	973	569	143	98.9	54	104
Total TCDF	55722-27-5	34	11	24	83	110	80	23	170	29	68
Total Tetra-Dioxins	41903-57-5	1.7	1.3	4.8 U	4.5	3.1	3.4	1.5	3.1	2	8.5
Total Penta-Furans	30402-15-4	37	15	76	59	120	89	28	190	27	67
Total Hexa-Furans	55684-94-1	20	18	66	24	95	59	20	96	16	41
Total Hexa-Dioxins	34465-46-8	7.3	9.7	54	6.4	37	24	7.4	12	4.8	12
Total Hepta-Furans	38998-75-3	17	26	62	11	73	43	15	20	9.3	21
Total Hepta-Dioxins	37871-00-4	29	67	160	9.8	210	120	33	25	14	26

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS47	SS48	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	5530	5310	4900	3970	5310	5820	5870	3820	5310	4120
Antimony	7440-36-0	0.64 U	0.68 U	0.67 U	0.65 U	0.64 U	0.63 U	0.65 U	0.64 U	0.67 U	0.72 U
Arsenic	7440-38-2	3.2 J	5.7 J	3.3 J	1.6 J	2.3 J	2.7 J	1.9 J	3 J	4.8 J	8.3 J
Barium	7440-39-3	219	161	117	43.7	76.1	142	53.1	95.7	276	153
Beryllium	7440-41-7	0.14 J	0.19 J	0.16 J	0.1 J	0.13 J	0.18 J	0.18 J	0.14 J	0.32 J	0.17 J
Cadmium	7440-43-9	1.1	0.74 J	1	0.25 J	0.4 J	0.39 J	0.87 U	0.27 J	0.42 J	0.53 J
Calcium	7440-70-2	9520	9830	14100	7050	8490	4010	2550	25700	5110	8400
Chromium	7440-47-3	10.9	13.1	10.3	5.3	8.8	12.1	9.2	6.4	9.2	10.2
Cobalt	7440-48-4	1.8 J	2.3 J	2.2 J	1.4 J	1.9 J	2.4 J	3.4 J	1.9 J	2.5 J	1.9 J
Copper	7440-50-8	35.3	65.5	40.8	16.9	14.1	12.8	10	21.8	22.8	38.8
Cyanide	57-12-5	2.4 U	2.5 U	2.5 U	2.4 U	2.4 U	2.3 U	2.3 U	2.4 U	2.5 U	2.7 U
Iron	7439-89-6	13400	10900	10500	5250	9380	10800	11100	7600	9110	7530
Lead	7439-92-1	962	468	584	70.4	168	898	120	127	1330	492
Magnesium	7439-95-4	3920	2470	7170	2070	3550	2350	2480	6120	2050	1940
Manganese	7439-96-5	455	512	455	302	413	449	437	447	399	266
Mercury	7439-97-6	0.61	0.97	0.72	0.072 J	0.3	0.33	0.14	0.27	0.32	1.8
Nickel	7440-02-0	8.8	11.2	9.8	5.8	9.8	10.3	13.4	8.1	8.8	8.6
Potassium	9-7-7440	381 J	519 J	400 J	873	457 J	706	596	550 J	434 J	399 J
Selenium	7782-49-2	0.16 J	0.33 J	0.26 J	0.14 J	0.15 J	0.24 J	0.18 J	0.21 J	0.27 J	0.61 J
Silver	7440-22-4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.4 U
Sodium	7440-23-5	607 U	611 U	602 U	593 U	589 U	577 U	587 U	594 U	616 U	301 J
Thallium	7440-28-0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.09 U	0.1 U	0.09 U	0.1 U	0.11 U
Vanadium	7440-62-2	13.2	14.8	12.8	6.5	12.2	13	13.2	11.2	16.6	17.7
Zinc	7440-66-6	542	414	483	94	66.1	187	78.2	112	258	195

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
Diaz Chemical Corporation Site
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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	3.28 J	7.69 U	6.25 U	6.02 U	1.43 J	1.71 J	6.02 U	5.81 U	5.88 U	5.95 U
4-Chlorobenzotrifluoride	98-56-6	5.72 J	7.69 U	6.25 U	6.02 U	3.6 J	226	12.1	5.81 U	5.88 U	5.95 U
1-Bromo-2-chloroethane	107-04-0	7.46 U	7.69 U	6.25 U	6.02 U	5.62 U	6.02 U	6.02 U	5.81 U	5.88 U	5.95 U
1,3-Dibromobenzene	108-36-1	7.46 U	7.69 U	6.25 U	6.02 U	5.62 U		6.02 U	5.81 U	5.88 U	5.95 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	11 J	83 J	180 U	180 U	190 U	190 U	10 J	190 U	6.6 J	210 U
1,2,4,5-Tetrachlorobenzene	95-94-3	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
2,2'-oxybis(1-Chloropropane)	108-60-1	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
2,4,5-Trichlorophenol	95-95-4	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
2,4,6-Trichlorophenol	88-06-2	230 U	180 U	180 U	180 U	45 U	18 U	94 U	94 U	92 U	210 U
2,4-Dichlorophenol	120-83-2	230 U	180 U	180 U	180 U	190 U	110 U	200 U	190 U	200 U	210 U
2,4-Dimethylphenol	105-67-9	230 U	180 U	180 U	180 U	56 U	22 U	120 U	120 U	120 U	210 U
2,4-Dinitrophenol	51-28-5	450 U	350 U	350 U	340 U	190 U	74 U	390 U	380 U	380 U	410 U
2,4-Dinitrotoluene	121-14-2	67 U	180 U	37 U	53 U	5.6 U	2.2 U	12 U	12 U	12 U	38 U
2,6-Dinitrotoluene	606-20-2	67 U	180 U	37 U	53 U	5.6 U	2.2 U	12 U	12 U	12 U	38 U
2-Chloronaphthalene	91-58-7	230 U	180 U	180 U	180 U	67 U	26 U	140 U	140 U	140 U	210 U
2-Chlorophenol	95-57-8	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
2-Methylnaphthalene	91-57-6	81 J	280	15 J	14 J	12 J	39 J	110 J	38 J	76 J	74 J
2-Methylphenol	95-48-7	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
2-Nitroaniline	88-74-4	450 U	350 U	350 U	340 U	370 U	360 U	390 U	380 U	380 U	410 U
2-Nitrophenol	88-75-5	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
3,3'-Dichlorobenzidine	91-94-1	220 U	180 U	120 U	180 U	18 U	7.2 U	39 U	39 U	38 U	130 U
3-Nitroaniline	99-09-2	450 U	350 U	350 U	340 U	370 U	360 U	390 U	380 U	380 U	410 U
4,6-Dinitro-2-methylphenol	534-52-1	450 U	350 U	350 U	340 U	370 U	310 U	390 U	380 U	380 U	410 U
4-Bromophenyl-phenylether	101-55-3	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
4-Chloro-3-methylphenol	59-50-7	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
4-Chloroaniline	106-47-8	230 U	180 U	180 U	180 U	170 U	66 U	200 U	190 U	200 U	210 U
4-Chlorophenyl-phenylether	7005-72-3	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
4-Methylphenol	106-44-5	230 U	12 J	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
4-Nitroaniline	100-01-6	450 U	350 U	350 U	340 U	370 U	360 U	390 U	380 U	380 U	410 U
4-Nitrophenol	100-02-7	450 U	350 U	350 U	340 U	370 U	220 U	390 U	380 U	380 U	410 U

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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	23 U	850	18 U	17 U	18 UJ	18 UJ	7.8 J	19 UJ	19 UJ	9.3 J
Acenaphthylene	208-96-8	17 J	52 J	18 U	11 J	18 UJ	2.7 J	7.9 J	6 J	8.1 J	19 J
Acetophenone	98-86-2	53 J	58 J	28 J	32 J	35 J	24 J	48 J	32 J	41 J	45 J
Anthracene	120-12-7	39 J	1900	23 J	25	2.1 J	1.9 J	13 J	9.5 J	10 J	25 J
Atrazine	1912-24-9	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Benzaldehyde	100-52-7	1000	700	460	280	430	290	670	360	290	880
Benzo(a)anthracene	56-55-3	350	7200	180 J	300 J	19 J	14 J	160 J	85 J	64 J	170 J
Benzo(a)pyrene	50-32-8	290 J	4900	180 J	300 J	24 J	15 J	150 J	76 J	58 J	170 J
Benzo(b)fluoranthene	205-99-2	520	8800	290 J	470 J	36 J	22 J	240 J	120 J	98 J	270 J
Benzo(g,h,i)perylene	191-24-2	350	2700 J	68	210	16 J	9.8 J	64 J	50 J	55 J	120 J
Benzo(k)fluoranthene	207-08-9	170 J	1400 J	56 J	120 J	11 J	6.5 J	37 J	31 J	29 J	79 J
bis(2-Chloroethoxy)methane	111-91-1	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
bis(2-Chloroethyl)ether	111-44-4	67 U	180 U	37 U	53 U	5.6 U	2.2 U	12 U	12 U	12 U	38 U
bis(2-Ethylhexyl)phthalate	117-81-7	230 U	180 U	180 U	180 U	32 J	20 J	29 J	21 J	21 J	30 J
Butylbenzylphthalate	85-68-7	230 U	180 U	180 U	11 J	190 U	190 U	200 U	12 J	200 U	19 J
Caprolactam	105-60-2	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Carbazole	86-74-8	32 J	1000	18 J	28 J	2.6 J	1.4 J	17 J	7.9 J	10 J	22 J
Chlorophenols	58-90-2	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Chrysene	218-01-9	320	5200	130 J	230	27 J	20 J	120 J	74 J	78 J	190 J
Dibenz(a,h)anthracene	53-70-3	53 J	920	21 J	41 J	2 J	2 J	24 J	14 J	12 J	37 J
Dibenzofuran	132-64-9	24 J	700	180 U	180 U	190 U	190 U	39 J	13 J	24 J	22 J
Diethylphthalate	84-66-2	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Dimethylphthalate	131-11-3	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Di-n-butylphthalate	84-74-2	18 J	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Di-n-octylphthalate	117-84-0	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Fluoranthene	206-44-0	650	12000	290 J	510	43 J	30 J	160 J	100 J	110 J	330
Fluorene	86-73-7	14 J	1100	8.7 J	9.3 J	18 UJ	18 UJ	9.7 J	4.6 J	7 J	12 J
Hexachlorobenzene	118-74-1	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Hexachlorobutadiene	87-68-3	230 U	180 U	180 U	180 U	190 U	88 U	200 U	190 U	200 U	210 U
Hexachlorocyclopentadiene	77-47-4	230 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Hexachloroethane	67-72-1	230 U	180 U	180 U	180 U	110 U	44 U	200 U	190 U	200 U	210 U
Indeno(1,2,3-cd)pyrene	193-39-5	370 J	4100 J	150 J	270 J	19 J	11 J	120 J	62 J	51 J	150 J
Isophorone	78-59-1	230 U	180 U	180 U	180 U	170 U	66 U	200 U	190 U	200 U	210 U
Naphthalene	91-20-3	67 J	350 J	19 J	17 U	9.7 J	24 J	87 J	24 J	46 J	47 J
Nitrobenzene	98-95-3	230 U	180 U	180 U	180 U	39 U	15 U	82 U	82 U	81 U	210 U
N-Nitroso-di-n-propylamine	621-64-7	67 UJ	180 U	37 UJ	53 UJ	5.6 U	2.2 U	12 U	12 U	12 U	38 U
N-Nitrosodiphenylamine	86-30-6	230 U	19 J	180 U	180 U	190 U	130 U	200 U	190 U	200 U	210 U
Pentachlorophenol	87-86-5	220 UJ	350 U	120 UJ	180 UJ	18 U	7.2 U	39 U	39 U	38 U	6 J
Phenanthrene	85-01-8	250	9400	130 J	160 J	28 J	28 J	160 J	82 J	100 J	190 J
Phenol	108-95-2	230 U	18 J	180 U	180 U	190 U	190 U	200 U	190 U	200 U	210 U
Pyrene	129-00-0	380	12000	190 J	320	38 J	23 J	170 J	97 J	120 J	350

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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
1-Bromo-3-fluorobenzene	1073-06-9	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
2-Bromopyridine	109-04-6	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
1-Bromo-4-ethylbenzene	1585-07-5	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
Benzo(e)pyrene	192-97-2	318 J	4020	360 J	301 J	375 U	402 U	123 J	144 J	392 U	192 J
Perylene	198-55-0	498 U	1630	120 J	402 U	375 U	402 U	402 U	388 U	392 U	397 U
2-Chloro-6-fluorophenol	2040-90-6	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
3-Bromoacetophenone	2142-63-4	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
11H-Benzo(b)fluorene	30777-19-6	498 U	1370	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
3,4-Dichlorobenzotrifluoride	328-84-7	498 U	513 U	417 U	402 U	375 U	749	105 J	388 U	392 U	397 U
4-Bromofluorobenzene	460-00-4	498 U	513 U	417 U	402 U	375 U	402 U	402 U	388 U	392 U	397 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Surface Soil Results
Diaz Chemical Corporation Site
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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	28 R	0.92 J	0.76 J	0.84 J	0.9 R	0.84 J	1.1 R	0.34 J	0.75 R	1.1 R
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	64	1.2 JN	1.4 J	3.5 J	3 J	1.8 J	3.9 J	2.2 J	4 J	13
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	56.5	0.95 J	0.37 J	0.89 J	1.5 J	0.82 J	2.4 J	1.7 J	1.2 J	5.7
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	46	1.05 JN	0.82 J	2.3 J	2.1 J	1.3 J	2.9 J	0.98 J	2.2 J	13
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	9.1	0.2 U	0.18 UJ	0.52 J	0.39 J	0.28 J	0.76 J	0.31 J	0.38 J	1.4 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	4.7 J	0.412 JN	0.21 UJ	0.45 JN	0.63 J	0.359 JN	0.404 JN	0.52 J	0.64 J	7.9
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	9.4	0.42 J	0.39 J	1.3 J	1.9 J	1 J	0.95 J	1.7 J	1.5 J	27
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	76	11	4.4 J	16	29.4	13	13	84.1	20	340
Total Pentachlorodibenzo-p-dioxin	36088-22-9	91	2.7	2.3	4.6	4.9	2	6.3	2.6	4.1	15
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	3.4	0.24 UJ	0.16 U	0.12 U	0.2 J	0.145 JN	0.236 JN	0.17 U	0.206 JN	0.352 JN
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	25	0.45 J	0.19 J	0.328 JN	0.552 JN	0.264 JN	0.67 J	0.332 JN	0.618 JN	2.26 JN
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	10	0.391 JN	0.27 J	0.592 JN	0.358 JN	0.305 JN	0.68 J	0.28 J	0.56 J	2.8 J
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	39.3	0.75 J	0.54 J	1 J	1.4 J	0.82 J	1.9 J	1 J	1.5 J	7.2
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	6.06	0.313 J	0.313 JN	1.16 J	1.5 J	0.872 J	0.651 J	1.06 J	1.12 J	17
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	12	0.37 J	0.27 UJ	0.56 JN	0.695 JN	0.427 JN	0.843 JN	1.1 J	0.693 JN	8.58
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	120	4.9	2.6 J	7.2	13	6.3	11.5	18	9.6	130
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	74	8.8	6.9	23	44	21	12	44.6	29.9	626
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	510	65	57	190	353	150	91	491	229	4750 J
Total TCDF	55722-27-5	720	23	27	51	54	33	65	27	70	180
Total Tetra-Dioxins	41903-57-5	66	1.4	2.2	4.9	4.2	2	7.4	1.9	4	5.6
Total Penta-Furans	30402-15-4	710	18	25	50	55	34	57	37	74	260
Total Hexa-Furans	55684-94-1	450	15	13	35	39	23	36	38	43	360
Total Hexa-Dioxins	34465-46-8	100	4.9	4.2	12	16	7.8	10	10	12	140
Total Hepta-Furans	38998-75-3	200	13	5.4	18	31	13	20	60	24	380
Total Hepta-Dioxins	37871-00-4	150	16	14	42	75	34	22	75	50	1000

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Chemical Name	CAS No.	SS57	SS58	SS59	SS60	SS61	SS62	SS63	SS64	SS65	SS66
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	5390	6050	5770	5420	3960	4680	4910	4720	4740	3920
Antimony	7440-36-0	0.77 J	0.81 U	0.65 U	0.64 U	0.61 U	0.64 U	0.64 U	0.62 U	0.63 U	0.65 U
Arsenic	7440-38-2	24 J	7.2 J	4.1 J	2.1 J	1.6 J	1.7 J	2.6 J	1.9 J	4.7 J	2.1 J
Barium	7440-39-3	324	121	86.1	72	53.1	58.4	98.2	55.7	80.7	43.4
Beryllium	7440-41-7	0.29 J	0.22 J	0.26 J	0.15 J	0.11 J	0.14 J	0.15 J	0.18 J	0.22 J	0.12 J
Cadmium	7440-43-9	2.3	0.61 J	0.37 J	0.27 J	0.16 J	0.18 J	0.17 J	0.83 U	0.2 J	0.24 J
Calcium	7440-70-2	13700	8920	2610	3960	30900	49300	28500	11600	21000	12200
Chromium	7440-47-3	13.1	10.5	8	8.7	6.3	6.9	8	7.5	7.5	8.4
Cobalt	7440-48-4	5.4 J	3.3 J	3.1 J	2.1 J	1.5 J	2 J	1.4 J	1.9 J	2.7 J	1.2 J
Copper	7440-50-8	90.9	32.4	16.9	14.7	12.9	15.9	17.1	11.8	14.7	13.7
Cyanide	57-12-5	3 U	3 U	2.4 U	2.4 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.4 U
Iron	7439-89-6	36800	9310	9300	9300	8680	10400	8820	8150	10200	7800
Lead	7439-92-1	1670	365	128	165	32.1	42.2	69.4	22.5	41.2	89.8
Magnesium	7439-95-4	2380	2200	1770	1980	4410	14000	3600	3650	4870	5890
Manganese	7439-96-5	321	316	503	384	419	411	456	252	412	285
Mercury	7439-97-6	1.7	0.23	0.31	0.13	0.061 J	7.8	0.11 J	0.044 J	0.042 J	0.046 J
Nickel	7440-02-0	28.7	11.5	9.2	9.8	9	10	10.4	8.5	12.2	8.5
Potassium	9-7-7440	736 J	741 J	496 J	558 J	484 J	597	542 J	501 J	776	500 J
Selenium	7782-49-2	6 J	1.1 J	0.14 J	0.17 J	0.18 J	0.16 J	0.18 J	0.16 J	0.14 J	0.17 J
Silver	7440-22-4	0.65 J	1.5 U	1.3 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sodium	7440-23-5	392 J	754 U	635 U	589 U	563 U	577 U	579 U	575 U	203 J	604 U
Thallium	7440-28-0	0.21	0.12 U	0.1 U	0.1 U	0.09 U	0.09 U	0.1 U	0.09 U	0.09 U	0.1 U
Vanadium	7440-62-2	35.4	20.2	13.6	13	11.5	11.1	10.9	10.3	12.7	9.8
Zinc	7440-66-6	913	205	67.3	99.4	43.2	72.2	74.4	40	54.9	62.4

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
Diaz Chemical Corporation Site
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Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	5.81 U	6.17 U	6.33 U	1.95 J	5.88 U	5.75 U	5.81 U	5.88 U	5.88 U	6.1 U
4-Chlorobenzotrifluoride	98-56-6	5.81 U	6.17 U	6.33 U	1.98 J	5.88 U	5.75 U	5.81 U	5.88 U	5.88 U	6.1 U
1-Bromo-2-chloroethane	107-04-0	5.81 U	6.17 U	6.33 U	6.1 U	5.88 U	5.75 U	5.81 U	5.88 U	5.88 U	6.1 U
1,3-Dibromobenzene	108-36-1	5.81 U	6.17 U	6.33 U	6.1 U	5.88 U	5.75 U	5.81 U	5.88 U	5.88 U	6.1 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	190 U	170 U	16 J	180 U	200 U	190 U	190 U	200 U	210 U	170 U
1,2,4,5-Tetrachlorobenzene	95-94-3	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
2,2'-oxybis(1-Chloropropane)	108-60-1	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
2,4,5-Trichlorophenol	95-95-4	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
2,4,6-Trichlorophenol	88-06-2	44 U	170 U	200 U	87 U	93 UJ	91 UJ	180 UJ	19 UJ	200 UJ	170 UJ
2,4-Dichlorophenol	120-83-2	190 U	170 U	200 U	180 U	200 U	190 U	190 U	120 UJ	210 U	170 U
2,4-Dimethylphenol	105-67-9	55 U	170 U	200 U	110 U	120 UJ	110 UJ	190 U	23 UJ	210 UJ	170 U
2,4-Dinitrophenol	51-28-5	190 U	330 U	390 U	360 U	390 U	370 U	370 U	79 UJ	410 U	340 U
2,4-Dinitrotoluene	121-14-2	5.5 U	36 U	90 U	11 U	12 UJ	11 UJ	23 UJ	2.3 UJ	24 UJ	23 UJ
2,6-Dinitrotoluene	606-20-2	5.5 U	36 U	90 U	11 U	12 UJ	11 UJ	23 UJ	2.3 UJ	24 UJ	23 UJ
2-Chloronaphthalene	91-58-7	67 U	170 U	200 U	130 U	140 UJ	140 UJ	190 U	28 UJ	210 U	170 U
2-Chlorophenol	95-57-8	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
2-Methylnaphthalene	91-57-6	22 J	43 J	200 J	28 J	9.4 J	13	30	17 J	30	7.3 J
2-Methylphenol	95-48-7	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 UJ	170 U
2-Nitroaniline	88-74-4	360 U	330 U	390 U	360 U	390 U	370 U	370 U	390 U	410 U	340 U
2-Nitrophenol	88-75-5	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
3,3'-Dichlorobenzidine	91-94-1	18 U	120 U	200 U	36 U	38 UJ	38 UJ	76 UJ	7.7 UJ	81 UJ	76 UJ
3-Nitroaniline	99-09-2	360 U	330 U	390 U	360 U	390 U	370 U	370 U	390 U	410 U	340 U
4,6-Dinitro-2-methylphenol	534-52-1	360 U	330 U	390 U	360 U	390 U	370 U	370 U	330 UJ	410 U	340 U
4-Bromophenyl-phenylether	101-55-3	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
4-Chloro-3-methylphenol	59-50-7	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
4-Chloroaniline	106-47-8	170 U	170 U	200 U	180 U	200 U	190 U	190 U	70 UJ	210 U	170 U
4-Chlorophenyl-phenylether	7005-72-3	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
4-Methylphenol	106-44-5	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 UJ	170 U
4-Nitroaniline	100-01-6	360 U	330 U	390 U	360 U	390 U	370 U	370 U	390 U	410 U	340 U
4-Nitrophenol	100-02-7	360 U	330 U	390 U	360 U	390 U	370 U	370 U	230 UJ	410 U	340 U

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Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	18 UJ	12 J	34 J	18 UJ	19 U	11 U	19 U	7.7 U	20 U	17 U
Acenaphthylene	208-96-8	3.3 J	16 J	43 J	2.5 J	19 U	11 U	11 J	7.7 U	20 U	17 U
Acetophenone	98-86-2	32 J	29 J	50 J	33 J	31 J	49 J	41 J	39 J	32 J	35 J
Anthracene	120-12-7	3.3 J	26 J	69 J	9 J	19 U	11 U	12 J	7.7 U	7.7 J	5.2 J
Atrazine	1912-24-9	190 U	170 U	200 U	14 J	200 U	190 U	190 U	200 U	210 U	170 U
Benzaldehyde	100-52-7	240	580	450	480	120 J	230	430	200	370	160 J
Benzo(a)anthracene	56-55-3	42 J	170 J	420 J	65 J	130 J	28 J	110 J	39	110	79
Benzo(a)pyrene	50-32-8	37 J	160 J	380 J	72 J	120 J	31 J	100 J	31	85	76
Benzo(b)fluoranthene	205-99-2	63 J	260	630	120 J	180 J	50 J	170 J	50	130	110
Benzo(g,h,i)perylene	191-24-2	26 J	110 J	290	61 J	24	14	54	24	66	62
Benzo(k)fluoranthene	207-08-9	15 J	79 J	180 J	44 J	24 J	16 J	55 J	14 J	40	36
bis(2-Chloroethoxy)methane	111-91-1	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
bis(2-Chloroethyl)ether	111-44-4	5.5 U	36 U	90 U	11 U	12 UJ	11 UJ	23 UJ	2.3 UJ	24 UJ	23 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	23 J	27 J	59 J	32 J	200 U	190 U	190 U	200 U	210 U	170 U
Butylbenzylphthalate	85-68-7	190 U	8.1 J	200 U	10 J	200 U	9.1 J	8.2 J	200 U	210 U	5.4 J
Caprolactam	105-60-2	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Carbazole	86-74-8	5.2 J	25 J	69 J	9.8 J	17 J	3.4 J	11 J	2 J	7.4 J	170 U
Chlorophenols	58-90-2	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Chrysene	218-01-9	36 J	180	420	96 J	44 J	30 J	110 J	49	130	81
Dibenz(a,h)anthracene	53-70-3	5.2 J	33 J	67 J	16 J	13 J	3 J	11 J	5.2 J	14 J	15 J
Dibenzofuran	132-64-9	190 U	16 J	61 J	8.5 J	200 U	190 U	10 J	200 U	11 J	170 U
Diethylphthalate	84-66-2	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Dimethylphthalate	131-11-3	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Di-n-butylphthalate	84-74-2	190 U	170 U	200 U	180 U	200 U	190 U	190 U	6.3 J	210 U	5.8 J
Di-n-octylphthalate	117-84-0	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Fluoranthene	206-44-0	58 J	330	660	150 J	87 J	53 J	210 J	46 J	140 J	61 J
Fluorene	86-73-7	2.4 J	15 J	40 J	3 J	19 U	11 U	7.8 J	7.7 U	20 U	17 U
Hexachlorobenzene	118-74-1	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Hexachlorobutadiene	87-68-3	190 U	170 U	200 U	180 U	200 U	190 U	190 U	94 UJ	210 U	170 U
Hexachlorocyclopentadiene	77-47-4	190 U	170 U	200 U	180 U	200 U	190 U	190 U	200 U	210 U	170 U
Hexachloroethane	67-72-1	110 U	170 U	200 U	180 U	200 U	190 U	190 U	47 UJ	210 U	170 U
Indeno(1,2,3-cd)pyrene	193-39-5	30 J	130 J	330 J	59 J	100 J	18 J	61	28	75	72
Isophorone	78-59-1	170 U	170 U	200 U	180 U	200 U	190 U	190 U	70 UJ	210 U	170 U
Naphthalene	91-20-3	14 J	30 J	130 J	24 J	11 J	16 J	25	14 J	22	7.5 J
Nitrobenzene	98-95-3	39 U	170 U	200 U	76 U	82 UJ	80 UJ	160 UJ	16 UJ	170 UJ	160 UJ
N-Nitroso-di-n-propylamine	621-64-7	5.5 U	36 U	90 U	11 U	12 UJ	11 UJ	23 UJ	2.3 UJ	24 UJ	23 UJ
N-Nitrosodiphenylamine	86-30-6	190 U	170 U	200 U	180 U	200 U	190 U	190 U	140 UJ	210 U	170 U
Pentachlorophenol	87-86-5	18 U	120 U	300 U	36 U	38 UJ	22 UJ	38 UJ	7.7 UJ	41 UJ	34 UJ
Phenanthrene	85-01-8	42 J	200	510	70 J	43	33 J	140 J	34 J	84	26 J
Phenol	108-95-2	190 U	170 U	200 U	180 U	200 U	15 J	11 J	200 U	210 U	170 U
Pyrene	129-00-0	58 J	320	820	140 J	87 J	46 J	210	60	180	84

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Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
1-Bromo-3-fluorobenzene	1073-06-9	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
2-Bromopyridine	109-04-6	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
1-Bromo-4-ethylbenzene	1585-07-5	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
Benzo(e)pyrene	192-97-2	388 U	278 J	416 J	157 J	392 U	383 U	388 U	392 U	392 U	407 U
Perylene	198-55-0	388 U	412 U	123 J	407 U	392 U	383 U	388 U	392 U	392 U	407 U
2-Chloro-6-fluorophenol	2040-90-6	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
3-Bromoacetophenone	2142-63-4	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
11H-Benzo(b)fluorene	30777-19-6	388 U	412 U	121 J	407 U	392 U	383 U	388 U	392 U	392 U	407 U
3,4-Dichlorobenzotrifluoride	328-84-7	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
4-Bromofluorobenzene	460-00-4	388 U	412 U	422 U	407 U	392 U	383 U	388 U	392 U	392 U	407 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.48 J	7.5 R	3 R	0.2 U	0.353 J	0.324 J	0.839 J	0.528 J	0.17 U	0.22 U
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	3.9 J	35	88	0.331 J	1.24 J	0.721 JN	2.89 J	1.66 J	1.01 J	0.557 J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1 J	14	5.2	0.409 JN	0.316 J	0.252 J	1.21 J	0.693 J	0.296 J	0.213 JN
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	2.6 J	22	17	0.426 JN	0.813 J	0.472 J	1.91 J	1.02 J	0.626 J	0.397 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.31 J	3.6 J	5.02 JN	0.13 U	0.15 U	0.17 U	0.312 J	0.22 U	0.14 U	0.11 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.54 J	3.4 J	1.4 JN	0.312 J	0.247 JN	0.22 U	0.429 J	0.26 U	0.14 U	0.23 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	1.9 J	8.3	5	0.649 J	0.475 J	0.259 J	1.01 J	0.288 J	0.222 J	0.2 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	21.6	78	78.9	8.4 J	4.55 J	2.4 J	12.5	64.8	3.21 JN	1.08 JN
Total Pentachlorodibenzo-p-dioxin	36088-22-9	3.4	46	19	0.824 J	1.81 J	0.528 J	4.52 J	2.48 J	0.853 J	0.178 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.24 UJ	0.9 J	0.66 J	0.15 U	1.42	0.15 U	1.96	1.07	0.14 U	0.21 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.517 JN	8.1	13.8 JN	0.13 U	0.081 U	0.31 U	0.763 JN	0.307 J	0.238 JN	0.17 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.47 J	6	2.3 J	0.253 JN	0.219 JN	0.12 U	0.349 J	0.329 JN	0.11 U	0.12 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.2 J	14	9.7	0.484 JN	0.579 JN	0.355 JN	1.85 JN	0.935 JN	0.572 JN	0.224 JN
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	1.39 J	5.67	3.07 J	0.596 U	0.495 J	0.232 J	1 J	0.387 J	0.203 J	0.205 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.74 JN	4.3 J	2.6 J	0.213 JN	0.185 JN	0.17 U	0.571 J	0.318 J	0.19 JN	0.1 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	9.9	63	43	3.91 J	2.8 J	1.56 J	6.96	4.25 J	1.66 J	0.824 JN
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	33	112	70	15.9	7.54	3.5 J	17	5.77	2.97 J	1.62 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	250	760	555	144	53.3	26.3	125	86.6	23.7	11
Total TCDF	55722-27-5	66	430	980	4.39	19.4	7.17	50.1	26.1	15.5	8.08
Total Tetra-Dioxins	41903-57-5	2	29	10	0.174 J	2.92	0.437 J	7.87	1.71	0.716 J	0.21 U
Total Penta-Furans	30402-15-4	79	520	1200	7	22.9	10.6	58.5	29.4	17	5.73
Total Hexa-Furans	55684-94-1	48	310	580	8.14	12.2	6.01	30.5	14.8	9.12	4.39 J
Total Hexa-Dioxins	34465-46-8	13	86	45	5.5	5.11	2.24 J	11	4.22 J	2.31 J	1.2 J
Total Hepta-Furans	38998-75-3	25	140	110	9.67	5.36	2.7 J	15.3	10.5	3.35 J	1.3 J
Total Hepta-Dioxins	37871-00-4	58	210	140	28.3	13.4	6.31	31.7	11.5	5.51	2.94 J

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Holley, New York

Chemical Name	CAS No.	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	6460	4920	5380	1460	7500	5730	6170	6510	6980	7100
Antimony	7440-36-0	0.61 U	0.7 U	0.69 U	0.6 U	0.62 U	0.61 U	0.62 U	0.63 U	0.64 U	0.63 U
Arsenic	7440-38-2	2.3 J	10.2 J	9.2 J	3.1 J	4.6 J	4.7 J	5.1 J	4.5 J	4.8 J	4.1 J
Barium	7440-39-3	50.7	102	75.9	24.4	57.7	58.7	67.7	63.6	58	68
Beryllium	7440-41-7	0.18 J	0.22 J	0.18 J	0.36 U	0.39	0.35 J	0.4	0.32 J	0.29 J	0.32 J
Cadmium	7440-43-9	0.81 U	0.4 J	0.58 J	0.16 J	0.19 J	0.24 J	0.34 J	0.37 J	0.17 J	0.84 U
Calcium	7440-70-2	16000	10200	24900	1E+05	1770	1470	1870	1470	1450	1040
Chromium	7440-47-3	10.5	7.6	10.9	4.7	11.9	8	8.8	7.9	8.1	7.2
Cobalt	7440-48-4	1.8 J	2.5 J	1.7 J	1.2 J	5.7	4.9 J	5.1 J	4.7 J	3.9 J	4.8 J
Copper	7440-50-8	9.4	18.9	23.2	10.1	11.3	15.5	14.6	10.3	8.5	7.7
Cyanide	57-12-5	2.3 U	2.6 U	2.6 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.4 U	2.3 U
Iron	7439-89-6	11900	7220	10500	6170	13400	9890	10400	9920	8560	8930
Lead	7439-92-1	34.8	794	275	28	134	132	504	567	48.4	26.1
Magnesium	7439-95-4	5150	2860	7850	74800	2530	2190	2160	1820	1770	1270
Manganese	7439-96-5	359	291	806	342	469	448	496	398	364	520
Mercury	7439-97-6	0.049 J	0.17	0.14	0.11 U	0.044 J	0.052 J	0.12	0.1 J	0.1 J	0.084 J
Nickel	7440-02-0	17.7	10.3	12.1	6.4	12.2	10.9	10.9	8.5	8.9	7.1
Potassium	9-7-7440	781	629 J	468 J	562	614	573	588	527 J	431 J	331 J
Selenium	7782-49-2	0.13 J	0.55 J	0.28 J	0.18 J	0.18 J	0.15 J	0.31 J	0.23 J	0.19 J	0.15 J
Silver	7440-22-4	1.1 U	1.3 U	1.3 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U
Sodium	7440-23-5	219 J	243 J	642 U	556 U	581 U	563 U	573 U	592 U	588 U	592 U
Thallium	7440-28-0	0.09 U	0.1 U	0.1 U	0.09 U	0.09	0.09 U	0.1	0.09 U	0.09 U	0.09 U
Vanadium	7440-62-2	13.8	17.4	13.4	6.2	18.1	11.3	12.6	12.4	10.8	12.8
Zinc	7440-66-6	51.1	147	139	136	61.3	79.8	145	178	41.9	34.7

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.33 U	5.56 U	6.17 U	5.95 U	6.02 U	6.17 U	6.02 U	5.95 U	6.41 U	6.17 U
4-Chlorobenzotrifluoride	98-56-6	6.33 U	5.56 U	6.88	5.95 U	6.02 U	6.17 U	6.02 UJ	5.95 U	6.41 U	6.17 U
1-Bromo-2-chloroethane	107-04-0	6.33 U	5.56 U	6.17 U	5.95 U	6.02 U	6.17 U	6.02 UJ	5.95 U	6.41 U	6.17 U
1,3-Dibromobenzene	108-36-1	6.33 U	5.56 U	6.17 U	5.95 U	6.02 U	6.17 U		5.95 U	6.41 U	6.17 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
1,2,4,5-Tetrachlorobenzene	95-94-3	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2,2'-oxybis(1-Chloropropane)	108-60-1	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2,4,5-Trichlorophenol	95-95-4	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2,4,6-Trichlorophenol	88-06-2	210 UJ	200 UJ	190 UJ	46 UJ	200 UJ	48 UJ	98 UJ	96 UJ	99 UJ	49 UJ
2,4-Dichlorophenol	120-83-2	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2,4-Dimethylphenol	105-67-9	210 U	210 U	240 UJ	58 UJ	250 UJ	60 UJ	120 UJ	120 UJ	120 UJ	62 UJ
2,4-Dinitrophenol	51-28-5	410 U	400 U	820 UJ	200 UJ	410 U	200 UJ	390 U	400 U	410 U	210 UJ
2,4-Dinitrotoluene	121-14-2	61 UJ	24 UJ	24 UJ	5.8 UJ	25 UJ	6 UJ	12 UJ	12 UJ	12 UJ	6.2 UJ
2,6-Dinitrotoluene	606-20-2	61 UJ	24 UJ	24 UJ	5.8 UJ	25 UJ	6 UJ	12 UJ	12 UJ	12 UJ	6.2 UJ
2-Chloronaphthalene	91-58-7	210 U	210 U	290 UJ	69 UJ	210 U	71 UJ	150 UJ	140 UJ	150 UJ	74 UJ
2-Chlorophenol	95-57-8	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2-Methylnaphthalene	91-57-6	51 J	39	39	8.1 J	28	11 J	22	27	21	34
2-Methylphenol	95-48-7	210 U	210 U	1000 UJ	200 U	210 U	200 U	200 U	210 U	210 U	210 U
2-Nitroaniline	88-74-4	410 U	400 U	2000 U	380 U	410 U	390 U	390 U	400 U	410 U	400 U
2-Nitrophenol	88-75-5	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
3,3'-Dichlorobenzidine	91-94-1	200 UJ	81 UJ	80 UJ	19 UJ	81 UJ	20 UJ	41 UJ	40 UJ	41 UJ	20 UJ
3-Nitroaniline	99-09-2	410 U	400 U	2000 U	380 U	410 U	390 U	390 U	400 U	410 U	400 U
4,6-Dinitro-2-methylphenol	534-52-1	410 U	400 U	2000 U	380 U	410 U	390 U	390 U	400 U	410 U	400 U
4-Bromophenyl-phenylether	101-55-3	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
4-Chloro-3-methylphenol	59-50-7	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
4-Chloroaniline	106-47-8	210 U	210 U	720 UJ	170 UJ	210 U	180 UJ	200 U	210 U	210 U	180 UJ
4-Chlorophenyl-phenylether	7005-72-3	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
4-Methylphenol	106-44-5	210 U	210 U	1000 UJ	200 U	210 U	200 U	200 U	210 U	210 U	210 U
4-Nitroaniline	100-01-6	410 U	400 U	2000 U	380 U	410 U	390 U	390 U	400 U	410 U	400 U
4-Nitrophenol	100-02-7	410 U	400 U	2000 U	380 U	410 U	390 U	390 U	400 U	410 U	400 U

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Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	15 J	20 U	20 U	12 U	21 U	12 U	20 U	20 U	12 U	20 U
Acenaphthylene	208-96-8	12 J	20 U	20 U	12 U	9.9 J	12 U	20 U	20 U	12 U	20 U
Acetophenone	98-86-2	43 J	34 J	1000 U	33 J	42 J	34 J	26 J	45 J	31 J	32 J
Anthracene	120-12-7	40 J	10 J	89 J	12 U	15 J	12 U	6.3 J	20 U	12 U	20 U
Atrazine	1912-24-9	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Benzaldehyde	100-52-7	670	500	470 J	120 J	540	82 J	73 J	360	170 J	260
Benzo(a)anthracene	56-55-3	430 J	230 J	780 J	70 J	160	28	80	64	54	74
Benzo(a)pyrene	50-32-8	390 J	190 J	640 J	63 J	130	23	60	54	45	58
Benzo(b)fluoranthene	205-99-2	570 J	320 J	1100 J	110 J	220 J	45	100	96	77	100
Benzo(g,h,i)perylene	191-24-2	280 J	130	460 J	28	110	19	44	48	38	51
Benzo(k)fluoranthene	207-08-9	190	75	280 J	20	69	9.7 J	33	26 J	23	23
bis(2-Chloroethoxy)methane	111-91-1	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
bis(2-Chloroethyl)ether	111-44-4	61 UJ	24 UJ	24 UJ	5.8 UJ	25 UJ	6 UJ	12 UJ	12 UJ	12 UJ	6.2 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Butylbenzylphthalate	85-68-7	210 U	210 U	1000 U	7.9 J	7.3 J	200 U	200 U	22 J	210 U	210 U
Caprolactam	105-60-2	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Carbazole	86-74-8	39 J	27 J	100 J	8.4 J	15 J	3.2 J	3.1 J	3.5 J	210 U	2.6 J
Chlorophenols	58-90-2	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Chrysene	218-01-9	470 J	180	830 J	63	200	43	100	88	81	100
Dibenz(a,h)anthracene	53-70-3	63	29 J	110	10 J	22	4.2 J	10 J	9.7 J	8.2 J	11 J
Dibenzofuran	132-64-9	26 J	15 J	1000 U	200 U	11 J	200 U	8.3 J	210 U	210 U	210 U
Diethylphthalate	84-66-2	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Dimethylphthalate	131-11-3	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	15 J	210 U	210 U
Di-n-butylphthalate	84-74-2	210 U	6.2 J	1000 U	200 U	210 U	200 U	200 U	16 J	8.7 J	210 U
Di-n-octylphthalate	117-84-0	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Fluoranthene	206-44-0	480	140	1100	70 J	230	49 J	83 J	89 J	75 J	81
Fluorene	86-73-7	15 J	20 U	21	12 U	21 U	12 U	20 U	20 U	12 U	20 U
Hexachlorobenzene	118-74-1	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Hexachlorobutadiene	87-68-3	210 U	210 U	970 UJ	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Hexachlorocyclopentadiene	77-47-4	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Hexachloroethane	67-72-1	210 U	210 U	480 UJ	120 UJ	210 U	120 UJ	200 U	210 U	210 U	120 UJ
Indeno(1,2,3-cd)pyrene	193-39-5	330 J	170 J	560 J	61 J	130	22	53	54	43	54
Isophorone	78-59-1	210 U	210 U	720 UJ	170 UJ	210 U	180 UJ	200 U	210 U	210 U	180 UJ
Naphthalene	91-20-3	46 J	32 J	60 J	9.8 J	24 J	10 J	17 J	25 J	17 J	25
Nitrobenzene	98-95-3	210 U	170 UJ	170 UJ	40 UJ	170 UJ	42 UJ	86 UJ	84 UJ	87 UJ	43 UJ
N-Nitroso-di-n-propylamine	621-64-7	61 UJ	24 UJ	24 UJ	5.8 UJ	25 UJ	6 UJ	12 UJ	12 UJ	12 UJ	6.2 UJ
N-Nitrosodiphenylamine	86-30-6	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	210 U	210 U	210 U
Pentachlorophenol	87-86-5	42 UJ	41 UJ	41 UJ	19 UJ	42 UJ	20 UJ	40 UJ	40 UJ	25 U	20 UJ
Phenanthrene	85-01-8	320	71	700 J	30	130	26	61	58	49	67
Phenol	108-95-2	210 U	210 U	1000 U	200 U	210 U	200 U	200 U	17 J	210 U	210 U
Pyrene	129-00-0	700 J	230 J	1300 J	90	310 J	52	130	110	100	130

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Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
1-Bromo-3-fluorobenzene	1073-06-9	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
2-Bromopyridine	109-04-6	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
1-Bromo-4-ethylbenzene	1585-07-5	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
Benzo(e)pyrene	192-97-2	121 J	184 J	500	397 U	402 U	412 U	402 U	397 U	427 U	412 U
Perylene	198-55-0	422 U	370 U	128 J	397 U	402 U	412 U	402 U	397 U	427 U	412 U
2-Chloro-6-fluorophenol	2040-90-6	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
3-Bromoacetophenone	2142-63-4	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
11H-Benzo(b)fluorene	30777-19-6	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
3,4-Dichlorobenzotrifluoride	328-84-7	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
4-Bromofluorobenzene	460-00-4	422 U	370 U	412 U	397 U	402 U	412 U	402 U	397 U	427 U	412 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1.46 J	0.962 J	1.16	0.263 JN	0.596 J	0.272 JN	0.368 J	0.418 J	1.02	0.932 J
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.3	3.34 J	2.8 J	0.697 JN	2.95 J	1.09 J	1.55 J	2.14 J	2.95 J	1.94 J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.31 J	2.22 JN	1.95 JN	0.387 JN	0.75 J	0.339 J	0.469 J	0.476 J	0.974 J	0.927 JN
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	3.41 J	2.58 J	2.03 J	0.642 J	1.74 J	0.633 J	0.971 J	1.06 J	1.88 J	1.44 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.341 J	0.19 U	0.434 J	0.14 JN	0.272 JN	0.134 JN	0.202 JN	0.092 U	0.332 JN	0.19 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.611 J	0.463 JN	0.366 J	0.13 U	0.399 JN	0.17 U	0.249 JN	0.331 J	0.525 J	0.301 JN
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	1.12 J	0.71 J	0.728 JN	0.068 U	0.762 J	0.337 J	0.422 JN	0.47 J	1.18 JN	0.616 J
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	12.5	8.25 J	9.27 J	49.2	8.7 J	2.99 J	4.23 J	5.04 J	11.6	5.13 J
Total Pentachlorodibenzo-p-dioxin	36088-22-9	7.1	4.41 J	3.74 J	0.552 J	3.93 J	1.4 J	2.5 J	3.15 J	7.37	5.33
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.227 JN	2.59	4.73	0.318 J	0.12 U	0.17 U	0.2 U	0.19 U	0.22 U	0.36 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1.1 J	0.992 J	0.716 J	0.19 U	0.578 J	0.18 JN	0.18 U	0.344 J	0.86 JN	0.546 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	1.33 JN	0.674 JN	0.486 JN	0.16 U	0.359 JN	0.15 U	0.17 JN	0.401 JN	0.525 JN	0.486 JN
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	2.9 J	1.61 J	1.5 J	0.487 J	1.55 JN	0.576 JN	0.917 JN	1.04 JN	1.41 JN	0.858 JN
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	1.16 JN	0.484 J	0.655 J	0.12 U	0.783 J	0.145 U	0.416 JN	0.39 J	1.32 J	0.558 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.54 U	0.21 U	0.611 JN	0.22 U	0.438 JN	0.19 U	0.217 JN	0.278 J	0.508 JN	0.2 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	8.68	6.18	6.32	7.99	4.83	1.76 J	2.61 J	3.56 J	5.91	4.17 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	16.5	8.98	8.32	2.24 J	11.4	4.64	6.57	7.83	26.6	7.18
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	138	67.8	61.2	15.4	91.4	44.2	70.5	61.2	408	58
Total TCDF	55722-27-5	142	58.8	56.4	9.01	47.6	18.1	30.6	31.7	44.3	41.6
Total Tetra-Dioxins	41903-57-5	4.5	6.36	8.25	0.903 J	1.89	0.872 J	1.33	1.26	5.56	2.9
Total Penta-Furans	30402-15-4	119	53.7	46	9.55	47	17.8	28.6	32	39.8	29.5
Total Hexa-Furans	55684-94-1	60.8	35.4	28.9	7.72	27.9	10.5	15.9	18.1	24.6	17
Total Hexa-Dioxins	34465-46-8	13	7.96	8.9	1.65 J	8.36	2.78 J	4.92	6.01	15.6	8.28
Total Hepta-Furans	38998-75-3	15.4	10	10.8	20.1	9.8	3.4 J	4.87	7.19	14.2	6.65
Total Hepta-Dioxins	37871-00-4	29.5	15.9	15.3	4.32 J	21.2	8.94	12	14.9	66.3	14.2

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Chemical Name	CAS No.	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	7590	7170	7290	6560	7920	8680	8630	7500	8200	7390
Antimony	7440-36-0	0.67 U	0.65 U	0.65 U	0.61 U	0.69 U	0.65 U	0.62 U	0.64 U	0.63 U	0.66 U
Arsenic	7440-38-2	11.2 J	8.6 J	10.4 J	4.1 J	5.4 J	4 J	4.8 J	4.7 J	8.8 J	8.5 J
Barium	7440-39-3	128	263	145	66.1	83.2	58.2	78.4	58.3	134	107
Beryllium	7440-41-7	0.39 J	0.37 J	0.4	0.46	0.37 J	0.4	0.42	0.35 J	0.43	0.38 J
Cadmium	7440-43-9	0.29 J	0.9 J	0.61 J	0.29 J	0.2 J	0.87 U	0.19 J	0.18 J	0.53 J	0.31 J
Calcium	7440-70-2	2790	3370	4340	1900	2820	985	1740	1330	2300	2770
Chromium	7440-47-3	11.9	10.4	11.8	9.2	9.4	10.3	11.4	8.7	12.8	9.6
Cobalt	7440-48-4	5.7	5.3 J	5.8	5 J	4.8 J	5.6	6.5	5.1 J	5.7	5.5 J
Copper	7440-50-8	20.8	44.5	32	12.9	8.3	8.8	12.8	9.2	22.6	22.8
Cyanide	57-12-5	2.5 U	2.4 U	2.4 U	2.3 U	2.6 U	2.4 U	2.4 U	2.4 U	2.5 U	2.4 U
Iron	7439-89-6	11700	11200	11200	9930	10700	12300	13600	10500	12700	10900
Lead	7439-92-1	175	719	1270	314	60.2	41.1	46.5	63	356	138
Magnesium	7439-95-4	2180	2200	2210	1830	2130	2370	2660	1900	2420	1940
Manganese	7439-96-5	480	547	566	587	438	347	522	475	611	713
Mercury	7439-97-6	0.13	0.71	0.24	0.18	0.093 J	0.058 J	0.09 J	0.12	0.31	0.24
Nickel	7440-02-0	10.9	10.9	10.4	9.3	9.6	12.5	14.5	9.8	13	10
Potassium	9-7-7440	722	710	599 J	593	593 J	553 J	785	499 J	679	792
Selenium	7782-49-2	0.55 J	0.68 J	0.56 J	0.15 J	0.36 J	0.25 J	0.23 J	0.37 J	0.53 J	0.49 J
Silver	7440-22-4	1.3 U	0.4 J	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U
Sodium	7440-23-5	625 U	611 U	612 U	580 U	640 U	608 U	592 U	602 U	640 U	616 U
Thallium	7440-28-0	0.12	0.12	0.11	0.09 U	0.1 U	0.1 U	0.12	0.1 U	0.13	0.11
Vanadium	7440-62-2	14.9	14	15.5	12.2	13.6	15.1	15.3	13.3	16.4	14
Zinc	7440-66-6	131	301	251	89.9	52.7	59.6	70.8	49.7	250	108

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.41 U	6.33 U	6.02 U	6.17 U	5.95 U	5.95 U	6.58 U	6.17 U	6.17 U	6.02 U
4-Chlorobenzotrifluoride	98-56-6	6.41 U	6.33 U	6.02 U	6.17 U	5.95 U	5.95 U	6.58 U	6.17 U	6.17 U	6.02 U
1-Bromo-2-chloroethane	107-04-0	6.41 U	6.33 U	6.02 U	6.17 U	5.95 U	5.95 U	6.58 U	6.17 U	6.17 U	6.02 U
1,3-Dibromobenzene	108-36-1	6.41 U	6.33 U	6.02 U	6.17 U	5.95 U	5.95 U	6.58 U	6.17 U	6.17 U	6.02 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
1,2,4,5-Tetrachlorobenzene	95-94-3	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
2,2'-oxybis(1-Chloropropane)	108-60-1	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
2,4,5-Trichlorophenol	95-95-4	220 U	200 U	120 UJ	110 U	120 U	120 U	190 U	110 U	120 U	120 U
2,4,6-Trichlorophenol	88-06-2	100 UJ	19 UJ	9.6 UJ	8.6 U	9.2 U	9.2 U	43 U	9.2 U	9.7 U	9.3 U
2,4-Dichlorophenol	120-83-2	220 U	120 UJ	60 UJ	54 U	58 U	58 U	190 U	57 U	61 U	58 U
2,4-Dimethylphenol	105-67-9	130 UJ	23 UJ	12 UJ	11 U	12 U	12 U	54 U	11 U	12 U	12 U
2,4-Dinitrophenol	51-28-5	420 U	80 UJ	41 UJ	36 U	39 U	39 U	180 U	39 U	41 U	39 U
2,4-Dinitrotoluene	121-14-2	13 UJ	2.3 UJ	1.2 UJ	1.1 U	1.2 U	1.2 U	5.4 U	1.1 U	1.2 U	1.2 U
2,6-Dinitrotoluene	606-20-2	13 UJ	2.3 UJ	1.2 UJ	1.1 U	1.2 U	1.2 U	5.4 U	1.1 U	1.2 U	1.2 U
2-Chloronaphthalene	91-58-7	150 UJ	28 UJ	14 UJ	13 U	14 U	14 U	65 U	14 U	15 U	14 U
2-Chlorophenol	95-57-8	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
2-Methylnaphthalene	91-57-6	48	7.3	3.9 U	14	8.6	8.6	17	5.1	16	10
2-Methylphenol	95-48-7	220 U	200 U	0.35 J	0.36 J	0.24 J	120 U	190 U	0.29 J	0.3 J	0.37 J
2-Nitroaniline	88-74-4	420 U	390 U	390 U	370 U	340 U	320 U	360 U	390 U	390 U	270 U
2-Nitrophenol	88-75-5	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
3,3'-Dichlorobenzidine	91-94-1	42 UJ	7.7 UJ	3.9 UJ	3.5 U	3.8 U	3.8 U	18 U	3.8 U	4 U	3.8 U
3-Nitroaniline	99-09-2	420 U	390 U	390 U	370 U	340 U	320 U	360 U	390 U	390 U	270 U
4,6-Dinitro-2-methylphenol	534-52-1	420 U	330 UJ	170 UJ	150 U	160 U	160 U	760 U	160 U	170 U	160 U
4-Bromophenyl-phenylether	101-55-3	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
4-Chloro-3-methylphenol	59-50-7	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
4-Chloroaniline	106-47-8	220 U	70 UJ	36 UJ	32 U	35 U	35 U	160 U	34 U	36 U	35 U
4-Chlorophenyl-phenylether	7005-72-3	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
4-Methylphenol	106-44-5	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
4-Nitroaniline	100-01-6	420 U	390 U	390 U	370 U	340 U	320 U	360 U	390 U	390 U	270 U
4-Nitrophenol	100-02-7	420 U	230 UJ	120 UJ	110 U	120 U	120 U	360 U	110 U	120 U	120 U

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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	21 U	3.9 U	3.9 U	3.7 U	3.4 U	3.2 U	6	3.9 U	3.9 U	4.4 U
Acenaphthylene	208-96-8	21 U	3.9 U	3.9 U	3.7 U	3.4 U	3.2 U	3.9	3.9 U	3.9 U	4.4 U
Acetophenone	98-86-2	39 J	32 J	30 J	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Anthracene	120-12-7	21 U	3.9 U	3.9 U	3.7 U	8.8	3.2 U	73	3.9 U	4.8	4.4 U
Atrazine	1912-24-9	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Benzaldehyde	100-52-7	190 J	160 J	140 J	170 J	190	73 J	370	76 J	120 J	68 J
Benzo(a)anthracene	56-55-3	85	14	5.2	11	85	25	400 J	19	29	16
Benzo(a)pyrene	50-32-8	68	11 J	3.5 J	8.4 J	70	14	280	10	29 J	17 J
Benzo(b)fluoranthene	205-99-2	110	16 J	6	9	110	24	470	19	51 J	14
Benzo(g,h,i)perylene	191-24-2	57	7.1	3.9 U	4.2	46	9.8	180	6.7	12	5.3
Benzo(k)fluoranthene	207-08-9	32	3.9 U	3.9 U	3.7 U	32	13 J	140	4.8	8	7.3 J
bis(2-Chloroethoxy)methane	111-91-1	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
bis(2-Chloroethyl)ether	111-44-4	13 UJ	2.3 UJ	1.2 UJ	1.1 U	1.2 U	1.2 U	5.4 U	1.1 U	1.2 U	1.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	220 U	200 U	200 U	21 J	170 U	170 U	190 U	200 U	200 U	140 U
Butylbenzylphthalate	85-68-7	220 U	9.2 J	7.5 J	190 U	170 U	170 U	48 J	6.6 J	200 U	140 U
Caprolactam	105-60-2	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Carbazole	86-74-8	8.2 J	1.2 J	0.38 J	1.4 J	13 J	2.7 J	28 J	1.1 J	2.5 J	1.8 J
Chlorophenols	58-90-2	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Chrysene	218-01-9	110	17	7	11	84	26	310 J	19	33	16
Dibenz(a,h)anthracene	53-70-3	13 J	1.6 J	0.66 J	1.3 J	14 J	3.8 J	46 J	1.8 J	2.6 J	2 J
Dibenzofuran	132-64-9	16 J	200 U	200 U	190 U	170 U	170 U	9.4 J	200 U	200 U	140 U
Diethylphthalate	84-66-2	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Dimethylphthalate	131-11-3	220 U	200 U	200 U	190 U	170 U	170 U	7.7 J	200 U	200 U	140 U
Di-n-butylphthalate	84-74-2	220 U	200 U	7.1 J	9.6 J	13 J	9.4 J	29 J	12 J	10 J	7.3 J
Di-n-octylphthalate	117-84-0	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Fluoranthene	206-44-0	98 J	16	6.3	17	190	57	670	29	52	27
Fluorene	86-73-7	21 U	3.9 U	3.9 U	3.7 U	3.4 U	3.2 U	11	3.9 U	3.9 U	4.4 U
Hexachlorobenzene	118-74-1	220 U	200 U	120 UJ	110 U	120 U	120 U	190 U	110 U	120 U	120 U
Hexachlorobutadiene	87-68-3	220 U	94 UJ	48 UJ	43 U	46 U	46 U	220 U	46 U	49 U	46 U
Hexachlorocyclopentadiene	77-47-4	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Hexachloroethane	67-72-1	220 U	47 UJ	24 UJ	21 U	23 U	23 U	110 U	23 U	24 U	23 U
Indeno(1,2,3-cd)pyrene	193-39-5	62	8.2 J	3.9 U	7.2 J	55	12	210	8.6	14	6.5
Isophorone	78-59-1	220 U	70 UJ	36 UJ	32 U	35 U	35 U	160 U	34 U	36 U	35 U
Naphthalene	91-20-3	49 J	8.9 J	3.2 J	19 J	8.4 J	8.7 J	17 J	5.7	12	9 J
Nitrobenzene	98-95-3	88 UJ	16 UJ	8.4 UJ	7.5 U	8.1 U	8.1 U	38 U	8 U	8.5 U	8.1 U
N-Nitroso-di-n-propylamine	621-64-7	13 UJ	2.3 UJ	1.2 UJ	1.1 U	1.2 U	1.2 U	5.4 U	1.1 U	1.2 U	1.2 U
N-Nitrosodiphenylamine	86-30-6	220 U	140 UJ	72 UJ	64 U	69 U	69 U	330 U	69 U	73 U	69 U
Pentachlorophenol	87-86-5	42 UJ	4.3 J	3.9 UJ	3.5 U	3.8 U	3.8 U	2 J	3.8 U	4 U	1.2 J
Phenanthrene	85-01-8	78	14	4.6	18	81	24	260	15	37	20
Phenol	108-95-2	220 U	200 U	200 U	190 U	170 U	170 U	190 U	200 U	200 U	140 U
Pyrene	129-00-0	140	24	10	20 J	140 J	42 J	550 J	29 J	45 J	27 J

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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
1-Bromo-3-fluorobenzene	1073-06-9	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
2-Bromopyridine	109-04-6	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
1-Bromo-4-ethylbenzene	1585-07-5	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
Benzo(e)pyrene	192-97-2	427 U	422 U	402 U	412 U	144 J	397 U	350 J	412 U	412 U	402 U
Perylene	198-55-0	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
2-Chloro-6-fluorophenol	2040-90-6	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
3-Bromoacetophenone	2142-63-4	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
11H-Benzo(b)fluorene	30777-19-6	427 U	422 U	402 U	412 U	397 U	397 U	115 J	412 U	412 U	402 U
3,4-Dichlorobenzotrifluoride	328-84-7	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
4-Bromofluorobenzene	460-00-4	427 U	422 U	402 U	412 U	397 U	397 U	439 U	412 U	412 U	402 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.907 J	0.402 JN	0.21 U	0.31 U	0.3 J	0.58 J	1.29 R	0.79 J	0.5 J	0.73 J
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	5.09	0.67 J	0.176 JN	0.665 JN	1.47 J	2.1 J	3.98 J	1.5 J	1.3 J	2 J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.25 J	0.33 J	0.153 JN	0.259 JN	0.501 JN	0.73 J	2.1 J	1 J	0.59 J	0.66 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	3.2 J	0.38 J	0.16 J	0.34 J	1.01 J	1.25 J	3.4 J	0.853 JN	0.82 J	1.2 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.444 JN	0.1 J	0.075 U	0.091 U	0.276 JN	0.38 J	0.776 JN	0.258 JN	0.25 J	0.27 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.806 J	0.11 U	0.07 U	0.1 U	0.347 JN	0.3 JN	0.96 J	0.134 JN	0.276 J	0.32 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	2.06 J	0.31 J	0.094 U	0.2 J	0.697 J	0.717 J	2.4 J	0.332 JN	0.369 J	0.55 J
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	27.1	1.56	1.23	1.17	13.8	15.3	38.9	2.2 JN	3.4 J	7.1 J
Total Pentachlorodibenzo-p-dioxin	36088-22-9	5.6	1.8	0.12 U	0.84	2.5	3	9.2	2.6	1.9	2.9
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.16 U	0.174 JN	0.12 U	0.13 U	0.15 U	0.16 U	0.774 J	0.15	0.15 U	0.13 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.765 J	0.192 JN	0.065 U	0.13 J	0.11 U	0.247 JN	1.2 J	0.53 J	0.299 J	0.41 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.769 JN	0.194 JN	0.12 U	0.143 JN	0.335 JN	0.33 J	1.11 JN	0.37 J	0.27 J	0.327 JN
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	2.51 JN	0.25 J	0.152 JN	0.16 J	0.602 JN	0.72 J	2.2 J	0.625 JN	0.51 J	0.73 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	2.24 J	0.349 J	0.154 JN	0.146 J	0.757 JN	0.658 J	2.21 J	0.288 JN	0.378 J	0.581 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.661 J	0.16 J	0.091 U	0.062 U	0.37 J	0.42 J	1.2 J	0.146 J	0.19 J	0.27 JN
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	12.6	1.2 J	0.79 J	0.83 J	4.73 J	5.63	20.6	2.28 J	2.5 J	3.9 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	88	3.5 J	3.6 J	1.7 J	15	13.8	47.3	3.5 J	5.3	9.2
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	889	16	27.6	10.5	140	126	380	28.6	38.8	64
Total TCDF	55722-27-5	56.2	10	1.7	14	22	35	51	21	18	25
Total Tetra-Dioxins	41903-57-5	2.82	3.8	0.12 U	1.2	3.9	4.2	12	3.2	2.2	2.8
Total Penta-Furans	30402-15-4	71.7	7.9	2.4	11	23	36	66	15	19	27
Total Hexa-Furans	55684-94-1	51.6	4.2	2.2	4.8	17	23	53	8.4	11	16
Total Hexa-Dioxins	34465-46-8	19.7	3.4 J	1.2	2.1 J	7.6	6.8	25	3.4	4.3 J	6.5
Total Hepta-Furans	38998-75-3	29.8	2.2 J	1.4 J	1.6 J	12	15	46	3.7 J	4.8 J	8.2
Total Hepta-Dioxins	37871-00-4	172	6.3	6.6	3.2 J	27	25	88	7.2	10	18

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Chemical Name	CAS No.	SS87	SS88	SS89	SS90	SS91	SS92	SS93	SS94	SS95	SS96
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	7940	9150	7170	6750	7220	7190	5190	6920	8390	8680
Antimony	7440-36-0	0.68 U	0.66 U	0.63 U	0.64 U	0.64 U	0.65 U	0.69 U	0.65 U	0.67 U	0.63 U
Arsenic	7440-38-2	8.4 J	9.2 J	2.7 J	5.1 J	3.1 J	3.2 J	10.4 J	5.2 J	5.8 J	7.7 J
Barium	7440-39-3	94.8	101	38.6	107	72.3	132	111	154	107	66.6
Beryllium	7440-41-7	0.44	0.38 J	0.27 J	0.25 J	0.31 J	0.26 J	0.27 J	0.28 J	0.33 J	0.31 J
Cadmium	7440-43-9	0.42 J	0.36 J	0.84 U	0.25 J	0.24 J	0.51 J	0.67 J	0.35 J	0.26 J	0.26 J
Calcium	7440-70-2	2520	1940	2000	3940	1990	1560	33400	2140	2480	1250
Chromium	7440-47-3	10.4	10.5	8	9.5	9.8	10.8	11.1	10.6	10.1	11.1
Cobalt	7440-48-4	6	5.8	3.6 J	3.9 J	4.4 J	3.9 J	3.7 J	4.5 J	5.1 J	4.5 J
Copper	7440-50-8	18.1	14.8	4.4	11.4	27.8	19.3	18.9	18.1	11.7	9.6
Cyanide	57-12-5	2.6 U	2.5 U	2.4 U	2.4 U	2.3 U	2.3 U	2.6 U	2.4 U	2.4 U	2.4 U
Iron	7439-89-6	12600	12000	8810	11100	12500	12200	11400	11900	13300	13500
Lead	7439-92-1	91.7	134	5.9	80.9	117	343	758	282	110	49.8
Magnesium	7439-95-4	1920	2060	1430	1670	2120	1910	14500	1860	1860	2090
Manganese	7439-96-5	1010	632	310	716	551	524	489	638	791	560
Mercury	7439-97-6	0.11 J	0.094 J	0.12 U	0.21	0.27	0.21	0.26	0.44	0.21	0.14
Nickel	7440-02-0	10.6	12.1	6.6	8.6	10.4	9.9	9.3	9.7	10.6	11.3
Potassium	9-7-7440	802	761	460 J	842	529 J	605	719	652	772	576 J
Selenium	7782-49-2	0.56 J	0.11 J	0.18 J	0.14 J	0.21 J	0.22 J	0.34 J	0.29 J	0.29 J	0.32 J
Silver	7440-22-4	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sodium	7440-23-5	653 U	623 U	602 U	590 U	581 U	598 U	625 U	599 U	612 U	589 U
Thallium	7440-28-0	0.12	0.1 U	0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	0.1 U	0.1 U	0.09 U
Vanadium	7440-62-2	16.6	14.4	14.3	14.6	16.1	16.1	13.6	14.8	17.5	17.9
Zinc	7440-66-6	125	171	20.1	74	63.7	147	193	120	65.3	55.8

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Surface Soil Results
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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.17 U	6.17 U	6.58 U	6.02 U	5.75 U	5.95 U	5 U	6.02 U	6.1 U	6.33 U
4-Chlorobenzotrifluoride	98-56-6	6.17 U	6.17 U	6.58 U	6.02 U	5.75 U	5.95 U	5 U	6.02 U	6.1 U	6.33 U
1-Bromo-2-chloroethane	107-04-0	6.17 U	6.17 U	6.58 U	6.02 U	5.75 U	5.95 U	5 U	6.02 U	6.1 U	6.33 U
1,3-Dibromobenzene	108-36-1	6.17 U	6.17 U	6.58 U	6.02 U	5.75 UJ	5.95 U	5 U	6.02 U	6.1 U	6.33 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
1,2,4,5-Tetrachlorobenzene	95-94-3	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
2,2'-oxybis(1-Chloropropane)	108-60-1	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
2,4,5-Trichlorophenol	95-95-4	120 U	120 U	130 U	120 U	200 U	200 U	200 U	190 U	200 U	210 U
2,4,6-Trichlorophenol	88-06-2	9.4 U	9.5 U	10 U	9.5 U	200 U	190 U	94 U	190 U	19 U	49 U
2,4-Dichlorophenol	120-83-2	59 U	59 U	63 U	60 U	200 U	200 U	200 U	190 U	120 U	210 U
2,4-Dimethylphenol	105-67-9	12 U	12 U	13 U	12 U	200 U	200 U	120 U	190 U	23 U	61 U
2,4-Dinitrophenol	51-28-5	40 U	40 U	43 U	40 U	390 U	380 U	390 U	370 U	80 U	210 U
2,4-Dinitrotoluene	121-14-2	1.2 U	1.2 U	1.3 U	1.2 U	94 U	23 U	12 U	34 U	2.3 U	6.1 U
2,6-Dinitrotoluene	606-20-2	1.2 U	1.2 U	1.3 U	1.2 U	94 U	23 U	12 U	34 U	2.3 U	6.1 U
2-Chloronaphthalene	91-58-7	14 U	14 U	15 U	14 U	200 U	200 U	140 U	190 U	28 U	73 U
2-Chlorophenol	95-57-8	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
2-Methylnaphthalene	91-57-6	9.3	17	7.7	8.2	21	16 J	13 J	20 J	19 U	14 J
2-Methylphenol	95-48-7	0.95 J	0.5 J	0.36 J	0.32 J	200 U	200 U	200 U	190 U	200 U	210 U
2-Nitroaniline	88-74-4	370 U	390 U	370 U	350 U	390 U	380 U	390 U	370 U	380 U	400 U
2-Nitrophenol	88-75-5	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
3,3'-Dichlorobenzidine	91-94-1	3.9 U	3.9 U	4.1 U	3.9 U	200 U	77 U	39 U	110 U	7.7 U	20 U
3-Nitroaniline	99-09-2	370 U	390 U	370 U	350 U	390 U	380 U	390 U	370 U	380 U	400 U
4,6-Dinitro-2-methylphenol	534-52-1	160 U	170 U	180 U	170 U	390 U	380 U	390 U	370 U	330 U	400 U
4-Bromophenyl-phenylether	101-55-3	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
4-Chloro-3-methylphenol	59-50-7	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
4-Chloroaniline	106-47-8	35 U	36 U	38 U	36 U	200 U	200 U	200 U	190 U	70 U	180 U
4-Chlorophenyl-phenylether	7005-72-3	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
4-Methylphenol	106-44-5	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
4-Nitroaniline	100-01-6	370 U	390 U	370 U	350 U	390 U	380 U	390 U	370 U	380 U	400 U
4-Nitrophenol	100-02-7	120 U	120 U	130 U	120 U	390 U	380 U	390 U	370 U	230 U	400 U

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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	3.8 U	4 U	3.7 U	3.6 U	7.6 J	19 U	19 U	18 U	19 U	20 U
Acenaphthylene	208-96-8	3.8 U	4 U	3.7 U	3.6 U	11 J	19 U	19 U	7.3 J	19 U	20 U
Acetophenone	98-86-2	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Anthracene	120-12-7	3.8 U	4.4	3.7 U	3.6 U	50	10 J	7.2 J	14 J	19 U	20 U
Atrazine	1912-24-9	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Benzaldehyde	100-52-7	69 J	110 J	130 J	220	440	90 J	120 J	280	170 J	140 J
Benzo(a)anthracene	56-55-3	210 J	39	20	27	360 J	110 J	73 J	120	19	31 J
Benzo(a)pyrene	50-32-8	150 J	30	11	27 J	320	120 J	71 J	120 J	19 U	27 J
Benzo(b)fluoranthene	205-99-2	200 J	55	18	40 J	470	190 J	120 J	180 J	28 J	39 J
Benzo(g,h,i)perylene	191-24-2	6.7	22	7	9.7	230	67	37	69	19 U	20 U
Benzo(k)fluoranthene	207-08-9	4.4	13	5.8	11 J	140	41	37 J	60 J	9.8 J	18 J
bis(2-Chloroethoxy)methane	111-91-1	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
bis(2-Chloroethyl)ether	111-44-4	1.2 U	1.2 U	1.3 U	1.2 U	94 UJ	23 UJ	12 UJ	34 UJ	2.3 UJ	6.1 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	190 U	200 U	190 U	180 U	200 U	200 U	1200	320	200 U	210 U
Butylbenzylphthalate	85-68-7	190 U	7.1 J	190 U	8.8 J	200 U	11 J	180 J	39 J	12 J	14 J
Caprolactam	105-60-2	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Carbazole	86-74-8	14 J	3.9 J	2 J	2.9 J	29 J	8 J	5.2 J	10 J	1.3 J	2.4 J
Chlorophenols	58-90-2	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Chrysene	218-01-9	20	43	19	26	370 J	110	68 J	130	22	34
Dibenz(a,h)anthracene	53-70-3	18 J	6.3 J	3.1 J	4.6 J	36	15 J	8.9 J	11 J	2 J	3.2 J
Dibenzofuran	132-64-9	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Diethylphthalate	84-66-2	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Dimethylphthalate	131-11-3	190 U	200 U	190 U	180 U	21 J	200 U	200 U	190 U	200 U	210 U
Di-n-butylphthalate	84-74-2	9.4 J	13 J	12 J	7.9 J	200 U	13 J	36 J	23 J	6.7 J	8.8 J
Di-n-octylphthalate	117-84-0	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Fluoranthene	206-44-0	33	69	33	51	730	210	110	220 J	34	59 J
Fluorene	86-73-7	3.8 U	4 U	3.7 U	3.6 U	9.6 J	19 U	19 U	18 U	19 U	20 U
Hexachlorobenzene	118-74-1	120 U	120 U	130 U	120 U	200 U	200 U	200 U	190 U	200 U	210 U
Hexachlorobutadiene	87-68-3	47 U	47 U	50 U	48 U	200 U	200 U	200 U	190 U	94 U	210 U
Hexachlorocyclopentadiene	77-47-4	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Hexachloroethane	67-72-1	23 U	24 U	25 U	24 U	200 U	200 U	200 U	190 U	47 U	120 U
Indeno(1,2,3-cd)pyrene	193-39-5	92 J	27	16 J	14 J	240 J	120 J	72 J	79	14 J	19 J
Isophorone	78-59-1	35 U	15 J	38 U	36 U	200 U	200 U	200 U	190 U	70 U	180 U
Naphthalene	91-20-3	17 J	14 J	9.5 J	7.6	22	25 J	18 J	19 J	4.8 J	20 U
Nitrobenzene	98-95-3	8.2 U	8.3 U	8.8 U	8.3 U	200 U	160 U	82 U	190 U	16 U	43 U
N-Nitroso-di-n-propylamine	621-64-7	1.2 U	1.2 U	1.3 U	1.2 U	94 UJ	23 UJ	12 UJ	34 UJ	2.3 UJ	6.1 UJ
N-Nitrosodiphenylamine	86-30-6	70 U	71 U	75 U	71 U	200 U	200 U	200 U	190 U	140 U	210 U
Pentachlorophenol	87-86-5	3.9 U	1.6 J	4.1 U	1.4 J	40 UJ	39 UJ	39 UJ	37 UJ	7.7 UJ	20 UJ
Phenanthrene	85-01-8	22	36	18	25 J	280 J	84 J	52 J	110	21 J	37 J
Phenol	108-95-2	190 U	200 U	190 U	180 U	200 U	200 U	200 U	190 U	200 U	210 U
Pyrene	129-00-0	34 J	65 J	33 J	51 J	610 J	160	110 J	220	33 J	48 J

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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
1-Bromo-3-fluorobenzene	1073-06-9	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
2-Bromopyridine	109-04-6	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
1-Bromo-4-ethylbenzene	1585-07-5	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
Benzo(e)pyrene	192-97-2	412 U	412 U	439 U	402 U	269 J	397 U	333 U	112 J	407 U	422 U
Perylene	198-55-0	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
2-Chloro-6-fluorophenol	2040-90-6	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
3-Bromoacetophenone	2142-63-4	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
11H-Benzo(b)fluorene	30777-19-6	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
3,4-Dichlorobenzotrifluoride	328-84-7	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
4-Bromofluorobenzene	460-00-4	412 U	412 U	439 U	402 U	383 U	397 U	333 U	402 U	407 U	422 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1.04 R	1.47 R	0.32 U	0.571 J	0.89 J	0.64 J	0.47 J	0.66 J	2.47 R	2.03 R
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	2.6 J	3.5 J	0.45 J	1.59 J	3.9 J	2 J	0.97 J	2.4 J	8.3	5.8
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.2 J	1.5 J	0.45 J	0.702 J	1 J	0.98 J	0.419 JN	1.6 J	7.2	3.4 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	1.7 J	2.2 J	0.38 J	1.15 J	2.4 J	1.4 J	0.759 JN	1.9 J	7.9	3.7 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.4 J	0.42 J	0.0942 JN	0.261 J	0.427 JN	0.291 JN	0.217 JN	0.517 JN	1.8 J	1.02 JN
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.221 JN	0.65 J	0.14 U	0.316 J	0.438 JN	0.364 JN	0.275 JN	0.79 J	1.4 J	0.656 JN
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.63 J	0.86 J	0.14 U	0.747 J	1.2 J	0.79 J	0.625 JN	1.7 J	2.7 J	1.3 J
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	4.8 J	17.5	1.55 J	9.94 J	20.2	18.1	9.18 J	39.8	20.9	16
Total Pentachlorodibenzo-p-dioxin	36088-22-9	6.2	7.2	0.48	2.86 J	3.5	3.3	1.7	5.1	14	14
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.16 U	0.36 J	0.2 U	0.25 U	0.15 J	0.22 U	0.19 U	0.36 U	0.28 J	0.26 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.69 J	0.66 J	0.16 U	0.531 JN	0.33 J	0.292 JN	0.25 J	0.45 U	2.8 J	2.2 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.575 JN	0.66 J	0.14 U	0.387 JN	0.473 JN	0.39 J	0.28 J	0.727 JN	2 J	1.5 J
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.1 J	1.4 J	0.25 J	1.06 JN	1.1 J	0.74 J	0.466 JN	1.3 J	5.8	2.9 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.502 J	0.907 J	0.149 U	0.845 JN	1.08 J	0.66 JN	0.502 JN	1.34 J	2.36 J	1.09 JN
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.32 J	0.61 J	0.23 J	0.421 JN	0.65 J	0.552 JN	0.306 JN	0.71 J	1.76 JN	0.69 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	4.2 J	11	1.2 J	5.42	8	9	4.5 J	14.9	24	9.8
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	6.2	18	2.1 J	11.7	21.5	16.7	11	37.3	44	15.5
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	40.2	161	12.3	93.3	188	139	87.2	335	326	113
Total TCDF	55722-27-5	43	66	4.1	23.2	47	36	13	28	62	69
Total Tetra-Dioxins	41903-57-5	5.3	5.9	0.2 U	1.33	3.8	2	2.6	3.2	6.7	9.1
Total Penta-Furans	30402-15-4	35	51	5.2	25.1	63	33	16	38	83	65
Total Hexa-Furans	55684-94-1	18	31	3.4	15.8	40	22	11	33	70	39
Total Hexa-Dioxins	34465-46-8	7.9	12	1.4	7.43	10	8.3	5.7	18	29	17
Total Hepta-Furans	38998-75-3	7.5	21	2.2 J	10.9	20	21	10	37	42	18
Total Hepta-Dioxins	37871-00-4	12	35	3.9 J	22.6	42	33	23	80	89	38

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Chemical Name	CAS No.	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104	SS105	SS106
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	8330	7840	6950	5950	5370	5210	5730	4990	5320	6710
Antimony	7440-36-0	0.65 U	0.76	0.67 U	0.63 U	0.59 U	0.63 U	0.61 U	0.63 U	0.63 U	0.67 U
Arsenic	7440-38-2	4.3 J	9.1 J	5.9 J	3.4 J	3 J	3.2 J	2.5 J	3.4 J	6.5 J	6.4 J
Barium	7440-39-3	130	276	125	105	58.8	185	99.2	117	89.9	119
Beryllium	7440-41-7	0.37 J	0.33 J	0.27 J	0.24 J	0.29 J	0.28 J	0.23 J	0.3 J	0.34 J	0.39 J
Cadmium	7440-43-9	0.27 J	0.73 J	1.1	0.26 J	0.26 J	0.8 J	1.1	0.87	0.47 J	0.55 J
Calcium	7440-70-2	2120	4880	4780	5200	10600	3070	6550	30300	9360	2700
Chromium	7440-47-3	11.2	15.4	9.6	9.1	8.3	9.6	8.6	8.5	7.2	9.4
Cobalt	7440-48-4	5.2 J	5.9	4.4 J	3.9 J	4.2 J	4.4 J	4 J	4 J	4.1 J	4.6 J
Copper	7440-50-8	13.6	92.8	16.7	12.1	13.3	16.6	11.4	16	23	32.3
Cyanide	57-12-5	2.4 U	2.5 U	2.4 U	2.3 U	2.3 U	2.4 U	2.3 U	2.4 U	2.4 U	2.5 U
Iron	7439-89-6	13200	12800	12300	10400	9080	8920	9480	8870	7780	10800
Lead	7439-92-1	200	611	139	80.5	66.5	995	228	509	148	175
Magnesium	7439-95-4	1970	2210	2050	2150	5260	1910	2700	17300	2490	1740
Manganese	7439-96-5	374	530	845	587	484	365	399	419	387	400
Mercury	7439-97-6	0.32	0.19	0.18	0.18	0.16	0.45	0.3	0.32	0.26	0.28
Nickel	7440-02-0	10.8	12	9	8.8	9.3	11.1	10.6	9.1	8.3	11.5
Potassium	9-7-7440	742	944	864	662	569 J	457 J	437 J	630	528 J	545 J
Selenium	7782-49-2	0.29 J	0.45 J	0.26 J	0.27 J	0.08 J	0.09 J	0.08 J	0.12 J	0.21 J	0.37 J
Silver	7440-22-4	1.2 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
Sodium	7440-23-5	611 U	614 U	627 U	587 U	259 J	596 U	549 U	223 J	602 U	612 U
Thallium	7440-28-0	0.11	0.1 U	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.1 U
Vanadium	7440-62-2	17.6	17.6	16.1	14.1	11.3	10.3	11.9	10.7	12.7	18.8
Zinc	7440-66-6	108	342	76.2	54	54.3	398	118	214	101	178

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.25 U	6.25 U	6.25 U	6.17 U	2.01 J	1.87 J	6.02 U	1.93 J	1.91 J	2.42 J
4-Chlorobenzotrifluoride	98-56-6	6.25 U	6.25 U	6.25 U	6.17 U	3.1 J	6.02 U	6.02 U	6.1 U	6.17 U	6.33 U
1-Bromo-2-chloroethane	107-04-0	6.25 U	6.25 U	6.25 U	6.17 U	5.95 U	6.02 U	6.02 U	6.1 U	6.17 U	6.33 U
1,3-Dibromobenzene	108-36-1	6.25 U	6.25 U	6.25 U	6.17 U	5.95 U	6.02 U	6.02 U	6.1 U	6.17 U	6.33 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	100 J	210 U
1,2,4,5-Tetrachlorobenzene	95-94-3	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2,2'-oxybis(1-Chloropropane)	108-60-1	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2,4,5-Trichlorophenol	95-95-4	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2,4,6-Trichlorophenol	88-06-2	100 U	94 U	200 U	200 U	95 U	95 U	95 U	48 U	210 U	100 U
2,4-Dichlorophenol	120-83-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2,4-Dimethylphenol	105-67-9	130 U	120 U	210 U	210 U	120 U	120 U	120 U	60 U	210 U	120 U
2,4-Dinitrophenol	51-28-5	420 U	380 U	410 U	400 U	380 U	390 U	390 U	200 U	410 U	410 U
2,4-Dinitrotoluene	121-14-2	13 U	12 U	25 U	24 U	12 U	12 U	12 U	6 U	120 U	8.1 J
2,6-Dinitrotoluene	606-20-2	13 U	12 U	25 U	24 U	12 U	12 U	12 U	6 U	120 U	12 U
2-Chloronaphthalene	91-58-7	150 U	140 U	210 U	210 U	140 U	140 U	140 U	72 U	210 U	150 U
2-Chlorophenol	95-57-8	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2-Methylnaphthalene	91-57-6	18 J	14 J	37	11 J	15 J	20	23	22	1300 J	65
2-Methylphenol	95-48-7	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
2-Nitroaniline	88-74-4	420 U	380 U	410 U	400 U	380 U	390 U	390 U	390 U	410 U	410 U
2-Nitrophenol	88-75-5	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
3,3'-Dichlorobenzidine	91-94-1	42 U	39 U	81 U	81 U	39 U	39 U	39 U	20 U	210 U	41 U
3-Nitroaniline	99-09-2	420 U	380 U	410 U	400 U	380 U	390 U	390 U	390 U	410 U	410 U
4,6-Dinitro-2-methylphenol	534-52-1	420 U	380 U	410 U	400 U	380 U	390 U	390 U	390 U	410 U	410 U
4-Bromophenyl-phenylether	101-55-3	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
4-Chloro-3-methylphenol	59-50-7	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
4-Chloroaniline	106-47-8	220 U	200 U	210 U	210 U	200 U	200 U	200 U	180 U	210 U	210 U
4-Chlorophenyl-phenylether	7005-72-3	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
4-Methylphenol	106-44-5	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
4-Nitroaniline	100-01-6	420 U	380 U	410 U	400 U	380 U	390 U	390 U	390 U	410 U	410 U
4-Nitrophenol	100-02-7	420 U	380 U	410 U	400 U	380 U	390 U	390 U	390 U	410 U	410 U

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	21 U	19 U	20 U	20 U	19 U	20 U	20 U	20 U	14 J	9.2 J
Acenaphthylene	208-96-8	21 U	19 U	20 U	20 U	19 U	20 U	20 U	20 U	49 J	7.5 J
Acetophenone	98-86-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Anthracene	120-12-7	9 J	7.2 J	9.8 J	13 J	19 U	20 U	20 U	20 U	100 J	25 J
Atrazine	1912-24-9	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Benzaldehyde	100-52-7	94 J	200	490	100 J	130 J	160 J	370	290	380	620
Benzo(a)anthracene	56-55-3	90 J	33	76	160 J	38	35	34 J	26	570	110
Benzo(a)pyrene	50-32-8	91 J	30 J	65 J	140 J	40 J	37 J	32 J	27 J	450 J	92 J
Benzo(b)fluoranthene	205-99-2	150 J	47 J	110	210 J	61 J	54 J	50 J	42 J	650 J	150 J
Benzo(g,h,i)perylene	191-24-2	36	20	53	63	27	21	22	20 U	290 J	55
Benzo(k)fluoranthene	207-08-9	40 J	14 J	44 J	42	20 J	22 J	19 J	12 J	190 J	38 J
bis(2-Chloroethoxy)methane	111-91-1	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
bis(2-Chloroethyl)ether	111-44-4	13 UJ	12 UJ	25 UJ	24 UJ	12 UJ	12 UJ	12 UJ	6 UJ	120 UJ	12 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	220 U	200 U	210 U	210 U	200 U	200 U	200 U	400	210 U	210 U
Butylbenzylphthalate	85-68-7	16 J	8.5 J	31 J	210 U	7.8 J	8.5 J	9.7 J	200 U	210 U	15 J
Caprolactam	105-60-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Carbazole	86-74-8	11 J	2.7 J	10 J	11 J	2.5 J	2.5 J	2.1 J	1.3 J	47 J	15 J
Chlorophenols	58-90-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Chrysene	218-01-9	68	40	85	150	47	43	41	33	520 J	120
Dibenz(a,h)anthracene	53-70-3	14 J	5.9 J	11 J	20 U	5.4 J	4.2 J	4.1 J	2.6 J	72	15 J
Dibenzofuran	132-64-9	220 U	200 U	13 J	210 U	200 U	200 U	200 U	200 U	380	24 J
Diethylphthalate	84-66-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Dimethylphthalate	131-11-3	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Di-n-butylphthalate	84-74-2	10 J	8.2 J	27 J	10 J	8.9 J	8.6 J	7.2 J	6.9 J	210 U	9.6 J
Di-n-octylphthalate	117-84-0	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Fluoranthene	206-44-0	110 J	61 J	140 J	190 J	71 J	71 J	64 J	43	780	180
Fluorene	86-73-7	21 U	19 U	20 U	20 U	19 U	20 U	20 U	20 U	55 J	21 U
Hexachlorobenzene	118-74-1	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Hexachlorobutadiene	87-68-3	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Hexachlorocyclopentadiene	77-47-4	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Hexachloroethane	67-72-1	220 U	200 U	210 U	210 U	200 U	200 U	200 U	120 U	210 U	210 U
Indeno(1,2,3-cd)pyrene	193-39-5	90 J	25 J	60	120 J	34 J	25 J	26 J	20	350 J	84 J
Isophorone	78-59-1	220 U	200 U	210 U	210 U	200 U	200 U	200 U	180 U	210 U	210 U
Naphthalene	91-20-3	34 J	20 J	31 J	18 J	16 J	17 J	22	19 J	820	54 J
Nitrobenzene	98-95-3	89 U	82 U	170 U	170 U	83 U	83 U	83 U	42 U	210 U	87 U
N-Nitroso-di-n-propylamine	621-64-7	13 UJ	12 UJ	25 UJ	24 UJ	12 UJ	12 UJ	12 UJ	6 UJ	120 UJ	12 UJ
N-Nitrosodiphenylamine	86-30-6	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Pentachlorophenol	87-86-5	42 UJ	39 UJ	41 UJ	41 UJ	39 UJ	39 UJ	39 UJ	20 UJ	42 UJ	41 UJ
Phenanthrene	85-01-8	67 J	41 J	68	73 J	37 J	40 J	40 J	34 J	920	140
Phenol	108-95-2	220 U	200 U	210 U	210 U	200 U	200 U	200 U	200 U	210 U	210 U
Pyrene	129-00-0	99	55	110	240 J	62	62	52	41	720	170

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
1-Bromo-3-fluorobenzene	1073-06-9	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
2-Bromopyridine	109-04-6	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
1-Bromo-4-ethylbenzene	1585-07-5	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
Benzo(e)pyrene	192-97-2	427 U	417 U	417 U	160 J	397 U	402 U	402 U	407 U	330 J	422 U
Perylene	198-55-0	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	103 J	422 U
2-Chloro-6-fluorophenol	2040-90-6	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
3-Bromoacetophenone	2142-63-4	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
11H-Benzo(b)fluorene	30777-19-6	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
3,4-Dichlorobenzotrifluoride	328-84-7	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
4-Bromofluorobenzene	460-00-4	427 U	417 U	417 U	412 U	397 U	402 U	402 U	407 U	412 U	422 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.813 R	1.8 R	2.76 R	1.13 R	0.58 J	0.75 J	0.56 J	0.66 J	0.99 R	0.99 R
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	1.8 J	4.2 J	4.9 J	2.8 J	1.96 J	3.2 J	2.2 J	2.3 J	9.4	7.6
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.936 JN	1.9 J	3.4 J	1.8 J	0.65 J	0.8 J	0.83 J	0.79 J	1.6 J	1.6 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	1.36 J	2.9 J	3.8 J	2 J	1.1 J	1.9 J	1.3 J	1.3 J	3.9 J	3.9 J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.277 JN	0.712 JN	0.948 JN	0.55 J	0.198 JN	0.252 JN	0.228 JN	0.347	0.87 J	0.828 JN
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.9 U	0.788 JN	0.64 J	0.606 JN	0.258 JN	0.311 JN	0.338 JN	0.365 JN	0.28 J	1.23 JN
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	1 J	1.6 J	2.1 J	0.95 J	0.547 JN	1.1 J	0.62 J	0.434 JN	1.1 J	1.4 J
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	20.2	22.6	32.1	112	9.4 J	14.6	10.9	9.6 J	12	19.8
Total Pentachlorodibenzo-p-dioxin	36088-22-9	3.9	8.3	13	5.6	3.8	4	2.7	3.1	4.7	6.8
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.204 JN	0.35 J	0.48 J	0.23 U	0.29 J	0.18 J	0.413 JN	0.19 U	0.23 U	0.25 J
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.44 J	0.77 J	1.3 J	0.52 JN	0.18 U	0.712 JN	0.588 JN	0.3 J	8.96 JN	1.72 JN
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.54 J	0.972 JN	1.3 J	0.606 JN	0.334 JN	0.49 J	0.358 JN	0.269 JN	0.45 J	0.929 JN
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.92 J	1.9 J	2.6 J	1.1 J	0.54 J	1.1 J	0.64 J	0.75 J	1.3 J	1.8 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.87 JN	1.53 J	1.93 J	1.03 JN	0.478 J	0.862 JN	0.582 J	0.486 J	0.813 J	1.7 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.48 J	0.85 J	1.3 JN	0.948 JN	0.523 JN	1.77 J	0.478 JN	0.604 JN	0.742 JN	0.834 JN
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.2	11	17	10	3.9 J	6.8	4.5	3.8 J	7.7	10.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	21	42	36.7	19	10	17	10	10.7	12	21
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	220	236	246	148	88	135	87	91	103	160
Total TCDF	55722-27-5	30	77	92	43	35	65	37	42	120	140
Total Tetra-Dioxins	41903-57-5	4.2	8.5	12	15	5.8	8	2.5	2.8	4	7.8
Total Penta-Furans	30402-15-4	25	66	71	43	35	63	39	41	150	150
Total Hexa-Furans	55684-94-1	18	42	48	29	19	35	23	22	82	73
Total Hexa-Dioxins	34465-46-8	9.8	17	25	13	6.7	9	6.8	6.7	11	21
Total Hepta-Furans	38998-75-3	17	26	38	23	9.4	17	12	9.5	19	27
Total Hepta-Dioxins	37871-00-4	67	83	76	42	19	33	21	22	27	44

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Chemical Name	CAS No.	SS107	SS108	SS109	SS110	SS111	SS112	SS113	SS114	SS115	SS116
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	7200	6680	6520	6440	5890	6550	5870	7010	3750	6220
Antimony	7440-36-0	0.46 J	0.51 J	0.51 J	0.64 U	0.61 U	0.64 U	0.63 U	0.67 U	0.64 U	0.68 U
Arsenic	7440-38-2	4.9 J	5.8 J	5.7 J	6.4 J	6.8 J	4.4 J	3.1 J	3 J	6.3 J	8.6 J
Barium	7440-39-3	154	296	194	94.2	45.7	56.1	46.2	139	62.3	74.5
Beryllium	7440-41-7	0.32 J	0.33 J	0.35 J	0.38	0.29 J	0.28 J	0.26 J	0.38 J	0.33 J	0.34 J
Cadmium	7440-43-9	0.6 J	1.1	0.96	0.35 J	0.28 J	0.25 J	0.23 J	0.19 J	0.33 J	0.4 J
Calcium	7440-70-2	2140	3430	4450	3710	1890	1660	4690	4120	48200	3840
Chromium	7440-47-3	10.6	11.5	11.9	8.4	8	7.6	7	10.8	6.1	9.5
Cobalt	7440-48-4	4.3 J	4.9 J	4.5 J	4.4 J	4.5 J	4 J	3.3 J	5.8	3.1 J	4.6 J
Copper	7440-50-8	33.3	50.7	26.8	17.9	9.1	10.9	9.2	20.7	19.5	18.6
Cyanide	57-12-5	2.5 U	2.5 U	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	2.4 U	2.3 U	2.5 U
Iron	7439-89-6	10300	9880	9730	9010	8650	9290	9030	10100	9630	10600
Lead	7439-92-1	234	433	280	163	24.5	45.1	32.4	224	99	126
Magnesium	7439-95-4	1690	1740	1770	2350	1840	1830	3040	2360	18100	2080
Manganese	7439-96-5	533	394	376	424	400	417	325	372	261	350
Mercury	7439-97-6	0.34	0.38	0.34	0.28	0.11 U	0.12 U	0.12 U	0.12 U	0.11 U	0.18
Nickel	7440-02-0	9.5	10.9	9.4	9.9	9.7	9.3	8.2	11	8.3	9.5
Potassium	9-7-7440	612	712	580 J	696	401 J	436 J	444 J	513 J	802	732
Selenium	7782-49-2	0.42 J	0.44 J	0.64 J	0.36 J	0.13 J	0.11 J	0.11 J	0.74 U	0.11 J	0.26 J
Silver	7440-22-4	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sodium	7440-23-5	611 U	584 U	615 U	582 U	573 U	580 U	580 U	594 U	576 U	607 U
Thallium	7440-28-0	0.1 U	0.1 U	0.1 U	0.09 U	0.09 U	0.09 U	0.09 U	0.1 U	0.09 U	0.1 U
Vanadium	7440-62-2	13.5	13.3	12.6	16.7	10.5	11.3	10.9	12.9	11.9	12.4
Zinc	7440-66-6	165	258	264	109	29.6	41.4	261	141	152	88.6

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.1 U	2.48 J	6.1 U	2.64 J	6.17 U	6.1 U	6.1 U	1.65 J	6.1 U	6.02 U
4-Chlorobenzotrifluoride	98-56-6	6.1 U	6.25 U	6.1 U	6.25 U	6.17 U	6.1 U	6.1 U	6.02 U	6.1 U	6.02 U
1-Bromo-2-chloroethane	107-04-0	6.1 U	6.25 U	6.1 U	6.25 U	6.17 U	6.1 U	6.1 U	6.02 U	6.1 U	6.02 U
1,3-Dibromobenzene	108-36-1	6.1 U	6.25 U	6.1 U	6.25 U	6.17 U	6.1 U	6.1 U		6.1 U	6.02 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
1,2,4,5-Tetrachlorobenzene	95-94-3	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
2,2'-oxybis(1-Chloropropane)	108-60-1	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
2,4,5-Trichlorophenol	95-95-4	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
2,4,6-Trichlorophenol	88-06-2	48 U	100 U	95 U	49 U	38 U	210 U	200 U	210 U	210 U	200 U
2,4-Dichlorophenol	120-83-2	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
2,4-Dimethylphenol	105-67-9	60 U	120 U	120 U	62 U	48 U	210 U	200 U	210 U	210 U	200 U
2,4-Dinitrophenol	51-28-5	200 U	410 U	390 U	210 UJ	160 UJ	410 U	390 U	400 U	400 U	390 U
2,4-Dinitrotoluene	121-14-2	6 U	12 U	12 U	6.2 U	4.8 U	38 U	60 U	36 U	37 U	7.7 J
2,6-Dinitrotoluene	606-20-2	6 U	12 U	12 U	6.2 U	4.8 UJ	38 UJ	60 UJ	36 UJ	37 UJ	59 UJ
2-Chloronaphthalene	91-58-7	72 U	150 U	140 U	74 U	58 U	210 U	200 U	210 U	210 U	200 U
2-Chlorophenol	95-57-8	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
2-Methylnaphthalene	91-57-6	16 J	23	12 J	13 J	20 U	16 J	20 U	22	18 J	31 J
2-Methylphenol	95-48-7	200 U	210 U	200 U	210 UJ	210 U	210 U	200 U	210 U	210 U	200 U
2-Nitroaniline	88-74-4	390 U	410 U	390 U	400 U	400 U	410 U	390 U	400 U	400 U	390 U
2-Nitrophenol	88-75-5	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
3,3'-Dichlorobenzidine	91-94-1	20 U	41 U	39 U	20 U	16 U	120 U	200 U	120 U	120 U	200 U
3-Nitroaniline	99-09-2	390 U	410 U	390 U	400 U	400 U	410 U	390 U	400 U	400 U	390 U
4,6-Dinitro-2-methylphenol	534-52-1	390 U	410 U	390 U	400 U	400 U	410 U	390 U	400 U	400 U	390 U
4-Bromophenyl-phenylether	101-55-3	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
4-Chloro-3-methylphenol	59-50-7	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
4-Chloroaniline	106-47-8	180 U	210 U	200 U	180 U	140 U	210 U	200 U	210 U	210 U	200 U
4-Chlorophenyl-phenylether	7005-72-3	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
4-Methylphenol	106-44-5	200 U	210 U	200 U	210 UJ	210 U	210 U	200 U	210 U	210 U	200 U
4-Nitroaniline	100-01-6	390 U	410 U	390 U	400 U	400 U	410 U	390 U	400 U	400 U	390 U
4-Nitrophenol	100-02-7	390 U	410 U	390 U	400 U	400 U	410 U	390 U	400 U	400 U	390 U

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	20 U	21 U	20 U	20 U	20 U	21 U	9.2 J	20 U	20 U	20 U
Acenaphthylene	208-96-8	20 U	21 U	20 U	20 U	20 U	38 J	59 J	37 J	21 J	39 J
Acetophenone	98-86-2	200 U	210 U	200 Y	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Anthracene	120-12-7	20 U	13 J	16 J	20 U	20 U	20 J	44	25	21 J	28 J
Atrazine	1912-24-9	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Benzaldehyde	100-52-7	150 J	260	300	200 J	130 J	420	530	550	540	360
Benzo(a)anthracene	56-55-3	31 J	53 J	100	56	51	290 J	530 J	320 J	230 J	400 J
Benzo(a)pyrene	50-32-8	29 J	39 J	64	46	41	250 J	490 J	230 J	210 J	350 J
Benzo(b)fluoranthene	205-99-2	50 J	59 J	90	74	61	360 J	720 J	370 J	310 J	520 J
Benzo(g,h,i)perylene	191-24-2	20 U	25	59	40	24	150	280 J	140	130	230 J
Benzo(k)fluoranthene	207-08-9	12 J	17 J	29	22	24	130	240 J	110	86	170
bis(2-Chloroethoxy)methane	111-91-1	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
bis(2-Chloroethyl)ether	111-44-4	6 UJ	12 UJ	12 U	6.2 U	0.85 J	38 U	60 U	36 U	37 U	59 U
bis(2-Ethylhexyl)phthalate	117-81-7	200 U	220	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Butylbenzylphthalate	85-68-7	14 J	21 J	11 J	210 U	95 J	14 J	22 J	210 U	210 U	13 J
Caprolactam	105-60-2	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Carbazole	86-74-8	2.5 J	9.6 J	8.5 J	6.5 J	5.8 J	22 J	35 J	24 J	21 J	28 J
Chlorophenols	58-90-2	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Chrysene	218-01-9	28	53	100	80	62	310 J	520 J	350 J	240 J	410 J
Dibenz(a,h)anthracene	53-70-3	5.1 J	4.9 J	4.4 J	2.5 J	4.3 J	34	70	34	30	50
Dibenzofuran	132-64-9	200 U	210 U	200 U	210 U	210 U	9.6 J	14 J	13 J	8.3 J	11 J
Diethylphthalate	84-66-2	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Dimethylphthalate	131-11-3	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Di-n-butylphthalate	84-74-2	200 U	9.6 J	7.9 J	210 U	23 J	15 J	16 J	16 J	14 J	16 J
Di-n-octylphthalate	117-84-0	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Fluoranthene	206-44-0	40 J	120 J	120	86 J	65	430	690	430	290	500
Fluorene	86-73-7	20 U	21 U	20 U	20 U	20 U	11 J	20 U	14 J	9.9 J	12 J
Hexachlorobenzene	118-74-1	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Hexachlorobutadiene	87-68-3	200 U	210 U	200 U	210 U	0.97 J	210 U	200 U	210 U	210 U	200 U
Hexachlorocyclopentadiene	77-47-4	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Hexachloroethane	67-72-1	120 U	210 U	200 U	120 UJ	2.1 J	210 U	200 U	210 U	210 U	200 U
Indeno(1,2,3-cd)pyrene	193-39-5	29 J	28	65	44	30	190	380 J	180	170	290 J
Isophorone	78-59-1	180 U	210 U	200 U	180 UJ	1.1 J	210 U	200 U	210 U	210 U	200 U
Naphthalene	91-20-3	19 J	26 J	14 J	11 J	8.1 J	18 J	24 J	25 J	17 J	30 J
Nitrobenzene	98-95-3	42 U	87 U	83 U	43 U	34 U	210 U	200 U	210 U	210 U	200 U
N-Nitroso-di-n-propylamine	621-64-7	6 UJ	12 UJ	12 U	6.2 U	4.8 U	38 U	60 U	36 U	37 U	59 U
N-Nitrosodiphenylamine	86-30-6	200 U	210 U	200 U	210 U	1.2 J	210 U	200 U	210 U	210 U	200 U
Pentachlorophenol	87-86-5	20 UJ	41 UJ	390 U	400 U	41 UJ	42 UJ	40 UJ	41 UJ	41 UJ	40 UJ
Phenanthrene	85-01-8	28 J	95 J	81 J	49 J	40 J	160	280 J	190	160 J	200 J
Phenol	108-95-2	200 U	210 U	200 U	210 U	210 U	210 U	200 U	210 U	210 U	200 U
Pyrene	129-00-0	37 J	85	200 J	140	93	480 J	830 J	530 J	370 J	640 J

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
1-Bromo-3-fluorobenzene	1073-06-9	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
2-Bromopyridine	109-04-6	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
1-Bromo-4-ethylbenzene	1585-07-5	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
Benzo(e)pyrene	192-97-2	407 U	417 U	407 U	417 U	412 U	407 U	223 J	402 U	166 J	208 J
Perylene	198-55-0	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
2-Chloro-6-fluorophenol	2040-90-6	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
3-Bromoacetophenone	2142-63-4	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
11H-Benzo(b)fluorene	30777-19-6	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
3,4-Dichlorobenzotrifluoride	328-84-7	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
4-Bromofluorobenzene	460-00-4	407 U	417 U	407 U	417 U	412 U	407 U	407 U	402 U	407 U	402 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1.3 R	0.58 J	0.42 U	0.23 U						
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	5.8	3.2 J	1.4 J	2.1 J						
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.8 J	0.87 J	0.33 J	0.58 J						
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	2.8 J	1.7 J	0.424 JN	1.07 JN						
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.578 JN	0.45 J	0.18 U	0.377 JN						
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.59 J	0.26 J	0.21 U	0.259 JN						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.92 J	0.72 J	0.26 U	0.528 JN						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	16.8	7.5 J	3 J	4.8 J						
Total Pentachlorodibenzo-p-dioxin	36088-22-9	5.8	2.9	0.76	3.4						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.25 U	0.16 U	0.18 U	0.35 J						
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.799 JN	0.68 J	0.19 U	0.097 U						
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.56 J	0.44 J	0.19 U	0.35 J						
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.3 J	0.89 J	0.37 J	0.553 JN						
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.807 J	0.61 J	0.227 U	0.361 J						
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.963 JN	0.802 JN	0.994 JN	0.36 U						
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	11.7	4.1 J	1.5 J	2.6 J						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	18	8.4	3.3 J	6.7						
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	161	58	25	50.9						
Total TCDF	55722-27-5	76	41	19	32						
Total Tetra-Dioxins	41903-57-5	4.5	6.2	2.6	3.7						
Total Penta-Furans	30402-15-4	92	51	22	36						
Total Hexa-Furans	55684-94-1	52	29	12	20						
Total Hexa-Dioxins	34465-46-8	13	7.1	2	6.5						
Total Hepta-Furans	38998-75-3	31	9.8	4.7	6						
Total Hepta-Dioxins	37871-00-4	37	17	6.8	13						

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Chemical Name	CAS No.	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS126
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	5960	7750	7080	9660	8130	5820	5740	6250	6030	5620
Antimony	7440-36-0	0.63 U	0.67 U	0.64 U	0.66 U	0.65 U	0.66 U	0.65 U	0.66 U	0.66 U	0.64 U
Arsenic	7440-38-2	4.5 J	4.5 J	3.9 J	3.3 J	1.7 J	3.2 J	3.8 J	4.5 J	3.1 J	4.3 J
Barium	7440-39-3	35.6	61.8	60.6	44.6	68.1	76.7	105	121	417	144
Beryllium	7440-41-7	0.3 J	0.37 J	0.37 J	0.25 J	0.34 J	0.34 J	0.3 J	0.36 J	0.34 J	0.35 J
Cadmium	7440-43-9	0.3 J	0.25 J	0.21 J	0.17 J	0.2 J	0.25 J	0.44 J	0.52 J	0.43 J	1.5
Calcium	7440-70-2	1760	2090	1570	954	1900	3460	8230	2600	3120	9440
Chromium	7440-47-3	11.3	9	7	7.5	8.8	7.2	8.2	8.8	11	10.2
Cobalt	7440-48-4	4.6 J	5.9	5.5	3.3 J	4.9 J	5.6 J	4.2 J	5.1 J	5 J	5.2 J
Copper	7440-50-8	6	7.8	6.1	3.9	17.1	20.3	18.5	16.9	11	14.8
Cyanide	57-12-5	2.4 U	2.5 U	2.4 U	2.5 U	2.4 U	2.5 U	2.4 U	2.4 U	2.4 U	2.3 U
Iron	7439-89-6	8770	10800	9000	9130	13700	21600	10200	9320	10700	10100
Lead	7439-92-1	25	46.7	17.9	11.6	51.4	79	236	255	497	1100
Magnesium	7439-95-4	1750	2130	1880	1380	2090	1730	2610	1670	2090	3670
Manganese	7439-96-5	321	369	355	135	725	681	546	484	732	459
Mercury	7439-97-6	0.14	0.12 U	0.12 U	0.14	0.12 U	0.24	0.35	0.38	0.3	0.46
Nickel	7440-02-0	9.5	10.8	9.1	9	11.1	9.9	9.2	8.1	9.1	10.5
Potassium	9-7-7440	373 J	705	649	326 J	388 J	640	516 J	789	438 J	460 J
Selenium	7782-49-2	0.23 J	0.19 J	0.18 J	0.29 J	0.72 U	0.15 J	0.23 J	0.27 J	0.13 J	0.16 J
Silver	7440-22-4	1.2 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	1.2 U
Sodium	7440-23-5	586 U	607 U	562 U	584 U	579 U	610 U	600 U	587	602 U	579 U
Thallium	7440-28-0	0.09 U	0.1 U	0.09 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	7440-62-2	10.8	13.9	11	11.1	15.9	13.1	12	12.5	13.1	12.8
Zinc	7440-66-6	61.3	41.5	26.3	31.4	40.1	36.1	91.7	83.6	213	441

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.1 U	6.1 U	5.95 U	5.88 U	6.76 U	6.17 U	6.1 U	6.49 U	6.33 U	6.76 U
4-Chlorobenzotrifluoride	98-56-6	6.1 U	6.1 U	5.95 U	5.88 U	6.76 U	6.17 U	6.1 U	6.49 U	6.33 U	6.76 U
1-Bromo-2-chloroethane	107-04-0	6.1 U	6.1 U	5.95 U	5.88 U	6.76 U	6.17 U	6.1 U	6.49 U	6.33 U	6.76 U
1,3-Dibromobenzene	108-36-1	6.1 U	6.1 U	5.95 U	5.88 U	6.76 U	6.17 U	6.1 U	6.49 U	6.33 U	6.76 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	200 U	200 U	200 U	1900 U	2100 U	17 J	200 U	220 U	180 U	220 U
1,2,4,5-Tetrachlorobenzene	95-94-3	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
2,2'-oxybis(1-Chloropropane)	108-60-1	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
2,4,5-Trichlorophenol	95-95-4	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
2,4,6-Trichlorophenol	88-06-2	96 U	200 U	200 U	270 U	2000 U	210 U	98 U	220 U	97 U	220 U
2,4-Dichlorophenol	120-83-2	200 U	200 U	200 U	1700 U	2100 U	210 U	200 U	220 U	180 U	220 U
2,4-Dimethylphenol	105-67-9	120 U	200 U	200 U	340 U	2100 U	210 U	120 U	220 U	120 U	220 U
2,4-Dinitrophenol	51-28-5	390 U	380 U	390 U	1200 UJ	4100 U	410 U	380 U	430 U	350 U	440 U
2,4-Dinitrotoluene	121-14-2	12 U	200 U	93 U	34 U	250 U	62 U	12 U	52 U	12 U	53 U
2,6-Dinitrotoluene	606-20-2	12 UJ	200 U	93 UJ	34 UJ	250 UJ	62 UJ	12 UJ	52 UJ	12 UJ	53 UJ
2-Chloronaphthalene	91-58-7	140 U	200 U	200 U	410 U	2100 U	210 U	150 U	220 U	150 U	220 U
2-Chlorophenol	95-57-8	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
2-Methylnaphthalene	91-57-6	9.9 J	29 J	18 J	19 U	96	210 J	12 J	33 J	15 J	26
2-Methylphenol	95-48-7	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
2-Nitroaniline	88-74-4	390 U	380 U	390 U	3700 U	4100 U	410 U	380 U	430 U	350 U	440 U
2-Nitrophenol	88-75-5	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
3,3'-Dichlorobenzidine	91-94-1	40 U	200 U	200 U	110 U	820 U	200 U	40 U	170 U	40 U	180 U
3-Nitroaniline	99-09-2	390 U	380 U	390 U	3700 U	4100 U	410 U	380 U	430 U	350 U	440 U
4,6-Dinitro-2-methylphenol	534-52-1	390 U	380 U	390 U	3700 U	4100 U	410 U	380 U	430 U	350 U	440 U
4-Bromophenyl-phenylether	101-55-3	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
4-Chloro-3-methylphenol	59-50-7	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
4-Chloroaniline	106-47-8	200 U	200 U	200 U	1000 U	2100 U	210 U	200 U	220 U	180 U	220 U
4-Chlorophenyl-phenylether	7005-72-3	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	20 J	180 U	220 U
4-Methylphenol	106-44-5	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
4-Nitroaniline	100-01-6	390 U	380 U	390 U	3700 U	4100 U	410 U	380 U	430 U	350 U	440 U
4-Nitrophenol	100-02-7	390 U	380 U	390 U	3400 U	4100 U	410 U	380 U	430 U	350 U	440 U

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	20 U	17 J	7.8 J	62 J	94 J	21 U	19 U	10 J	18 U	22 U
Acenaphthylene	208-96-8	8.6 J	29 J	20 J	21	2400	47 J	7 J	24 J	18 U	13 J
Acetophenone	98-86-2	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Anthracene	120-12-7	20 U	67 J	46	380 J	930 J	35 J	8.4 J	49 J	18 U	26
Atrazine	1912-24-9	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Benzaldehyde	100-52-7	380	530	380	450 J	470 J	270	140 J	280	250	830
Benzo(a)anthracene	56-55-3	100	1100 J	520 J	3500 J	15000 J	500 J	96	390 J	75	350 J
Benzo(a)pyrene	50-32-8	86	1100 J	510 J	3300 J	14000 J	510 J	100	410 J	82	370 J
Benzo(b)fluoranthene	205-99-2	140	1400 J	760 J	4400 J	21000 J	780 J	160	610 J	120	540 J
Benzo(g,h,i)perylene	191-24-2	55	720 J	330 J	2400 J	10000 J	350 J	64	280 J	52	280 J
Benzo(k)fluoranthene	207-08-9	45	510 J	210 J	1400 J	6400 J	260 J	51	170	31	160
bis(2-Chloroethoxy)methane	111-91-1	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
bis(2-Chloroethyl)ether	111-44-4	12 U	200 U	93 U	34 U	250 U	62 U	12 U	52 U	12 U	53 U
bis(2-Ethylhexyl)phthalate	117-81-7	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	250	220 U
Butylbenzylphthalate	85-68-7	26 J	44 J	45 J	1900 U	89 J	34 J	17 J	220 U	180 U	91 J
Caprolactam	105-60-2	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Carbazole	86-74-8	7.2 J	22 J	36 J	210 J	1200 J	36 J	8.4 J	18 J	8.4 J	36 J
Chlorophenols	58-90-2	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Chrysene	218-01-9	120	930 J	500 J	3000 J	14000 J	510 J	100	420 J	89	380 J
Dibenz(a,h)anthracene	53-70-3	8.3 J	150	67	470 J	2700 J	90	8.5 J	70	9 J	55
Dibenzofuran	132-64-9	200 U	14 J	11 J	1900 U	200 J	50 J	200 U	16 J	180 U	13 J
Diethylphthalate	84-66-2	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	14 J	180 U	220 U
Dimethylphthalate	131-11-3	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Di-n-butylphthalate	84-74-2	16 J	21 J	20 J	1900 U	2100 U	19 J	13 J	220 U	180 U	22 J
Di-n-octylphthalate	117-84-0	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Fluoranthene	206-44-0	120	1300	610 J	4700	20000	580	97	400	92	460 J
Fluorene	86-73-7	20 U	26 J	16 J	110 J	590 J	16 J	19 U	21 U	18 U	10 J
Hexachlorobenzene	118-74-1	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Hexachlorobutadiene	87-68-3	200 U	200 U	200 U	1400 U	2100 U	210 U	200 U	220 U	180 U	220 U
Hexachlorocyclopentadiene	77-47-4	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Hexachloroethane	67-72-1	200 U	200 U	200 U	680 UJ	2100 U	210 U	200 U	220 U	180 U	220 U
Indeno(1,2,3-cd)pyrene	193-39-5	67	860 J	390 J	2900 J	14000 J	460 J	80	330 J	69 J	330 J
Isophorone	78-59-1	200 U	200 U	200 U	1000 U	2100 U	210 U	200 U	220 U	180 U	220 U
Naphthalene	91-20-3	14 J	36 J	20	28	210 J	140	14 J	45 J	16 J	34 J
Nitrobenzene	98-95-3	84 U	200 U	200 U	240 U	1700 U	210 U	85 U	220 U	85 U	220 U
N-Nitroso-di-n-propylamine	621-64-7	12 U	200 U	93 U	34 U	250 U	62 U	12 U	52 U	12 U	53 U
N-Nitrosodiphenylamine	86-30-6	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Pentachlorophenol	87-86-5	40 UJ	39 UJ	39 UJ	38 UJ	42 UJ	42 UJ	39 UJ	43 UJ	36 UJ	44 UJ
Phenanthrene	85-01-8	53 J	350	270	2400	7100	330	57 J	230	52 J	210 J
Phenol	108-95-2	200 U	200 U	200 U	1900 U	2100 U	210 U	200 U	220 U	180 U	220 U
Pyrene	129-00-0	170	1700 J	860 J	5400 J	21000 J	660 J	140	580 J	140	640 J

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
1-Bromo-3-fluorobenzene	1073-06-9	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
2-Bromopyridine	109-04-6	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
1-Bromo-4-ethylbenzene	1585-07-5	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
Benzo(e)pyrene	192-97-2	407 U	518	315 J	1890	7650	133 J	103 J	244 J	422 U	187 J
Perylene	198-55-0	407 U	178 J	99.2 J	678	2440	412 U	407 U	433 U	422 U	450 U
2-Chloro-6-fluorophenol	2040-90-6	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
3-Bromoacetophenone	2142-63-4	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
11H-Benzo(b)fluorene	30777-19-6	407 U	137 J	397 U	528	3010	412 U	407 U	433 U	422 U	450 U
3,4-Dichlorobenzotrifluoride	328-84-7	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
4-Bromofluorobenzene	460-00-4	407 U	407 U	397 U	392 U	450 U	412 U	407 U	433 U	422 U	450 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9										
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4										
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9										
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5										
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9										
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6										
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7										
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0										
Total Pentachlorodibenzo-p-dioxin	36088-22-9										
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6										
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6										
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4										
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9										
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3										
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7										
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4										
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9										
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9										
Total TCDF	55722-27-5										
Total Tetra-Dioxins	41903-57-5										
Total Penta-Furans	30402-15-4										
Total Hexa-Furans	55684-94-1										
Total Hexa-Dioxins	34465-46-8										
Total Hepta-Furans	38998-75-3										
Total Hepta-Dioxins	37871-00-4										

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Chemical Name	CAS No.	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	6000	6720	6780	5710	5110	6210	4850	5080	5120	5150
Antimony	7440-36-0	0.65 U	0.63 U	0.63 U	0.62 U	0.7 U	0.78	0.65 U	0.48 J	0.64 U	0.73 U
Arsenic	7440-38-2	2.7 J	3.7 J	3.8 J	2.8 J	4 J	9.7 J	4.1 J	6.9 J	5.3 J	5.3 J
Barium	7440-39-3	63.8	76.9	94	78.6	65.1	155	57.3	92.9	60	81.3
Beryllium	7440-41-7	0.27 J	0.37	0.32 J	0.33 J	0.29 J	0.41	0.32 J	0.47	0.28 J	0.27 J
Cadmium	7440-43-9	0.24 J	0.35 J	0.46 J	0.49 J	0.74 J	0.47 J	0.43 J	0.34 J	0.27 J	0.54 J
Calcium	7440-70-2	1870	7700	5470	6280	13800	4790	8850	6500	13700	4660
Chromium	7440-47-3	7.3	9	8.8	7.7	10.7	8.5	6.4	7.8	8.5	13.7
Cobalt	7440-48-4	4.3 J	5.7	4.6 J	4.6 J	3.7 J	3.7 J	4.7 J	3.6 J	5.1 J	4 J
Copper	7440-50-8	7.7	13.4	16.8	13.2	23.3	26.4	11.8	19.3	16.9	25.3
Cyanide	57-12-5	2.4 U	2.3 U	2.3 U	2.3 U	2.6 U	2.5 U	2.4 U	2.5 U	2.4 U	2.7 U
Iron	7439-89-6	9220	11600	10700	9840	9170	13500	8040	8070	9070	9530
Lead	7439-92-1	50.5	371	254	117	255	195	64.8	84.7	100	170
Magnesium	7439-95-4	1670	3480	3250	3280	5930	2250	2510	2060	3390	2230
Manganese	7439-96-5	476	547	495	494	354	316	313	275	398	364
Mercury	7439-97-6	0.16	0.57	0.41	0.14	0.54	0.28	0.29	0.52	0.11 U	0.82
Nickel	7440-02-0	8.1	11.2	10.2	10.5	11.2	10.6	9.9	9.6	11	10.4
Potassium	9-7-7440	319 J	519 J	571	534 J	590 J	601 J	544 J	605 J	631	598 J
Selenium	7782-49-2	0.11 J	0.1 J	0.1 J	0.69 U	0.16 J	0.23 J	0.13 J	0.24 J	0.71 U	0.41 J
Silver	7440-22-4	1.2 U	1.1 U	1.1 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U
Sodium	7440-23-5	583 U	229 J	256 J	585 U	631 U	614 U	582 U	623 U	594 U	671 U
Thallium	7440-28-0	0.1 U	0.09 U	0.09 U	0.09 U	0.1 U	0.11 J	0.1 U	0.1 U	0.09 U	0.11 U
Vanadium	7440-62-2	12.6	15	14.3	11.7	13	15.3	10.2	15.2	11	11.4
Zinc	7440-66-6	34.5	167	106	120	174	170	155	95.3	88.3	158

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Volatile Organic Compounds (µg/kg)												
1,1,1-Trichloroethane	71-55-6											
1,1,2,2-Tetrachloroethane	79-34-5											
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1											
1,1,2-Trichloroethane	79-00-5											
1,1-Dichloroethane	75-34-3											
1,1-Dichloroethene	75-35-4											
1,2,3-Trichlorobenzene	87-61-6											
1,2,4-Trichlorobenzene	120-82-1											
1,2-Dibromo-3-chloropropane	96-12-8											
1,2-Dibromoethane	106-93-4											
1,2-Dichlorobenzene	95-50-1											
1,2-Dichloroethane	107-06-2											
1,2-Dichloropropane	78-87-5											
1,3-Dichlorobenzene	541-73-1											
1,4-Dichlorobenzene	106-46-7											
1,4-Dioxane	123-91-1											
2-Butanone	78-93-3											
2-Hexanone	591-78-6											
4-Methyl-2-pentanone	108-10-1											
Acetone	67-64-1											
Benzene	71-43-2											
Bromodichloromethane	75-27-4											
Bromoform	75-25-2											
Bromomethane	74-83-9											
Carbon Disulfide	75-15-0											
Carbon Tetrachloride	56-23-5											
Chlorobenzene	108-90-7											
Chlorobromomethane	74-97-5											
Chloroethane	75-00-3											
Chloroform	67-66-3											
Chloromethane	74-87-3											
cis-1,2-Dichloroethene	156-59-2											
cis-1,3-Dichloropropene	10061-01-5											
Cyclohexane	110-82-7											
Dibromochloromethane	124-48-1											
Dichlorodifluoromethane	75-71-8											
Ethylbenzene	100-41-4											
Isopropylbenzene	98-82-8											
m,p-Xylene	179601-23-1											
Methyl Acetate	79-20-9											
Methyl Tert-Butyl Ether	1634-04-4											
Methylene Chloride	75-09-2											

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Volatile Organic Compounds (µg/kg) (cont'd)												
Metylcyclohexane	108-87-2											
O-Xylene	95-47-6											
Styrene	100-42-5											
Tetrachloroethene	127-18-4											
Toluene	108-88-3											
trans-1,2-Dichloroethene	156-60-5											
trans-1,3-Dichloropropene	10061-02-6											
Trichloroethene	79-01-6											
Trichlorofluoromethane	75-69-4											
Vinyl Chloride	75-01-4											
Additional Target Volatile Organic Compounds (µg/kg)												
Fluorobenzene	462-06-6	6.94 U	6.25 U	6.85 U		6.02 U	6.1 U	6.17 U	6.1 U	5.68 U	6.17 U	6.25 U
4-Chlorobenzotrifluoride	98-56-6	6.94 U	6.25 U	6.85 U		6.02 U	6.1 U	6.17 U	6.1 U	5.68 U	6.17 U	6.25 U
1-Bromo-2-chloroethane	107-04-0	6.94 U	6.25 U	6.85 U		6.02 U	6.1 U	6.17 U	6.1 U	5.68 U	6.17 U	6.25 U
1,3-Dibromobenzene	108-36-1	6.94 U	6.25 U	6.85 U		6.02 U	6.1 U	6.17 U	6.1 U	5.68 U	6.17 U	6.25 U
Semi-Volatile Organic Compounds (µg/kg)												
1,1'-Biphenyl	92-52-4	9.4 J	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
1,2,4,5-Tetrachlorobenzene	95-94-3	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2,2'-oxybis(1-Chloropropane)	108-60-1	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2,4,5-Trichlorophenol	95-95-4	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2,4,6-Trichlorophenol	88-06-2	240 U	110 U	210 U	1000 U	200 U	210 U	200 U	100 U	45 U	48 U	190 U
2,4-Dichlorophenol	120-83-2	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2,4-Dimethylphenol	105-67-9	240 U	140 U	210 U	1300 U	200 U	210 U	210 U	120 U	56 U	60 U	200 U
2,4-Dinitrophenol	51-28-5	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	190 U	200 U	390 U
2,4-Dinitrotoluene	121-14-2	140 U	14 U	37 U	130 U	61 U	61 U	24 U	12 U	5.6 U	6 U	24 U
2,6-Dinitrotoluene	606-20-2	140 UJ	14 UJ	37 UJ	130 UJ	61 U	61 U	24 U	12 U	5.6 U	6 U	24 U
2-Chloronaphthalene	91-58-7	240 U	160 U	210 U	1500 U	200 U	210 U	210 U	150 U	67 U	72 U	200 U
2-Chlorophenol	95-57-8	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2-Methylnaphthalene	91-57-6	58 J	26 J	29 J	75	15 J	14 J	14 J	7.4 J	5.8 J	2.7 J	14 J
2-Methylphenol	95-48-7	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
2-Nitroaniline	88-74-4	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	370 U	390 U	390 U
2-Nitrophenol	88-75-5	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
3,3'-Dichlorobenzidine	91-94-1	240 U	45 U	120 U	410 U	200 U	200 U	80 U	41 U	18 U	20 U	79 U
3-Nitroaniline	99-09-2	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	370 U	390 U	390 U
4,6-Dinitro-2-methylphenol	534-52-1	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	370 U	390 U	390 U
4-Bromophenyl-phenylether	101-55-3	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
4-Chloro-3-methylphenol	59-50-7	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
4-Chloroaniline	106-47-8	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	170 U	180 U	200 U
4-Chlorophenyl-phenylether	7005-72-3	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
4-Methylphenol	106-44-5	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
4-Nitroaniline	100-01-6	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	370 U	390 U	390 U
4-Nitrophenol	100-02-7	460 U	450 U	410 U	4100 U	390 U	400 U	400 U	410 U	370 U	390 U	390 U

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Semi-Volatile Organic Compounds (µg/kg) (cont'd)												
Acenaphthene	83-32-9	27 J	22 U	20 U	41	20 UJ	20 UJ	20 UJ	21 J	18 UJ	20 UJ	20 UJ
Acenaphthylene	208-96-8	28 J	10 J	14 J	1100 J	64 J	69 J	24 J	14 J	7.7 J	6.1 J	19 J
Acetophenone	98-86-2	240 U	230 U	210 U	2100 U	49 J	54 J	41 J	44 J	38 J	37 J	54 J
Anthracene	120-12-7	95 J	12 J	21	650 J	34 J	32 J	16 J	7.2 J	2.7 J	4.7 J	19 J
Atrazine	1912-24-9	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Benzaldehyde	100-52-7	720	470	730	530 J	830	880	860	740	210	27 J	570
Benzo(a)anthracene	56-55-3	1300 J	130	270 J	9100 J	270 J	260	120 J	66 J	29 J	51 J	120 J
Benzo(a)pyrene	50-32-8	1300 J	140	230 J	9300 J	260	260	120 J	70 J	34 J	56 J	120 J
Benzo(b)fluoranthene	205-99-2	1900 J	210	340 J	13000 J	460 J	450	200 J	110 J	56 J	100 J	210
Benzo(g,h,i)perylene	191-24-2	900 J	100	150	5700 J	150 J	170 J	80 J	42 J	23 J	32 J	84 J
Benzo(k)fluoranthene	207-08-9	550 J	68	100	5000 J	160 J	130 J	67 J	37 J	16 J	24 J	67 J
bis(2-Chloroethoxy)methane	111-91-1	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
bis(2-Chloroethyl)ether	111-44-4	140 U	14 U	37 U	130 U	61 U	61 U	24 U	12 U	5.6 U	6 U	24 U
bis(2-Ethylhexyl)phthalate	117-81-7	240 U	230 U	210 U	2100 U	82 J	39 J	110 J	30 J	24 J	34 J	38 J
Butylbenzylphthalate	85-68-7	34 J	230 U	110 J	2100 U	13 J	210 U	210 U	10 J	190 U	10 J	200 U
Caprolactam	105-60-2	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Carbazole	86-74-8	160 J	10 J	22 J	840 J	45 J	41 J	18 J	8.4 J	4.6 J	7.7 J	21 J
Chlorophenols	58-90-2	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Chrysene	218-01-9	1200 J	140	290 J	8700 J	300	310	150 J	80 J	40 J	54 J	150 J
Dibenz(a,h)anthracene	53-70-3	180	26	32	1600 J	47 J	61 J	22 J	14 J	4.9 J	9.1 J	23 J
Dibenzofuran	132-64-9	48 J	9.1 J	11 J	110 J	10 J	8.9 J	9.2 J	210 U	190 U	200 U	7.2 J
Diethylphthalate	84-66-2	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Dimethylphthalate	131-11-3	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Di-n-butylphthalate	84-74-2	19 J	230 U	26 J	2100 U	6.5 J	210 U	210 U	210 U	15 J	7.1 J	7.2 J
Di-n-octylphthalate	117-84-0	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Fluoranthene	206-44-0	1500	140	330	14000	630	630	300	140 J	69 J	110 J	290
Fluorene	86-73-7	49 J	22 U	20 U	380 J	20 J	17 J	11 J	3.1 J	2 J	2.4 J	9.4 J
Hexachlorobenzene	118-74-1	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Hexachlorobutadiene	87-68-3	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Hexachlorocyclopentadiene	77-47-4	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Hexachloroethane	67-72-1	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	110 U	120 U	200 U
Indeno(1,2,3-cd)pyrene	193-39-5	1100 J	120	190	8000 J	240 J	270 J	100 J	56 J	29 J	53 J	110 J
Isophorone	78-59-1	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	170 U	180 U	200 U
Naphthalene	91-20-3	86	25 J	31 J	200 J	16 J	15 J	15 J	7.3 J	4.6 J	7.5 J	15 J
Nitrobenzene	98-95-3	240 U	95 U	210 U	880 U	200 U	210 U	170 U	87 U	39 U	42 U	170 U
N-Nitroso-di-n-propylamine	621-64-7	140 U	14 U	37 U	130 U	61 U	61 U	24 U	12 U	5.6 U	6 U	24 UJ
N-Nitrosodiphenylamine	86-30-6	240 U	230 U	210 U	2100 U	200 U	210 U	210 U	210 U	190 U	200 U	200 U
Pentachlorophenol	87-86-5	47 UJ	45 UJ	41 UJ	42 UJ	200 U	200 U	80 U	41 U	18 U	20 U	79 U
Phenanthrene	85-01-8	710	77	150	6300	310	280	170 J	65 J	35 J	51 J	150 J
Phenol	108-95-2	240 U	230 U	210 U	2100 U	11 J	12 J	9.8 J	210 U	190 U	200 U	11 J
Pyrene	129-00-0	1900 J	220	460 J	14000 J	560	520	250	130 J	63 J	99 J	250

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Additional Target Semi-Volatile Organic Compounds (µg/kg)												
1,4-Dibromobenzene	106-37-6	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
1-Bromo-3-fluorobenzene	1073-06-9	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
2-Bromopyridine	109-04-6	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
1-Bromo-4-ethylbenzene	1585-07-5	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
Benzo(e)pyrene	192-97-2	645	427 U	269 J	3150	220 J	139 J	107 J	407 U	379 U	412 U	417 U
Perylene	198-55-0	193 J	427 U	457 U	915	402 U	407 U	407 U	407 U	379 U	412 U	417 U
2-Chloro-6-fluorophenol	2040-90-6	463 UJ	427 UJ	457 UJ	427 UJ	402 U	407 U	407 U	407 U	379 U	412 U	417 U
3-Bromoacetophenone	2142-63-4	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
11H-Benzo(b)fluorene	30777-19-6	463 U	427 U	457 U	1200	402 U	407 U	407 U	407 U	379 U	412 U	417 U
3,4-Dichlorobenzotrifluoride	328-84-7	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
4-Bromofluorobenzene	460-00-4	463 U	427 U	457 U	427 U	402 U	407 U	407 U	407 U	379 U	412 U	417 U
Pesticides/PCB Aroclors (µg/kg)												
4,4'-DDD	72-54-8											
4,4'-DDE	72-55-9											
4,4'-DDT	50-29-3											
Aldrin	309-00-2											
alpha-BHC	319-84-6											
alpha-Chlordane	5103-71-9											
Aroclor 1262	37324-23-5											
Aroclor 1268	11100-14-4											
Aroclor-1016	12674-11-2											
Aroclor-1221	11104-28-2											
Aroclor-1232	11141-16-5											
Aroclor-1242	53469-21-9											
Aroclor-1248	12672-29-6											
Aroclor-1254	11097-69-1											
Aroclor-1260	11096-82-5											
beta-BHC	319-85-7											
delta-BHC	319-86-8											
Dieldrin	60-57-1											
Endosulfan I	959-98-8											
Endosulfan II	33213-65-9											
Endosulfan sulfate	1031-07-8											
Endrin	72-20-8											
Endrin aldehyde	7421-93-4											
Endrin ketone	53494-70-5											
gamma-BHC (Lindane)	58-89-9											
gamma-Chlordane	5103-74-2											
Heptachlor	76-44-8											
Heptachlor epoxide	1024-57-3											

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Pesticides/PCB Aroclors (µg/kg) (cont'd)												
Methoxychlor	72-43-5											
Toxaphene	8001-35-2											
Dioxins/Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9											
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4											
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9											
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5											
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9											
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6											
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7											
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0											
Total Pentachlorodibenzo-p-dioxin	36088-22-9											
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6											
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6											
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4											
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9											
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3											
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7											
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4											
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9											
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9											
Total TCDF	55722-27-5											
Total Tetra-Dioxins	41903-57-5											
Total Penta-Furans	30402-15-4											
Total Hexa-Furans	55684-94-1											
Total Hexa-Dioxins	34465-46-8											
Total Hepta-Furans	38998-75-3											
Total Hepta-Dioxins	37871-00-4											

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Chemical Name	CAS No.	SS137	SS138	SS139	SS140	SS141	SS142	SS143	SS144	SS145	SS146	SS147
Inorganic Analytes (mg/kg)												
Aluminum	7429-90-5	5610	5460	5980	5190	6010	6490	6350	5940	5580	6470	6560
Antimony	7440-36-0	0.76 U	0.68 U	0.73 U	0.68 U	0.66 U	0.68 U	0.66 U	0.66 U	0.58 U	0.65 U	0.5 J
Arsenic	7440-38-2	6.5 J	3.6 J	5.9 J	5.7 J	2.1 J	2.4 J	7.3 J	1.7 J	3 J	4.5 J	7.8 J
Barium	7440-39-3	129	84.1	128	119	85.8	96.9	159	70.8	59	122	452
Beryllium	7440-41-7	0.36 J	0.27 J	0.35 J	0.29 J	0.19 J	0.18 J	0.2 J	0.14 J	0.12 J	0.16 J	0.17 J
Cadmium	7440-43-9	0.95 J	0.28 J	0.69 J	1	0.29 J	0.23 J	0.48 J	0.19 J	0.15 J	0.47 J	0.86 J
Calcium	7440-70-2	13300	4520	8290	17200	2720	2970	8120	9190	3040	5070	9080
Chromium	7440-47-3	12.5	7.2	9.4	10.7	8.9	9.4	11.2	6.6	7.3	10.3	13.8
Cobalt	7440-48-4	4.3 J	3.4 J	3.5 J	3.6 J	2 J	2.3 J	2 J	1.6 J	1.4 J	1.9 J	2.3 J
Copper	7440-50-8	49.7	14.9	48.4	29.9	14.6	13.8	17.2	11.5	17.8	68.2	103
Cyanide	57-12-5	2.8 U	2.5 U	2.7 U	2.5 U	2.5 U	2.5 U	2.5 U	2.4 U	2.2 U	2.4 U	2.4 U
Iron	7439-89-6	10100	10900	10100	8790	9660	10200	13200	8530	8500	8950	13600
Lead	7439-92-1	212	65.8	150	242	268	205	552	102	127	215	454
Magnesium	7439-95-4	7370	2260	2300	3950	1730	1900	3060	5130	1310	1410	2360
Manganese	7439-96-5	401	538	301	344	476	442	485	331	145	342	431
Mercury	7439-97-6	1.3	0.19	0.29	0.3	0.35	0.65	0.82	0.2	0.71	0.68	0.43
Nickel	7440-02-0	11.1	9	11	11.1	8.5	9.3	13.9	6.2	6.8	8.8	11.7
Potassium	9-7-7440	481 J	367 J	463 J	544 J	420 J	538 J	721	422 J	619	539 J	661
Selenium	7782-49-2	0.27 J	0.21 J	0.36 J	0.22 J	0.26 J	0.26 J	0.51 J	0.17 J	0.17 J	0.58 J	0.82 J
Silver	7440-22-4	1.4 U	1.2 U	1.3 U	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U
Sodium	7440-23-5	688 U	610 U	642 U	624 U	621 U	627 U	596 U	598 U	550 U	610 U	605 U
Thallium	7440-28-0	0.11 U	0.1 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.09 U	0.1 U	0.1 J
Vanadium	7440-62-2	16.2	13.4	15.2	12.9	12.5	12.8	13.1	10.8	11.5	14	18.2
Zinc	7440-66-6	251	61.3	289	257	93.4	98.8	303	52.8	72.1	228	508

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6										
1,1,2,2-Tetrachloroethane	79-34-5										
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1										
1,1,2-Trichloroethane	79-00-5										
1,1-Dichloroethane	75-34-3										
1,1-Dichloroethene	75-35-4										
1,2,3-Trichlorobenzene	87-61-6										
1,2,4-Trichlorobenzene	120-82-1										
1,2-Dibromo-3-chloropropane	96-12-8										
1,2-Dibromoethane	106-93-4										
1,2-Dichlorobenzene	95-50-1										
1,2-Dichloroethane	107-06-2										
1,2-Dichloropropane	78-87-5										
1,3-Dichlorobenzene	541-73-1										
1,4-Dichlorobenzene	106-46-7										
1,4-Dioxane	123-91-1										
2-Butanone	78-93-3										
2-Hexanone	591-78-6										
4-Methyl-2-pentanone	108-10-1										
Acetone	67-64-1										
Benzene	71-43-2										
Bromodichloromethane	75-27-4										
Bromoform	75-25-2										
Bromomethane	74-83-9										
Carbon Disulfide	75-15-0										
Carbon Tetrachloride	56-23-5										
Chlorobenzene	108-90-7										
Chlorobromomethane	74-97-5										
Chloroethane	75-00-3										
Chloroform	67-66-3										
Chloromethane	74-87-3										
cis-1,2-Dichloroethene	156-59-2										
cis-1,3-Dichloropropene	10061-01-5										
Cyclohexane	110-82-7										
Dibromochloromethane	124-48-1										
Dichlorodifluoromethane	75-71-8										
Ethylbenzene	100-41-4										
Isopropylbenzene	98-82-8										
m,p-Xylene	179601-23-1										
Methyl Acetate	79-20-9										
Methyl Tert-Butyl Ether	1634-04-4										
Methylene Chloride	75-09-2										

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2										
O-Xylene	95-47-6										
Styrene	100-42-5										
Tetrachloroethene	127-18-4										
Toluene	108-88-3										
trans-1,2-Dichloroethene	156-60-5										
trans-1,3-Dichloropropene	10061-02-6										
Trichloroethene	79-01-6										
Trichlorofluoromethane	75-69-4										
Vinyl Chloride	75-01-4										
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.41 U	6.1 U	6.1 U	6.1 U	6.02 U	6.02 U	5.95 U	6.25 U	8.06 U	6.94 U
4-Chlorobenzotrifluoride	98-56-6	6.41 U	6.1 U	6.1 U	6.1 U	6.02 U	6.02 U	5.95 U	6.25 U	8.06 U	6.94 U
1-Bromo-2-chloroethane	107-04-0	6.41 U	6.1 U	6.1 U	6.1 U	6.02 U	6.02 U	5.95 U	6.25 U	8.06 U	6.94 U
1,3-Dibromobenzene	108-36-1	6.41 U	6.1 U	6.1 U	6.1 U	6.02 U	6.02 R	5.95 U	6.25 U	8.06 U	6.94 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
1,2,4,5-Tetrachlorobenzene	95-94-3	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
2,2'-oxybis(1-Chloropropane)	108-60-1	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
2,4,5-Trichlorophenol	95-95-4	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
2,4,6-Trichlorophenol	88-06-2	99 U	190 U	200 U	190 U	180 U	190 U	180 U	86 U	200 U	440 U
2,4-Dichlorophenol	120-83-2	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
2,4-Dimethylphenol	105-67-9	120 U	200 U	210 U	190 UJ	180 U	190 UJ	180 U	110 U	200 U	440 U
2,4-Dinitrophenol	51-28-5	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U
2,4-Dinitrotoluene	121-14-2	12 U	24 U	25 U	47 U	58 U	88 U	120 U	11 U	73 U	130 U
2,6-Dinitrotoluene	606-20-2	12 U	24 U	25 U	47 U	58 U	88 U	120 U	11 U	73 U	130 U
2-Chloronaphthalene	91-58-7	150 U	200 U	210 U	190 U	180 U	190 U	180 U	130 U	200 U	440 U
2-Chlorophenol	95-57-8	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
2-Methylnaphthalene	91-57-6	8.3 J	12 J	10 J	15 J	21	16 J	6.2 J	8.7 J	41	85
2-Methylphenol	95-48-7	210 U	200 U	210 U	190 UJ	180 U	190 UJ	180 U	160 U	200 U	440 U
2-Nitroaniline	88-74-4	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U
2-Nitrophenol	88-75-5	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
3,3'-Dichlorobenzidine	91-94-1	41 U	80 U	83 U	150 U	180 U	190 U	180 U	36 U	200 U	430 U
3-Nitroaniline	99-09-2	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U
4,6-Dinitro-2-methylphenol	534-52-1	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U
4-Bromophenyl-phenylether	101-55-3	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
4-Chloro-3-methylphenol	59-50-7	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
4-Chloroaniline	106-47-8	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
4-Chlorophenyl-phenylether	7005-72-3	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
4-Methylphenol	106-44-5	210 U	200 U	210 U	190 UJ	180 U	190 UJ	180 U	160 U	200 U	440 U
4-Nitroaniline	100-01-6	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U
4-Nitrophenol	100-02-7	400 U	390 U	410 U	360 U	350 U	360 U	360 U	320 U	380 U	850 U

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	20 UJ	20 UJ	21 UJ	18 U	17 U	18 U	19 J	16 U	19 U	64 J
Acenaphthylene	208-96-8	9.3 J	22 J	13 J	21	30 J	34 J	8.7 J	16 U	18 J	21 U
Acetophenone	98-86-2	49 J	51 J	62 J	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Anthracene	120-12-7	4.6 J	12 J	9.8 J	13 J	14 J	27	94	16 U	25	130 J
Atrazine	1912-24-9	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Benzaldehyde	100-52-7	700	710	760	170 J	220	270	240	280	870	250 J
Benzo(a)anthracene	56-55-3	51 J	100 J	81 J	200 J	270 J	400 J	960 J	24	350 J	720 J
Benzo(a)pyrene	50-32-8	52 J	94 J	77 J	200 J	240 J	430 J	1000 J	26	340 J	530
Benzo(b)fluoranthene	205-99-2	89 J	160 J	130 J	340 J	410 J	770 J	1700 J	49	490 J	870 J
Benzo(g,h,i)perylene	191-24-2	33 J	66 J	58 J	130 J	160	320 J	880 J	23	220 J	380 J
Benzo(k)fluoranthene	207-08-9	21 J	54 J	50 J	110	130	230 J	440 J	160 J	170	290 J
bis(2-Chloroethoxy)methane	111-91-1	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
bis(2-Chloroethyl)ether	111-44-4	12 U	24 U	25 U	47 U	58 U	88 U	120 U	11 U	73 U	130 U
bis(2-Ethylhexyl)phthalate	117-81-7	43 J	33 J	65 J	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Butylbenzylphthalate	85-68-7	7.5 J	200 U	210 U	190 U	180 U	7.5 J	7.5 J	160 U	13 J	440 U
Caprolactam	105-60-2	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Carbazole	86-74-8	8.4 J	20 J	14 J	15 J	19 J	65 J	99 J	3.9 J	19 J	160 J
Chlorophenols	58-90-2	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Chrysene	218-01-9	63 J	120 J	96 J	240 J	310 J	500 J	1100 J	27 J	400 J	710
Dibenz(a,h)anthracene	53-70-3	8.2 J	15 J	18 J	29	38	63	150	3.1 J	44	81
Dibenzofuran	132-64-9	210 U	6.2 J	210 U	6.9 J	8.5 J	9.7 J	15 J	160 U	17 J	86 J
Diethylphthalate	84-66-2	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Dimethylphthalate	131-11-3	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Di-n-butylphthalate	84-74-2	210 U	7.4 J	210 U	6.6 J	180 U	14 J	8.7 J	160 U	7.6 J	440 U
Di-n-octylphthalate	117-84-0	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Fluoranthene	206-44-0	98 J	220	180 J	290	400	600 J	1400 J	58 J	430	1900
Fluorene	86-73-7	2.5 J	7.5 J	5 J	18 U	11 J	13 J	33 J	16 U	9.7 J	57 J
Hexachlorobenzene	118-74-1	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Hexachlorobutadiene	87-68-3	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Hexachlorocyclopentadiene	77-47-4	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Hexachloroethane	67-72-1	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Indeno(1,2,3-cd)pyrene	193-39-5	43 J	93 J	76 J	170	210 J	400 J	990 J	30	260 J	530 J
Isophorone	78-59-1	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Naphthalene	91-20-3	8.7 J	12 J	10 J	20 J	22 J	24 J	21 J	11 J	65 J	81 J
Nitrobenzene	98-95-3	86 U	170 U	180 U	190 U	180 U	190 U	180 U	76 U	200 U	440 U
N-Nitroso-di-n-propylamine	621-64-7	12 UJ	24 UJ	25 UJ	47 U	58 U	88 U	120 U	11 U	73 U	130 U
N-Nitrosodiphenylamine	86-30-6	210 U	200 U	210 U	190 U	180 U	190 U	180 U	160 U	200 U	440 U
Pentachlorophenol	87-86-5	41 U	80 U	83 U	37 UJ	35 UJ	36 UJ	36 UJ	320 U	39 UJ	850 U
Phenanthrene	85-01-8	53 J	110 J	96 J	120	170	250 J	610 J	30 J	170	1500
Phenol	108-95-2	12 J	13 J	13 J	190 U	180 U	190 U	14 J	160 U	200 U	440 U
Pyrene	129-00-0	92 J	190 J	170 J	390 J	500 J	800 J	2000 J	44 J	670 J	1100 J

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
1-Bromo-3-fluorobenzene	1073-06-9	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
2-Bromopyridine	109-04-6	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
1-Bromo-4-ethylbenzene	1585-07-5	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
Benzo(e)pyrene	192-97-2	427 U	130 J	407 U	145 J	163 J	357 J	721	417 U	276 J	132 J
Perylene	198-55-0	427 U	407 U	407 U	407 U	402 U	114 J	236 J	417 U	538 U	463 U
2-Chloro-6-fluorophenol	2040-90-6	427 U	407 U	407 U	407 UJ	402 UJ	402 UJ	397 UJ	417 UJ	538 UJ	463 UJ
3-Bromoacetophenone	2142-63-4	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
11H-Benzo(b)fluorene	30777-19-6	427 U	407 U	407 U	407 U	402 U	402 U	148 J	417 U	538 U	463 U
3,4-Dichlorobenzotrifluoride	328-84-7	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
4-Bromofluorobenzene	460-00-4	427 U	407 U	407 U	407 U	402 U	402 U	397 U	417 U	538 U	463 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8										
4,4'-DDE	72-55-9										
4,4'-DDT	50-29-3										
Aldrin	309-00-2										
alpha-BHC	319-84-6										
alpha-Chlordane	5103-71-9										
Aroclor 1262	37324-23-5										
Aroclor 1268	11100-14-4										
Aroclor-1016	12674-11-2										
Aroclor-1221	11104-28-2										
Aroclor-1232	11141-16-5										
Aroclor-1242	53469-21-9										
Aroclor-1248	12672-29-6										
Aroclor-1254	11097-69-1										
Aroclor-1260	11096-82-5										
beta-BHC	319-85-7										
delta-BHC	319-86-8										
Dieldrin	60-57-1										
Endosulfan I	959-98-8										
Endosulfan II	33213-65-9										
Endosulfan sulfate	1031-07-8										
Endrin	72-20-8										
Endrin aldehyde	7421-93-4										
Endrin ketone	53494-70-5										
gamma-BHC (Lindane)	58-89-9										
gamma-Chlordane	5103-74-2										
Heptachlor	76-44-8										
Heptachlor epoxide	1024-57-3										

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5										
Toxaphene	8001-35-2										
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9										
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4										
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9										
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5										
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9										
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6										
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7										
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0										
Total Pentachlorodibenzo-p-dioxin	36088-22-9										
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6										
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6										
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4										
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9										
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3										
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7										
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4										
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9										
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9										
Total TCDF	55722-27-5										
Total Tetra-Dioxins	41903-57-5										
Total Penta-Furans	30402-15-4										
Total Hexa-Furans	55684-94-1										
Total Hexa-Dioxins	34465-46-8										
Total Hepta-Furans	38998-75-3										
Total Hepta-Dioxins	37871-00-4										

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Chemical Name	CAS No.	SS148	SS149	SS150	SS151	SS152	SS153	SS154	SS155	SS156	SS157
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	6220	6390	7230	5480	4680	5390	4330	4450	5900	4240
Antimony	7440-36-0	0.67 U	0.65 U	0.65 U	0.64 U	0.63 U	0.64 U	0.64 U	0.66 U	22.2	0.72
Arsenic	7440-38-2	3.2 J	2.1 J	2.2 J	2.5 J	3.3 J	3.9 J	2.8 J	6.3 J	14.7 J	17 J
Barium	7440-39-3	149	90.7	127	116 J	245	136	111 J	104 J	229	244
Beryllium	7440-41-7	0.16 J	0.17 J	0.2 J	0.26 J	0.21 J	0.23 J	0.23 J	0.22 J	0.38 J	0.33 J
Cadmium	7440-43-9	0.4 J	0.86 U	0.23 J	0.43 J	0.52 J	0.81 J	0.55 J	0.25 J	0.98 J	0.76 J
Calcium	7440-70-2	4780	7510	3300	3750	4880	3520	17100 J	4340 J	12900	16100
Chromium	7440-47-3	13.2	10.5	10.2	8	9.7	9.3	11.3	8.8	14	12.9
Cobalt	7440-48-4	2.1 J	1.9 J	2.5 J	3.7 J	3.2 J	3.1 J	3.1 J	3.4 J	4.4 J	3.9 J
Copper	7440-50-8	25.4	16.5	25.9	9.6	17	11.9	12.7	23.2	64	77.7
Cyanide	57-12-5	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.5 U	3.1 U	2.7 U
Iron	7439-89-6	11600	11400	11900	8790	7760	8360	6980	7970	9800	29300
Lead	7439-92-1	290	183	382	129 J	470 J	307 J	320 J	203 J	1030 J	443 J
Magnesium	7439-95-4	2150	1720	1960	2050	2120	2150	4900	2020	2580	2280
Manganese	7439-96-5	421	391	469	383	387	350	253	378	514	490
Mercury	7439-97-6	0.48	0.49	0.55	0.23	0.32	0.39	0.22	0.26	3.2	0.46
Nickel	7440-02-0	10.3	9.4	9.8	8.7	8.1	8.7	6.8	8.5	12	9.6
Potassium	9-7-7440	678	680	663	428 J	446 J	369 J	512 J	454 J	837	700
Selenium	7782-49-2	0.32 J	0.14 J	0.21 J	0.14 J	0.7 U	0.1 J	0.12 J	0.21 J	0.92 J	0.34 J
Silver	7440-22-4	1.2 U	1.2 U	1.2 U	1.2 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.5 UJ	1.3 UJ
Sodium	7440-23-5	617 U	599 U	616 U	596 U	563 U	588 U	568 U	600 U	458 J	291 J
Thallium	7440-28-0	0.1 U	0.1 U	0.1 U	0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	0.12 U	0.11 U
Vanadium	7440-62-2	15.6	15.6	15.8	10.6	9.3	10.8	9	10.3	19.4	34.8
Zinc	7440-66-6	239	82.5	241	205 J	416 J	410 J	467 J	136 J	443 J	422 J

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

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Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,1,2,2-Tetrachloroethane	79-34-5				0.2 U	0.2 U	0.18 U	0.17 U	0.2 U	0.24 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,1,2-Trichloroethane	79-00-5				0.9 U	0.91 U	0.79 U	0.77 U	0.88 U	1.1 U	0.91 U
1,1-Dichloroethane	75-34-3				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,1-Dichloroethene	75-35-4				3 U	3 U	2.6 U	2.6 U	2.9 U	3.6 U	3 U
1,2,3-Trichlorobenzene	87-61-6				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,2,4-Trichlorobenzene	120-82-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,2-Dibromo-3-chloropropane	96-12-8				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,2-Dibromoethane	106-93-4				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,2-Dichlorobenzene	95-50-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,2-Dichloroethane	107-06-2				1 U	1 U	0.88 U	0.85 U	0.98 U	1.2 U	1 U
1,2-Dichloropropane	78-87-5				1 U	1 U	0.88 U	0.85 U	0.98 U	1.2 U	1 U
1,3-Dichlorobenzene	541-73-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,4-Dichlorobenzene	106-46-7				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
1,4-Dioxane	123-91-1				100 R	110 R	89 R	78 R	100 R	110 R	100 R
2-Butanone	78-93-3				10 U	11 U	8.9 U	7.8 U	10 U	11 U	10 U
2-Hexanone	591-78-6				10 U	11 U	8.9 U	7.8 U	10 U	11 U	10 U
4-Methyl-2-pentanone	108-10-1				10 U	11 U	8.9 U	7.8 U	10 U	11 U	10 U
Acetone	67-64-1				10 U	23	8.9 U	7.8 U	10 U	11 U	10 U
Benzene	71-43-2				2 U	2 U	1.8 U	1.7 U	2 U	2.4 U	2 U
Bromodichloromethane	75-27-4				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Bromoform	75-25-2				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Bromomethane	74-83-9				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Carbon Disulfide	75-15-0				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Carbon Tetrachloride	56-23-5				3 U	3 U	2.6 U	2.6 U	2.9 U	3.6 U	3 U
Chlorobenzene	108-90-7				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Chlorobromomethane	74-97-5				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Chloroethane	75-00-3				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Chloroform	67-66-3				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Chloromethane	74-87-3				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
cis-1,2-Dichloroethene	156-59-2				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
cis-1,3-Dichloropropene	10061-01-5				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Cyclohexane	110-82-7				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Dibromochloromethane	124-48-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Dichlorodifluoromethane	75-71-8				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Ethylbenzene	100-41-4				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Isopropylbenzene	98-82-8				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
m,p-Xylene	179601-23-1				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Methyl Acetate	79-20-9				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Methyl Tert-Butyl Ether	1634-04-4				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Methylene Chloride	75-09-2				2.7	2.2	4.9 J	1.8	0.98 U	1.9 U	1 U

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Surface Soil Results
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Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
O-Xylene	95-47-6				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Styrene	100-42-5				5.1 U	5.3 U	4.5 U	3.9 U	5.1 UJ	5.3 UJ	5.1 UJ
Tetrachloroethene	127-18-4				3 U	3 U	2.6 U	2.6 U	2.9 U	3.6 U	3 U
Toluene	108-88-3				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
trans-1,2-Dichloroethene	156-60-5				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
trans-1,3-Dichloropropene	10061-02-6				5.1 U	5.3 U	4.5 U	3.9 U	5.1 U	5.3 U	5.1 U
Trichloroethene	79-01-6				3 U	3 U	2.6 U	2.6 U	2.9 U	3.6 U	3 U
Trichlorofluoromethane	75-69-4				5.1 U	5.3 U	0.47 J	1.6 J	5.1 U	5.3 U	5.1 U
Vinyl Chloride	75-01-4				0.7 U	0.71 U	0.61 U	0.6 U	0.69 U	0.83 U	0.71 U
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	8.2 U	6.17 U	6.1 U	5.88 U	5.81 U	5.75 U	5.68 U	5.75 U	2.27 J	5.68 U
4-Chlorobenzotrifluoride	98-56-6	8.2 U	6.17 U	6.1 U	5.88 U	5.81 U	5.75 U	5.68 U	5.75 U	5.88 U	5.68 U
1-Bromo-2-chloroethane	107-04-0	8.2 U	6.17 U	6.1 U	5.88 U	5.81 U	5.75 U	5.68 U	5.75 U	5.88 U	5.68 U
1,3-Dibromobenzene	108-36-1	8.2 U	6.17 U	6.1 U	5.88 U	5.81 U	5.75 U	5.68 U	5.75 UJ	5.88 U	5.68 U
Semi-Volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
1,2,4,5-Tetrachlorobenzene	95-94-3	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
2,2'-oxybis(1-Chloropropane)	108-60-1	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
2,4,5-Trichlorophenol	95-95-4	490 U	390 U	380 U	120 U	200 U	110 U	110 U	110 U	180 U	100 U
2,4,6-Trichlorophenol	88-06-2	490 U	390 U	380 U	9.3 U	46 U	9.1 U	8.9 U	8.5 U	44 U	8.2 U
2,4-Dichlorophenol	120-83-2	490 U	390 U	380 U	58 U	200 U	57 U	56 U	53 U	180 U	51 U
2,4-Dimethylphenol	105-67-9	490 U	390 U	380 U	12 U	58 U	11 UJ	11 UJ	11 U	56 U	10 U
2,4-Dinitrophenol	51-28-5	940 U	750 U	740 U	39 UJ	200 UJ	39 U	38 U	36 U	190 U	35 U
2,4-Dinitrotoluene	121-14-2	480 U	48 U	57 U	1.2 U	5.8 U	1.1 U	1.1 U	1.1 U	5.6 U	1 U
2,6-Dinitrotoluene	606-20-2	480 U	48 U	57 U	1.2 U	5.8 U	1.1 U	1.1 U	1.1 U	5.6 U	1 U
2-Chloronaphthalene	91-58-7	490 U	390 U	380 U	14 U	71 U	14 U	14 U	13 U	67 U	12 U
2-Chlorophenol	95-57-8	490 U	390 U	380 U	200 UJ	200 U	190 U	190 U	180 U	180 U	180 U
2-Methylnaphthalene	91-57-6	95	15 J	11 J	2.6 J	11 J	2.8 J	2.4 J	2.1 J	6.7	2.3 J
2-Methylphenol	95-48-7	490 U	390 U	380 U	0.5 J	200 U	110 U	110 U	110 U	180 U	100 U
2-Nitroaniline	88-74-4	940 U	750 U	740 U	380 U	380 U	380 U	360 U	340 U	340 U	350 U
2-Nitrophenol	88-75-5	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
3,3'-Dichlorobenzidine	91-94-1	490 U	160 U	190 U	3.9 UJ	19 UJ	3.8 U	3.7 U	3.5 U	18 U	3.4 U
3-Nitroaniline	99-09-2	940 U	750 U	740 U	380 U	380 U	380 U	360 U	340 U	340 U	350 U
4,6-Dinitro-2-methylphenol	534-52-1	940 U	750 U	740 U	170 UJ	380 U	160 U	160 U	150 U	340 U	140 U
4-Bromophenyl-phenylether	101-55-3	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
4-Chloro-3-methylphenol	59-50-7	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
4-Chloroaniline	106-47-8	490 U	390 U	380 U	35 UJ	170 UJ	34 U	33 U	32 U	170 U	31 U
4-Chlorophenyl-phenylether	7005-72-3	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
4-Methylphenol	106-44-5	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
4-Nitroaniline	100-01-6	940 U	750 U	740 U	380 U	380 U	380 U	360 U	340 U	340 U	350 U
4-Nitrophenol	100-02-7	940 U	750 U	740 U	120 U	380 U	110 U	110 U	110 U	340 U	100 U

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Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Semi-Volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	150 J	19 U	18 U	3.8 U	3.8 U	3.8 U	3.6 U	3.4 U	0.8 J	3.5 U
Acenaphthylene	208-96-8	22 J	19 U	18 U	3.8 U	0.86 J	3.8 U	3.6 U	3.4 U	0.7 J	3.5 U
Acetophenone	98-86-2	490 U	390 U	380 U	46 J	51 J	26 J	27 J	24 J	43 J	29 J
Anthracene	120-12-7	610 J	17 J	33 J	3.8 U	3.4 J	3.8 U	3.6 U	3.4 U	2.6 J	3.5 U
Atrazine	1912-24-9	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Benzaldehyde	100-52-7	420 J	510	520	27 J	97 J	26 J	25 J	35 J	200	40 J
Benzo(a)anthracene	56-55-3	4700 J	150 J	340 J	47 J	36 J	0.83 J	1.1 J	0.19 J	30 J	8.1 J
Benzo(a)pyrene	50-32-8	4000 J	130 J	280 J	36 J	42 J	0.52 J	1.2 J	0.2 J	27 J	11 J
Benzo(b)fluoranthene	205-99-2	5100 J	170 J	460 J	52 J	61 J	0.97 J	1.6 J	0.36 J	34 J	8.7 J
Benzo(g,h,i)perylene	191-24-2	2300 J	76	220 J	3.8 U	22 J	3.8 U	3.6 U	3.4 U	24 J	7.9 J
Benzo(k)fluoranthene	207-08-9	1300 J	71 J	110	3.8 U	12 J	3.8 U	0.7 J	3.4 U	19 J	8.8 J
bis(2-Chloroethoxy)methane	111-91-1	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
bis(2-Chloroethyl)ether	111-44-4	480 U	48 U	57 U	1.2 U	5.8 U	1.1 U	1.1 U	1.1 U	5.6 U	1 U
bis(2-Ethylhexyl)phthalate	117-81-7	490 U	390 U	380 U	13 J	24 J	9.9 J	11 J	180 U	180 U	180 U
Butylbenzylphthalate	85-68-7	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	7.1 J	180 U
Caprolactam	105-60-2	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Carbazole	86-74-8	1800 J	23 J	31 J	8.7 J	2.2 J	34 U	33 U	32 U	1.7 J	31 U
Chlorophenols	58-90-2	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Chrysene	218-01-9	3600 J	130 J	350 J	3.8 U	25 J	3.8 U	1.1 J	3.4 U	31 J	5.5 J
Dibenz(a,h)anthracene	53-70-3	510 J	9.3 J	35	5.2 J	7.5 J	3.8 U	3.6 U	3.4 U	14 J	7.4 J
Dibenzofuran	132-64-9	160 J	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Diethylphthalate	84-66-2	490 U	390 U	380 U	11 J	8.3 J	16 J	6.8 J	180 U	180 U	180 U
Dimethylphthalate	131-11-3	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Di-n-butylphthalate	84-74-2	490 U	390 U	380 U	12 J	12 J	15 J	11 J	160 U	180 U	150 U
Di-n-octylphthalate	117-84-0	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Fluoranthene	206-44-0	4600 J	300 J	520	3.8 U	41 J	3.8 U	3.6 U	3.4 U	41 J	2.1 J
Fluorene	86-73-7	230 J	19 U	18 U	3.8 U	1.1 J	3.8 U	3.6 U	3.4 U	0.88 J	3.5 U
Hexachlorobenzene	118-74-1	490 U	390 U	380 U	120 U	200 U	110 U	110 U	110 U	180 U	100 U
Hexachlorobutadiene	87-68-3	490 U	390 U	380 U	46 U	200 U	46 U	45 U	42 U	180 U	41 U
Hexachlorocyclopentadiene	77-47-4	490 U	390 U	380 U	200 U	200 U	190 U	190 U	180 U	180 U	180 U
Hexachloroethane	67-72-1	490 U	390 U	380 U	23 U	120 U	23 U	22 U	21 U	110 U	20 U
Indeno(1,2,3-cd)pyrene	193-39-5	3200 J	100	250 J	37 J	51 J	3.8 U	3.6 U	0.27 J	25 J	8.9 J
Isophorone	78-59-1	490 U	390 U	380 U	35 U	170 U	34 U	33 U	32 U	170 U	31 U
Naphthalene	91-20-3	380 J	18 J	16 J	9.4 J	11 J	5	5.6 J	4.8	8.7 J	5
Nitrobenzene	98-95-3	490 U	340 U	380 U	8.1 U	41 U	8 U	7.8 U	7.4 U	39 U	7.2 U
N-Nitroso-di-n-propylamine	621-64-7	480 U	48 U	57 U	1.2 U	5.8 U	1.1 U	1.1 U	1.1 U	5.6 U	1 U
N-Nitrosodiphenylamine	86-30-6	490 U	390 U	380 U	70 U	200 U	68 U	67 U	64 U	180 U	61 U
Pentachlorophenol	87-86-5	48 UJ	750 U	37 UJ	380 U	380 U	380 U	360 U	3.5 U	18 U	3.4 UJ
Phenanthrene	85-01-8	3400	120	220 J	3.8 U	26 J	3.8 U	3.6 U	0.69 J	21 J	1.9 J
Phenol	108-95-2	490 U	390 U	380 U	15 J	16 J	10 J	7.9 J	180 U	12 J	180 U
Pyrene	129-00-0	7200 J	210 J	670 J	0.74 J	36 J	3.8 U	1.6 J	3.4 U	25 J	2.4 J

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Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
1-Bromo-3-fluorobenzene	1073-06-9	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
2-Bromopyridine	109-04-6	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
1-Bromo-4-ethylbenzene	1585-07-5	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
Benzo(e)pyrene	192-97-2	1430	412 U	196 J	392 U	388 U	383 U	379 U	383 U	392 U	379 U
Perylene	198-55-0	481 J	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
2-Chloro-6-fluorophenol	2040-90-6	546 UJ	412 UJ	407 UJ	392 U	388 U	383 U	379 U	383 U	392 U	379 U
3-Bromoacetophenone	2142-63-4	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
11H-Benzo(b)fluorene	30777-19-6	301 J	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
3,4-Dichlorobenzotrifluoride	328-84-7	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
4-Bromofluorobenzene	460-00-4	546 U	412 U	407 U	392 U	388 U	383 U	379 U	383 U	392 U	379 U
Pesticides/PCB Aroclors (µg/kg)											
4,4'-DDD	72-54-8				3.8 R	3.8 R	3.7 R	3.7 R	3.8 R	3.7 R	3.7 R
4,4'-DDE	72-55-9				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	57	3.7 U
4,4'-DDT	50-29-3				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	18 J	3.7 U
Aldrin	309-00-2				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
alpha-BHC	319-84-6				0.099 U	0.1 U	0.096 UJ	0.096 U	0.097 U	0.096 U	0.096 U
alpha-Chlordane	5103-71-9				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor 1262	37324-23-5				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor 1268	11100-14-4				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1016	12674-11-2				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1221	11104-28-2				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1232	11141-16-5				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1242	53469-21-9				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1248	12672-29-6				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1254	11097-69-1				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1260	11096-82-5				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
beta-BHC	319-85-7				0.12 U	0.12 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
delta-BHC	319-86-8				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Dieldrin	60-57-1				0.23 U	0.23 U	0.23 UJ	0.23 U	0.23 UJ	0.23 U	0.23 U
Endosulfan I	959-98-8				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endosulfan II	33213-65-9				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	3.7 U	3.7 U
Endosulfan sulfate	1031-07-8				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	3.7 U	3.7 U
Endrin	72-20-8				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	3.5 J	3.7 U
Endrin aldehyde	7421-93-4				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	3.7 U	3.7 U
Endrin ketone	53494-70-5				3.8 U	3.8 U	3.7 U	3.7 U	3.8 U	3.7 U	3.7 U
gamma-BHC (Lindane)	58-89-9				0.58 U	0.59 U	0.56 UJ	0.56 U	0.57 UJ	0.56 U	0.56 U
gamma-Chlordane	5103-74-2				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Heptachlor	76-44-8				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Heptachlor epoxide	1024-57-3				2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U

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Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Pesticides/PCB Aroclors (µg/kg) (cont'd)											
Methoxychlor	72-43-5				20 U	20 U	19 U	19 U	19 U	19 U	19 U
Toxaphene	8001-35-2				140 U	140 U	130 UJ	130 U	140 U	130 U	130 U
Dioxins/Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9					0.35 UJ		0.3 UJ		0.77 U	
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4					0.209 JN		0.253 J		0.847 JN	
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9					0.298 JN		0.202 JN		0.941 JN	
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5					0.206 J		0.238 JN		1.12 JN	
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9					0.19 JN		0.247 J		0.24 U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6					0.19 UJ		0.27 UJ		0.56 U	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7					0.19 UJ		0.274 JN		0.757 JN	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0					1.08 JN		0.683 JN		27.9	
Total Pentachlorodibenzo-p-dioxin	36088-22-9					0.16 U		0.17 J		0.47 J	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6					0.24 UJ		0.24 UJ		0.34 U	
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6					0.27 UJ		0.187 UJ		0.3 U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4					0.16 UJ		0.17 J		0.42 U	
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9					0.173 JN		0.16 UJ		0.774 JN	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3					0.157 UJ		0.211 UJ		0.496 U	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7					0.27 UJ		0.25 UJ		0.77 J	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4					0.767 JN		0.41 JN		12.1	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9					2.6 J		0.467 J		49.8	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9					35.7 J		1.84 JN		429	
Total TCDF	55722-27-5					1.09 J		0.3 U		5.9	
Total Tetra-Dioxins	41903-57-5					0.312 J		0.24 U		0.34 U	
Total Penta-Furans	30402-15-4					2.17 J		0.44 J		14	
Total Hexa-Furans	55684-94-1					2.12 J		1.12 J		18	
Total Hexa-Dioxins	34465-46-8					0.43 J		0.274 J		5.6	
Total Hepta-Furans	38998-75-3					1.27 J		0.41 J		28	
Total Hepta-Dioxins	37871-00-4					5.62 J		0.871 J		89	

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS158	SS159	SS160	SB171-A	SS171	SB172-A	SS172	SB173-A	SS173	SB174-A
Inorganic Analytes (mg/kg)											
Aluminum	7429-90-5	4250	4580	4280	9380	8580	8040 J	7500 J	7650	6210	7780
Antimony	7440-36-0	0.74 J	0.67 U	0.65 U	0.31 U	0.31 U	0.61 U	0.61 U	0.58 UJ	0.62 UJ	0.6 UJ
Arsenic	7440-38-2	5.6 J	3.3 J	2.5 J	3 J	4.9 J	2.5 R	2.7 R	1.9 J	3.2 J	2.3 J
Barium	7440-39-3	207	81.7 J	37.3 J	54	74	37.5	37.9	51.5	52.1	39.7
Beryllium	7440-41-7	0.44 J	0.21 J	0.2 J	0.37	0.42	0.36 J	0.33 J	0.26 J	0.23 J	0.39
Cadmium	7440-43-9	1.2	0.41 J	0.87 U	0.16 J	0.22 J	0.81 U	0.23 J	0.77 U	0.18 J	0.16 J
Calcium	7440-70-2	9470	6040	11700	1580	2240	1680	1810	1750	2170	1720
Chromium	7440-47-3	26.6	7.7	6.5	11.5	10.8	10.4	9	11	7.8	10.7
Cobalt	7440-48-4	2.5 J	2.4 J	2.3 J	5.6	4.8	5.2	6	3.7 J	2.9 J	3.8 J
Copper	7440-50-8	95.1	8.8	10.3	10.6	14.6	9.9	10.8	9	10.1	13.5
Cyanide	57-12-5	3.2 U	2.5 U	2.4 U	2.4 U	2.3 U	2.3 U	2.2 U	2.3 U	2.3 U	2.2 U
Iron	7439-89-6	16400	7330	6880	15100	15600	14500 J	13600 J	14100 J	11100 J	13700 J
Lead	7439-92-1	906 J	125 J	12.9 J	20.9	58.2	4.8	21.7	4.2	21.6	5.5
Magnesium	7439-95-4	1580	1920	3450	2940	2580	2870	2890	2710	2090	2900
Manganese	7439-96-5	249	214	226	440	565	467 J	675 J	832 J	687 J	681 J
Mercury	7439-97-6	0.63	0.16	0.12 U	0.15	0.23	0.11 U	0.052 J	0.11 U	0.056 J	0.11 U
Nickel	7440-02-0	8.3	5.9	5.6	17	15.6	17.6	14	14.4	9.5	15.5
Potassium	9-7-7440	436 J	348 J	375 J	619	623	754	612	709	604	867
Selenium	7782-49-2	0.47 J	0.12 J	0.13 J	0.24 J	0.32 J	0.24 J	0.23 J	0.1 J	0.19 J	0.28 J
Silver	7440-22-4	1.5 UJ	1.2 UJ	1.2 UJ	1.2 U	1.2 U	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ
Sodium	7440-23-5	293 J	605 U	587 U	584 U	584 U	564 U	541 U	566 U	572 U	554 U
Thallium	7440-28-0	0.13 U	0.1 U	0.1 U	0.05	0.06	0.09 U	0.09 U	0.09 UJ	0.09 UJ	0.09 UJ
Vanadium	7440-62-2	18.1	11.4	11.3	15.6	15.3	14.7	13.5	15.5	13.3	15
Zinc	7440-66-6	548 J	169 J	29.3 J	42.5	57.4	35.1	39.7	31.4	40.5	34.9

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	71-55-6	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,1,2,2-Tetrachloroethane	79-34-5	0.3 U	0.23 U	0.22 U	0.21 U	0.22 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,1,2-Trichloroethane	79-00-5	1.3 U	1 U	0.99 U	0.95 U	0.97 U
1,1-Dichloroethane	75-34-3	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,1-Dichloroethene	75-35-4	4.5 U	3.5 U	3.3 U	3.2 U	3.2 U
1,2,3-Trichlorobenzene	87-61-6	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,2,4-Trichlorobenzene	120-82-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,2-Dibromo-3-chloropropane	96-12-8	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,2-Dibromoethane	106-93-4	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,2-Dichlorobenzene	95-50-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,2-Dichloroethane	107-06-2	1.5 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ
1,2-Dichloropropane	78-87-5	1.5 U	1.2 U	1.1 U	1.1 U	1.1 U
1,3-Dichlorobenzene	541-73-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,4-Dichlorobenzene	106-46-7	4.5 U	5 U	5.4 U	4.8 U	5.8 U
1,4-Dioxane	123-91-1	91 R	100 R	110 R	96 R	120 R
2-Butanone	78-93-3	9.1 U	10 U	11 U	9.6 U	12 U
2-Hexanone	591-78-6	9.1 U	10 U	11 U	9.6 U	12 U
4-Methyl-2-pentanone	108-10-1	9.1 U	10 U	11 U	9.6 U	12 U
Acetone	67-64-1	9.1 U	10 U	11 U	9.6 U	12 U
Benzene	71-43-2	3 U	2.3 U	2.2 U	2.1 U	2.2 U
Bromodichloromethane	75-27-4	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Bromoform	75-25-2	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Bromomethane	74-83-9	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Carbon Disulfide	75-15-0	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Carbon Tetrachloride	56-23-5	4.5 U	3.5 U	3.3 U	3.2 U	3.2 U
Chlorobenzene	108-90-7	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Chlorobromomethane	74-97-5	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Chloroethane	75-00-3	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Chloroform	67-66-3	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Chloromethane	74-87-3	4.5 U	5 U	5.4 U	4.8 U	5.8 U
cis-1,2-Dichloroethene	156-59-2	4.5 U	5 U	5.4 U	4.8 U	5.8 U
cis-1,3-Dichloropropene	10061-01-5	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Cyclohexane	110-82-7	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Dibromochloromethane	124-48-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Dichlorodifluoromethane	75-71-8	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Ethylbenzene	100-41-4	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Isopropylbenzene	98-82-8	4.5 U	5 U	5.4 U	4.8 U	5.8 U
m,p-Xylene	179601-23-1	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Methyl Acetate	79-20-9	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Methyl Tert-Butyl Ether	1634-04-4	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Methylene Chloride	75-09-2	2.1 U	1.6 U	1.6 UJ	1.4 U	1.1 U

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Volatile Organic Compounds (µg/kg) (cont'd)						
Metylcyclohexane	108-87-2	4.5 U	5 U	5.4 U	4.8 U	5.8 U
O-Xylene	95-47-6	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Styrene	100-42-5	4.5 UJ	5 UJ	5.4 UJ	4.8 UJ	5.8 UJ
Tetrachloroethene	127-18-4	4.5 U	3.5 U	3.3 U	3.2 U	0.31 J
Toluene	108-88-3	4.5 U	5 U	5.4 U	4.8 U	5.8 U
trans-1,2-Dichloroethene	156-60-5	4.5 U	5 U	5.4 U	4.8 U	5.8 U
trans-1,3-Dichloropropene	10061-02-6	4.5 U	5 U	5.4 U	4.8 U	5.8 U
Trichloroethene	79-01-6	4.5 U	3.5 U	3.3 U	3.2 U	3.2 U
Trichlorofluoromethane	75-69-4	4.5 U	5 U	5.4 UJ	4.8 U	5.8 U
Vinyl Chloride	75-01-4	1 U	0.81 U	0.77 U	0.74 U	0.75 U
Additional Target Volatile Organic Compounds (µg/kg)						
Fluorobenzene	462-06-6	2.85 J	5.81 U	7.25 U	5.81 U	5.26 U
4-Chlorobenzotrifluoride	98-56-6	5.95 U	5.81 U	7.25 U	5.81 U	5.26 U
1-Bromo-2-chloroethane	107-04-0	5.95 U	5.81 U	7.25 U	5.81 U	5.26 U
1,3-Dibromobenzene	108-36-1	5.95 U	5.81 U	7.25 U	5.81 U	5.26 U
Semi-Volatile Organic Compounds (µg/kg)						
1,1'-Biphenyl	92-52-4	150 U	150 U	150 U	170 U	190 U
1,2,4,5-Tetrachlorobenzene	95-94-3	150 U	150 U	150 U	170 U	190 U
2,2'-oxybis(1-Chloropropane)	108-60-1	150 U	150 U	150 U	170 U	190 U
2,4,5-Trichlorophenol	95-95-4	150 U	110 U	150 U	110 U	190 U
2,4,6-Trichlorophenol	88-06-2	37 U	8.9 U	42 U	8.8 U	92 U
2,4-Dichlorophenol	120-83-2	150 U	55 U	150 U	55 U	190 U
2,4-Dimethylphenol	105-67-9	47 U	11 U	53 U	11 U	110 U
2,4-Dinitrophenol	51-28-5	160 U	38 UJ	180 UJ	38 UJ	380 U
2,4-Dinitrotoluene	121-14-2	4.7 U	1.1 U	5.3 U	1.1 U	11 U
2,6-Dinitrotoluene	606-20-2	4.7 U	1.1 U	5.3 U	1.1 U	11 U
2-Chloronaphthalene	91-58-7	56 U	13 U	64 U	13 U	140 U
2-Chlorophenol	95-57-8	150 U	150 U	150 U	170 U	190 U
2-Methylnaphthalene	91-57-6	6.8	1.5 J	14	2.8 J	25 J
2-Methylphenol	95-48-7	150 U	110 U	150 U	110 U	190 U
2-Nitroaniline	88-74-4	290 U	280 U	300 U	340 U	380 U
2-Nitrophenol	88-75-5	150 U	150 U	150 U	170 U	190 U
3,3'-Dichlorobenzidine	91-94-1	15 U	3.7 U	17 U	3.6 U	38 UJ
3-Nitroaniline	99-09-2	290 U	280 U	300 U	340 U	380 U
4,6-Dinitro-2-methylphenol	534-52-1	290 U	160 UJ	300 U	150 UJ	380 U
4-Bromophenyl-phenylether	101-55-3	150 U	150 U	150 U	170 U	190 U
4-Chloro-3-methylphenol	59-50-7	150 U	150 U	150 U	170 U	190 U
4-Chloroaniline	106-47-8	140 U	33 U	150 U	33 U	190 U
4-Chlorophenyl-phenylether	7005-72-3	150 U	150 U	150 U	170 U	190 U
4-Methylphenol	106-44-5	150 U	150 U	150 U	170 U	190 U
4-Nitroaniline	100-01-6	290 U	280 U	300 U	340 U	380 U
4-Nitrophenol	100-02-7	290 U	110 U	300 U	110 U	380 U

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Semi-Volatile Organic Compounds (µg/kg) (cont'd)						
Acenaphthene	83-32-9	0.51 J	2.8 U	1.1 J	3.4 U	2.9 J
Acenaphthylene	208-96-8	0.55 J	2.8 U	1 J	3.4 U	7.9 J
Acetophenone	98-86-2	37 J	27 J	41 J	40 J	31 J
Anthracene	120-12-7	2 J	2.8 U	4.5	0.87 J	22 J
Atrazine	1912-24-9	150 U	150 U	150 U	170 U	190 U
Benzaldehyde	100-52-7	240	30 J	190	55 J	260
Benzo(a)anthracene	56-55-3	27 J	1.3 J	30 J	3.3 J	110
Benzo(a)pyrene	50-32-8	22 J	1.2 J	25	3.3 J	88 J
Benzo(b)fluoranthene	205-99-2	34 J	1.8 J	37	5	120
Benzo(g,h,i)perylene	191-24-2	18 J	2.8 UJ	24 J	3.4 UJ	60 J
Benzo(k)fluoranthene	207-08-9	7.9 J	0.58 J	13	1.4 J	41 J
bis(2-Chloroethoxy)methane	111-91-1	150 U	150 U	150 U	170 U	190 U
bis(2-Chloroethyl)ether	111-44-4	4.7 U	1.1 U	5.3 U	1.1 U	11 U
bis(2-Ethylhexyl)phthalate	117-81-7	150 U	150 U	530 U	320 U	190 U
Butylbenzylphthalate	85-68-7	150 U	150 U	5.3 J	170 U	6.1 J
Caprolactam	105-60-2	150 U	150 U	150 U	170 U	190 U
Carbazole	86-74-8	5.1 J	33 U	2 J	0.49 J	15 J
Chlorophenols	58-90-2	150 U	150 U	150 U	170 U	190 U
Chrysene	218-01-9	17 J	0.89 J	26 J	2.7 J	100 J
Dibenz(a,h)anthracene	53-70-3	7.6 J	2.8 U	5.4	0.81 J	20 J
Dibenzofuran	132-64-9	150 U	150 U	150 U	170 U	13 J
Diethylphthalate	84-66-2	150 U	150 U	150 U	170 U	190 U
Dimethylphthalate	131-11-3	150 U	150 U	150 U	170 U	190 U
Di-n-butylphthalate	84-74-2	150 U	150 U	150 U	170 U	16 J
Di-n-octylphthalate	117-84-0	150 U	150 U	150 U	170 U	190 U
Fluoranthene	206-44-0	32 J	2.3 J	51 J	5.7 J	180
Fluorene	86-73-7	0.73 J	2.8 U	1.7 J	3.4 U	13 J
Hexachlorobenzene	118-74-1	150 U	110 U	150 U	110 U	190 U
Hexachlorobutadiene	87-68-3	150 U	44 U	150 U	44 U	190 U
Hexachlorocyclopentadiene	77-47-4	150 U	150 U	150 U	170 U	190 U
Hexachloroethane	67-72-1	93 U	22 U	110 U	22 U	190 U
Indeno(1,2,3-cd)pyrene	193-39-5	24	1.2 J	23	3.2 J	61 J
Isophorone	78-59-1	140 U	33 U	150 U	33 U	190 U
Naphthalene	91-20-3	12 J	2.8 J	14 J	8.2 J	23 J
Nitrobenzene	98-95-3	33 U	7.8 U	37 U	7.7 U	80 U
N-Nitroso-di-n-propylamine	621-64-7	4.7 U	1.1 U	5.3 U	1.1 U	11 U
N-Nitrosodiphenylamine	86-30-6	150 U	66 U	150 U	66 U	2 J
Pentachlorophenol	87-86-5	15 U	3.7 UJ	17 UJ	1.2 J	38 U
Phenanthrene	85-01-8	16 J	1.8 J	42 J	7.4 J	140 J
Phenol	108-95-2	10 J	7.3 J	11 J	11 J	8.6 J
Pyrene	129-00-0	20	2 J	35 J	5.3 J	190 J

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Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Additional Target Semi-Volatile Organic Compounds (µg/kg)						
1,4-Dibromobenzene	106-37-6	397 U	388 U	483 U	388 U	351 U
1-Bromo-3-fluorobenzene	1073-06-9	397 U	388 U	483 U	388 U	351 U
2-Bromopyridine	109-04-6	397 U	388 U	483 U	388 U	351 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	397 U	388 U	483 U	388 U	351 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	397 U	388 U	483 U	388 U	351 U
1-Bromo-4-ethylbenzene	1585-07-5	397 U	388 U	483 U	388 U	351 U
Benzo(e)pyrene	192-97-2	397 U	388 U	483 U	388 U	107 J
Perylene	198-55-0	397 U	388 U	483 U	388 U	351 U
2-Chloro-6-fluorophenol	2040-90-6	397 U	388 U	483 U	388 U	351 U
3-Bromoacetophenone	2142-63-4	397 U	388 U	483 U	388 U	351 U
11H-Benzo(b)fluorene	30777-19-6	397 U	388 U	483 U	388 U	351 U
3,4-Dichlorobenzotrifluoride	328-84-7	397 U	388 U	483 U	388 U	351 U
4-Bromofluorobenzene	460-00-4	397 U	388 U	483 U	388 U	351 U
Pesticides/PCB Aroclors (µg/kg)						
4,4'-DDD	72-54-8	4 R	3.8 R	4.1 R	3.8 U	4 U
4,4'-DDE	72-55-9	29	3.8 U	4.1 UJ	3.8 U	5 R
4,4'-DDT	50-29-3	5 J	3.8 U	4.1 UJ	3.8 U	2 U
Aldrin	309-00-2	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
alpha-BHC	319-84-6	0.1 U	0.097 U	0.11 U	0.096 U	0.1 U
alpha-Chlordane	5103-71-9	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
Aroclor 1262	37324-23-5	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor 1268	11100-14-4	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1016	12674-11-2	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1221	11104-28-2	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1232	11141-16-5	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1242	53469-21-9	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1248	12672-29-6	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1254	11097-69-1	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
Aroclor-1260	11096-82-5	2.1 U	1.9 U	2.1 U	1.9 U	2.1 U
beta-BHC	319-85-7	0.12 U	0.11 U	0.13 U	0.11 U	0.12 U
delta-BHC	319-86-8	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
Dieldrin	60-57-1	0.24 U	0.23 U	0.25 U	0.23 U	0.25 U
Endosulfan I	959-98-8	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
Endosulfan II	33213-65-9	4 U	3.8 U	4.1 UJ	3.8 U	4 U
Endosulfan sulfate	1031-07-8	4 U	3.8 U	4.1 UJ	3.8 U	4 U
Endrin	72-20-8	4 U	3.8 U	4.1 UJ	3.8 U	4 U
Endrin aldehyde	7421-93-4	4 U	3.8 U	4.1 UJ	3.8 U	4 U
Endrin ketone	53494-70-5	4 U	3.8 U	4.1 UJ	3.8 U	4 U
gamma-BHC (Lindane)	58-89-9	0.61 U	0.57 U	0.63 U	0.57 U	0.62 U
gamma-Chlordane	5103-74-2	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
Heptachlor	76-44-8	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U
Heptachlor epoxide	1024-57-3	2.1 U	1.9 U	2.1 UJ	1.9 U	2.1 U

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Pesticides/PCB Aroclors (µg/kg) (cont'd)						
Methoxychlor	72-43-5	21 U	19 U	21 UJ	19 U	21 U
Toxaphene	8001-35-2	150 U	140 U	150 U	130 U	150 U
Dioxins/Furans (ng/kg)						
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.87 R		0.74 U		0.364 JN
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	2.16 J		1.8 J		3.1 J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.6 J		1.2 J		1.5 J
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	2.12 JN		1.51 JN		2.5 JN
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.61 J		0.35 J		0.56 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.554 JN		0.478 JN		0.52 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.782 JN		0.866 JN		1.6 J
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	8.8		15		24.2
Total Pentachlorodibenzo-p-dioxin	36088-22-9	3.9 J		1.6 J		4.4 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.28 U		0.34 U		0.31 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.81 J		0.419 JN		0.76 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.56 J		0.405 JN		0.49 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.4 J		0.899 JN		1.4 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.838 JN		0.767 JN		2.12 JN
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.791 JN		0.7 J		0.63 JN
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.6		8.2		15
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	15.7		20		21
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	103		140		168
Total TCDF	55722-27-5	28		21		32
Total Tetra-Dioxins	41903-57-5	1.7		0.56 J		2
Total Penta-Furans	30402-15-4	30		29		42
Total Hexa-Furans	55684-94-1	20		20		31
Total Hexa-Dioxins	34465-46-8	8.9		7.7		15
Total Hepta-Furans	38998-75-3	13		17		28
Total Hepta-Dioxins	37871-00-4	29		36		39

Appendix B - 1
Surface Soil Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SS174	SB175-A	SS175	SB176-A	SS176
Inorganic Analytes (mg/kg)						
Aluminum	7429-90-5	7080	8880	7430	8530	7800
Antimony	7440-36-0	0.62 UJ	0.62 UJ	0.65 UJ	0.6 U	0.63 U
Arsenic	7440-38-2	2.8 J	1.7 J	5.3 J	2 J	4.1 J
Barium	7440-39-3	171	43.3	48.8	40.5	74.6
Beryllium	7440-41-7	0.22 J	0.28 J	0.21 J	0.28 J	0.21 J
Cadmium	7440-43-9	0.22 J	0.83 U	0.18 J	0.8 U	0.84 U
Calcium	7440-70-2	3940	1380	1720	1190	1840
Chromium	7440-47-3	12.2	11.7	9.5	11.2	9.9
Cobalt	7440-48-4	2.7 J	3.6 J	2.7 J	3.9 J	3 J
Copper	7440-50-8	27	7.7	11.7	8.7	12.1
Cyanide	57-12-5	2.3 U	2.3 U	2.4 U	2.3 U	2.4 U
Iron	7439-89-6	11200 J	13500 J	11100 J	14300	12700
Lead	7439-92-1	134	3.8	38.4	6.1 J	48.2 J
Magnesium	7439-95-4	1870	2770	1730	2580	1770
Manganese	7439-96-5	528 J	554 J	437 J	595 J	573 J
Mercury	7439-97-6	0.21	0.042 J	0.055 J	0.11 U	0.11 J
Nickel	7440-02-0	9.5	14.6	9.1	13.5	10.6
Potassium	9-7-7440	652	624	683	579	609
Selenium	7782-49-2	0.12 J	0.12 J	0.18 J	0.09 J	0.22 J
Silver	7440-22-4	1.2 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.2 UJ
Sodium	7440-23-5	580 U	568 U	588 U	553 U	596 U
Thallium	7440-28-0	0.09 UJ	0.09 UJ	0.1 UJ	0.09 U	0.09 U
Vanadium	7440-62-2	14.1	17.1	15.5	18.5	16.6
Zinc	7440-66-6	149	31.2	39.9	29.4	57.8

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram
Qualifiers:
U - not detected
R - rejected value
J - estimated value
JN - tentatively identified value
D - dilution result

Appendix B - 2
Sediment Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SD-01-R1	SD-01-R1D	SD-04-R1	SD-05-R1	SD-06-R1	SD-07-R1	SD-08-R1	SD-09-R1	SD-10-R1	SD-11-R1
Volatile Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	71-55-6	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,1,2,2-Tetrachloroethane	79-34-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,1,2-Trichloroethane	79-00-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,1-Dichloroethane	75-34-3	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,1-Dichloroethene	75-35-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2,3-Trichlorobenzene	87-61-6	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2,4-Trichlorobenzene	120-82-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2-Dibromo-3-chloropropane	96-12-8	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2-Dibromoethane	106-93-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2-Dichlorobenzene	95-50-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2-Dichloroethane	107-06-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,2-Dichloropropane	78-87-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,3-Dichlorobenzene	541-73-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,4-Dichlorobenzene	106-46-7	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
1,4-Dioxane	123-91-1	61 R	65 R	120 R	170 R	110 R	110 R	120 R	120 R	120 R	130 R
2-Butanone	78-93-3	6.1 U	6.5 U	12 U	17 U	11 U	11 U	11 J	12 U	12 U	13 U
2-Hexanone	591-78-6	6.1 U	6.5 U	12 U	17 U	11 U	11 U	12 U	12 U	12 U	13 U
4-Methyl-2-pentanone	108-10-1	6.1 U	6.5 U	12 U	17 U	11 U	11 U	12 U	12 U	12 U	13 U
Acetone	67-64-1	6.1 U	6.5 U	12 J	17	11 U	11 U	23	12 U	12 U	13 U
Benzene	71-43-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Bromodichloromethane	75-27-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Bromoform	75-25-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Bromomethane	74-83-9	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Carbon Disulfide	75-15-0	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Carbon Tetrachloride	56-23-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Chlorobenzene	108-90-7	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Chlorobromomethane	74-97-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Chloroethane	75-00-3	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Chloroform	67-66-3	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Chloromethane	74-87-3	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
cis-1,2-Dichloroethene	156-59-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
cis-1,3-Dichloropropene	10061-01-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Cyclohexane	110-82-7	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Dibromochloromethane	124-48-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Dichlorodifluoromethane	75-71-8	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Ethylbenzene	100-41-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Isopropylbenzene	98-82-8	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
m,p-Xylene	179601-23-1	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Methyl Acetate	79-20-9	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Methyl Tert-Butyl Ether	1634-04-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Methylene Chloride	75-09-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U

Appendix B - 2
Sediment Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SD-01-R1	SD-01-R1D	SD-04-R1	SD-05-R1	SD-06-R1	SD-07-R1	SD-08-R1	SD-09-R1	SD-10-R1	SD-11-R1
Volatile Organic Compounds (µg/kg) (cont'd)											
Metylcyclohexane	108-87-2	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
o-Xylene	95-47-6	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Styrene	100-42-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Tetrachloroethene	127-18-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Toluene	108-88-3	3.1 U	3.2 U	5.9 U	8.4 U	0.87 J	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
trans-1,2-Dichloroethene	156-60-5	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
trans-1,3-Dichloropropene	10061-02-6	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Trichloroethene	79-01-6	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Trichlorofluoromethane	75-69-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Vinyl Chloride	75-01-4	3.1 U	3.2 U	5.9 U	8.4 U	5.6 U	5.6 U	5.9 U	5.9 U	6.2 U	6.5 U
Additional Target Volatile Organic Compounds (µg/kg)											
Fluorobenzene	462-06-6	6.58 U	6.41 U	6.1 U	8.33 U	5.95 U	6.58 U	6.58 U	6.17 U	6.1 U	6.49 U
4-Chlorobenzotrifluoride	98-56-6	6.58 U	6.41 U	6.1 U	8.33 U	5.95 U	6.58 U	6.58 U	6.17 U	1.89 J	6.49 U
1-Bromo-2-chloroethane	107-04-0	6.58 U	6.41 U	6.1 U	8.33 U	5.95 U	6.58 U	6.58 U	6.17 U	6.1 U	6.49 U
1,3-Dibromobenzene	108-36-1	26.3 U	25.6 U	24.4 U	33.3 U	23.8 U	26.3 U	26.3 U	24.7 U	24.4 U	26 U
Semi-volatile Organic Compounds (µg/kg)											
1,1'-Biphenyl	92-52-4	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
1,2,4,5-Tetrachlorobenzene	95-94-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,2'-oxybis(1-Chloropropane)	108-60-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,4,5-Trichlorophenol	95-95-4	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,4,6-Trichlorophenol	88-06-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,4-Dichlorophenol	120-83-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,4-Dimethylphenol	105-67-9	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,4-Dinitrophenol	51-28-5	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U
2,4-Dinitrotoluene	121-14-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2,6-Dinitrotoluene	606-20-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2-Chloronaphthalene	91-58-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2-Chlorophenol	95-57-8	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2-Methylnaphthalene	91-57-6	4 U	4 U	4.1 U	5 U	21 U	4.6 U	4.2 J	4.3 U	4.2 U	12
2-Methylphenol	95-48-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
2-Nitroaniline	88-74-4	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U
2-Nitrophenol	88-75-5	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
3,3'-Dichlorobenzidine	91-94-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
3-Nitroaniline	99-09-2	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U
4,6-Dinitro-2-methylphenol	534-52-1	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U
4-Bromophenyl-phenylether	101-55-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
4-Chloro-3-methylphenol	59-50-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
4-Chloroaniline	106-47-8	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
4-Chlorophenyl-phenylether	7005-72-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
4-Methylphenol	106-44-5	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
4-Nitroaniline	100-01-6	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U
4-Nitrophenol	100-02-7	400 U	400 U	410 U	500 U	2100 U	460 U	480 U	430 U	420 U	490 U

Appendix B - 2
Sediment Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SD-01-R1	SD-01-R1D	SD-04-R1	SD-05-R1	SD-06-R1	SD-07-R1	SD-08-R1	SD-09-R1	SD-10-R1	SD-11-R1
Semi-volatile Organic Compounds (µg/kg) (cont'd)											
Acenaphthene	83-32-9	4 U	4 U	4.1 U	5 U	21 U	4.6 U	4.3 J	4.3 U	4.2 U	30 J
Acenaphthylene	208-96-8	3.8 J	12	4.1 U	5 U	21 U	4.6 U	12	5	7.1	13
Acetophenone	98-86-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Anthracene	120-12-7	13	16	4.1 UJ	5 UJ	25	4.6 U	24 J	9.1 J	23 J	150 J
Atrazine	1912-24-9	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	510	220 U	250 U
Benzaldehyde	100-52-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Benzo(a)anthracene	56-55-3	36 J	92 J	4.1 U	5.4	70	29 J	120 J	49 J	64 J	510 J
Benzo(a)pyrene	50-32-8	29 J	110 J	4.1 U	5 U	110 J	26	110 J	45 J	51 J	580 J
Benzo(b)fluoranthene	205-99-2	33 J	140 J	4.1 U	9.2	180 J	37	150 J	65 J	71 J	590 J
Benzo(g,h,i)perylene	191-24-2	4.4	51 J	4.1 U	5 U	68	8.7	52 J	13	9.8	130 J
Benzo(k)fluoranthene	207-08-9	5.7	65 J	4.1 U	5 U	58	13	65 J	33 J	16	220 J
bis(2-Chloroethoxy)methane	111-91-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
bis(2-Chloroethyl)ether	111-44-4	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
bis(2-Ethylhexyl)phthalate	117-81-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Butylbenzylphthalate	85-68-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Caprolactam	105-60-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Carbazole	86-74-8	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	47 J
Chlorophenols	58-90-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Chrysene	218-01-9	30 J	130 J	4.1 U	6.6	110	26	110 J	50 J	54 J	490 J
Dibenz(a,h)anthracene	53-70-3	4 U	4 U	4.1 U	5 U	21 U	4.6 U	4.8 U	4.3 U	4.2 U	4.9 U
Dibenzofuran	132-64-9	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Diethylphthalate	84-66-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Dimethylphthalate	131-11-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Di-n-butylphthalate	84-74-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Di-n-octylphthalate	117-84-0	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	28 J
Fluoranthene	206-44-0	76 J	330	4.1 U	9.2	300 J	45	250	98 J	100 J	1600 J
Fluorene	86-73-7	4 U	6.1	4.1 U	5 U	21 U	4.6 U	4.8 U	4.3 U	4.2 U	38
Hexachlorobenzene	118-74-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Hexachlorobutadiene	87-68-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Hexachlorocyclopentadiene	77-47-4	200 U	210 U	210 UJ	260 UJ	1100 UJ	240 U	240 UJ	220 UJ	220 UJ	250 UJ
Hexachloroethane	67-72-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Indeno(1,2,3-cd)pyrene	193-39-5	5.9	67 J	4.1 U	5 U	61	15	53 J	18	37 J	220 J
Isophorone	78-59-1	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Naphthalene	91-20-3	4 U	5.7	4.1 U	5 U	21 U	2.2 J	4.5 J	4.3 U	4 J	14
Nitrobenzene	98-95-3	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
N-Nitroso-di-n-propylamine	621-64-7	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
N-Nitrosodiphenylamine	86-30-6	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Pentachlorophenol	87-86-5	8.1 U	8.1 U	410 U	500 U	43 U	9.3 U	480 U	430 U	420 U	490 U
Phenanthrene	85-01-8	47 J	180 J	4.1 U	5 U	95	12	110 J	40 J	44 J	740 J
Phenol	108-95-2	200 U	210 U	210 U	260 U	1100 U	240 U	240 U	220 U	220 U	250 U
Pyrene	129-00-0	58 J	230	4.1 U	15	170 J	57 J	260	99 J	110 J	1600 J

Appendix B - 2
Sediment Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SD-01-R1	SD-01-R1D	SD-04-R1	SD-05-R1	SD-06-R1	SD-07-R1	SD-08-R1	SD-09-R1	SD-10-R1	SD-11-R1
Additional Target Semi-Volatile Organic Compounds (µg/kg)											
1,4-Dibromobenzene	106-37-6	439 U	427 U	407 U	556 U	7940 UJ	439 U	439 U	412 U	407 U	433 U
1-Bromo-3-fluorobenzene	1073-06-9	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
2-Bromopyridine	109-04-6	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
3-Nitro-4-chlorobenzotrifluoride	121-17-5	439 U	427 U	407 U	556 U	7940 UJ	439 U	439 U	412 U	407 U	433 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	439 U	427 U	407 U	556 U	7940 UJ	439 U	439 U	412 U	407 U	433 U
1-Bromo-4-ethylbenzene	1585-07-5	439 U	427 U	407 U	556 U	7940 UJ	439 U	439 U	412 U	407 U	433 U
Benzo(e)pyrene	192-97-2	700	427 U	407 U	556 U	7940 UJ	439 U	439 U	2670	122 J	320 J
Perylene	198-55-0	267 J	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	458 J	407 UJ	125 J
2-Chloro-6-fluorophenol	2040-90-6	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
3-Bromoacetophenone	2142-63-4	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
11H-Benzo(b)fluorene	30777-19-6	125 J	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	132 J	407 UJ	433 UJ
3,4-Dichlorobenzotrifluoride	328-84-7	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
4-Bromofluorobenzene	460-00-4	439 UJ	427 UJ	407 UJ	556 UJ	7940 UJ	439 UJ	439 UJ	412 UJ	407 UJ	433 UJ
Inorganics (mg/kg)											
Aluminum	7429-90-5	4220 J	2610 J	2330	3660	1670	5950	2350	4550	6580	4860
Antimony	7440-36-0	0.34 U	0.35 U	0.06 J	0.12 J	0.11 J	0.1 J	0.34 U	0.05 J	0.1 J	0.19 J
Arsenic	7440-38-2	3.9 J	6.4 J	2.2 J	3 J	2.7 J	3.2 J	1.1 J	2.2 J	2.5 J	2.2 J
Barium	7440-39-3	239 J	175 J	24.3 J	42.8 J	30.7 J	96.9 J	38.4 J	41.6 J	44.3 J	83.8 J
Beryllium	7440-41-7	0.11 J	0.17 J	0.08 J	0.14 J	0.21 J	0.24 J	0.11 J	0.19 J	0.25	0.22
Cadmium	7440-43-9	0.45 U	0.46 U	0.44 U	0.52 U	0.86 U	0.47 U	0.45 U	0.45 U	0.43 U	0.47 U
Calcium	7440-70-2	11900 R	54300 R	4490	6840	141000	36400	9900	16100	18700	22600
Chromium	7440-47-3	8.7 J	4.9 J	3.5 J	5.6 J	3.7 J	10.3 J	5.1 J	7.6 J	11.4 J	12.9 J
Cobalt	7440-48-4	2 J	3.3 J	1.9 J	2.4 J	5.5 U	4.5 J	2.1 J	3.1 J	3.8 J	3.8 J
Copper	7440-50-8	10.9 J	4.5 J	2.3 J	5.1	6.1	9.3	3.1	4.7	4.3	4.8
Cyanide	57-12-5	2.5 U	2.6 U	2.4 U	2.8 U	2.4 U	2.6 U	2.5 U	2.5 U	2.4 U	2.6 U
Iron	7439-89-6	19200 J	8650 J	5320	7410	6610	14100	5650	10500	16400	12000
Lead	7439-92-1	12.5 J	12.2 J	3.7 J	10.6 J	15.5 J	24.3 J	6 J	7.8 J	6.3 J	25.1 J
Magnesium	7439-95-4	2840	3140	1360	2260	52500	6840	2450	4200	6450	6320
Manganese	7439-96-5	2070 R	1940 R	89.3 R	284 R	344 R	403 R	124 R	311 R	364 R	327 R
Mercury	7439-97-6	0.12 U	0.13 U	0.12 U	0.14 U	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.13 U
Nickel	7440-02-0	13.9	6.9	3.8 J	6.1	4.6 J	15.6	5.2	11.5	19.4	13.5
Potassium	9-7-7440	489 J	402 J	276 J	390 J	370 J	865	428 J	664	998	816
Selenium	7782-49-2	0.05 J	0.14 J	0.09 J	0.14 J	0.71 U	0.18 J	0.38 U	0.05 J	0.05 J	0.05 J
Silver	7440-22-4	1.2 U	1.3 U	1.2 U	1.4 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.3 U
Sodium	7440-23-5	608 U	627 U	599 U	705 U	243 J	642 U	611 U	617 U	584 U	651 U
Thallium	7440-28-0	0.05 U	0.05 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Vanadium	7440-62-2	11.3	7.6	4.8 J	7.7	5.8 J	12.5	5 J	9	13	10.4
Zinc	7440-66-6	735 J	473 J	16.2	28.4	386	137	101	177	186	236

Notes:
µg/kg - microgram per kilogram
mg/kg - milligram per kilogram

Qualifiers:
U - not detected
J - estimated value
R - rejected value

Appendix B - 3
Surface Water Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SEEP1A-R1	SW-01-R1	SW-01-R1D	SW-04-R1	SW-05-R1	SW-06-R1	SW-07-R1	SW-08-R1	SW-09-R1	SW-10-R1	SW-11-R1
Volatile Organic Compounds (µg/L)												
1,1,1-Trichloroethane	71-55-6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5 U	0.14 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	96-12-8	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U	0.05 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	95-50-1	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	108-10-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	75-15-0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobromomethane	74-97-5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	179601-23-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Tert-Butyl Ether	1634-04-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Metylcyclohexane	108-87-2	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Appendix B - 3
Surface Water Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SEEP1A-R1	SW-01-R1	SW-01-R1D	SW-04-R1	SW-05-R1	SW-06-R1	SW-07-R1	SW-08-R1	SW-09-R1	SW-10-R1	SW-11-R1
Volatile Organic Compounds (µg/L) (cont'd)												
o-Xylene	95-47-6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Additional Target Volatile Organic Compounds (µg/L)												
Fluorobenzene	462-06-6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorobenzotrifluoride	98-56-6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dibromobenzene	108-36-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1-Bromo-2-chloroethane	107-04-0	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Semi-volatile Organic Compounds (µg/L)												
1,1'-Biphenyl	92-52-4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-oxybis(1-Chloropropane)	108-60-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	95-95-4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	88-06-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	120-83-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	105-67-9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	51-28-5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	121-14-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	606-20-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloronaphthalene	91-58-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U
2-Chlorophenol	95-57-8	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	91-57-6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylphenol	95-48-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	88-74-4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	88-75-5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	91-94-1	5 U	5 UJ	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 UJ
3-Nitroaniline	99-09-2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4,6-Dinitro-2-methylphenol	534-52-1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	101-55-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	59-50-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	106-47-8	5 U	5 UJ	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 UJ
4-Chlorophenyl-phenylether	7005-72-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	106-44-5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	100-01-6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	100-02-7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	83-32-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

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Surface Water Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SEEP1A-R1	SW-01-R1	SW-01-R1D	SW-04-R1	SW-05-R1	SW-06-R1	SW-07-R1	SW-08-R1	SW-09-R1	SW-10-R1	SW-11-R1
Semi-volatile Organic Compounds (µg/L) (cont'd)												
Acenaphthylene	208-96-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acetophenone	98-86-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	120-12-7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Atrazine	1912-24-9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Benzaldehyde	100-52-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	56-55-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	50-32-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	205-99-2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	191-24-2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	207-08-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
bis(2-Chloroethoxy)methane	111-91-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethyl)ether	111-44-4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Ethylhexyl)phthalate	117-81-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Butylbenzylphthalate	85-68-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Caprolactam	105-60-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbazole	86-74-8	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorophenols	58-90-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chrysene	218-01-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenz(a,h)anthracene	53-70-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzofuran	132-64-9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	84-66-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	131-11-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-butylphthalate	84-74-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-octylphthalate	117-84-0	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluoranthene	206-44-0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	86-73-7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobenzene	118-74-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Hexachlorobutadiene	87-68-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	77-47-4	5 U	5 UJ	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 UJ
Hexachloroethane	67-72-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Isophorone	78-59-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	91-20-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nitrobenzene	98-95-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	621-64-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	86-30-6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	87-86-5	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Phenanthrene	85-01-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenol	108-95-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	129-00-0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

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Surface Water Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SEEP1A-R1	SW-01-R1	SW-01-R1D	SW-04-R1	SW-05-R1	SW-06-R1	SW-07-R1	SW-08-R1	SW-09-R1	SW-10-R1	SW-11-R1
Additional Target Semi-Volatile Organic Compounds (µg/L)												
1,4-Dibromobenzene	106-37-6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1-Bromo-3-fluorobenzene	1073-06-9	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Bromopyridine	109-04-6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitro-4-chlorobenzotrifluoride	121-17-5	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Amino-4-chlorobenzotrifluoride	121-50-6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1-Bromo-4-ethylbenzene	1585-07-5	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(e)pyrene	192-97-2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Perylene	198-55-0	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloro-6-fluorophenol	2040-90-6	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Bromoacetophenone	2142-63-4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
11H-Benzo(b)fluorene	30777-19-6	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,4-Dichlorobenzotrifluoride	328-84-7	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Bromofluorobenzene	460-00-4	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Inorganics (µg/L)												
Aluminum	7429-90-5	644	93.3 J	105	118	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Antimony	7440-36-0	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	7440-38-2	2.2 J	1.5 J	1.5 J	1.2 J	1.4 J	1.4 J	1.3 J	1.3 J	1.3 J	1.4 J	1.3 J
Barium	7440-39-3	197	59.5	58	68.9	72.5	70.7	69.2	67.6	70.2	75	73.1
Beryllium	7440-41-7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	7440-43-9	0.36 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	7440-70-2	113000	93200	90500	80100	84500	86400	93700	94500	95100	97200	94800
Chromium	7440-47-3	1.2 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Cobalt	7440-48-4	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Copper	7440-50-8	18.8 J	5.6 R	1.5 R	2 U	2 U	2 U	0.97 J	0.8 J	0.93 J	3	2.1
Cyanide	57-12-5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	7439-89-6	713	190	176	138	176	184	151	109	126	135	137
Lead	7439-92-1	28	1 U	0.34 J	1 U	1 U	1 U	0.52 J	1 U	1 U	0.41 J	0.4 J
Magnesium	7439-95-4	20800	31100	30100	14800	15500	16200	30000	30100	30300	30300	29500
Manganese	7439-96-5	190	31.3	31.4	55.2	65.5	98	28.1	18.9	21.8	27	27.7
Mercury	7439-97-6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	2 J	0.87 J	0.9 J	1 UJ	1 UJ	1 UJ	0.75 J	0.73 J	0.69 J	0.71 J	0.76 J
Potassium	9-7-7440	4370 J	6520	6160	2750 J	3470 J	4120 J	5080	5170	5010	5260	4990 J
Selenium	7782-49-2	0.87 J	0.62 J	0.37 J	1 U	1 U	1 U	0.36 J	0.31 J	0.35 J	0.65 J	0.4 J
Silver	7440-22-4	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	7440-23-5	193000	37100	36700	14100	16900	23400	36000	36500	37200	38500	38300
Thallium	7440-28-0	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Vanadium	7440-62-2	2.4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	7440-66-6	92	24.2	24.4	0.83 J	0.95 J	1 J	26.4	17.8	19.2	21.2	20.6

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Surface Water Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	SEEP1A-R1	SW-01-R1	SW-01-R1D	SW-04-R1	SW-05-R1	SW-06-R1	SW-07-R1	SW-08-R1	SW-09-R1	SW-10-R1	SW-11-R1
Miscellaneous (mg/L)												
Total Dissolved Solids	TDS	870 J	470 J	480 J	340 J	360 J	370 J	490 J	490 J	540 J	430 J	360 J
Residue,non-filterable	010-17-3	250 J	10 J	10 UJ	11 J	16 J	10 UJ	17 J	20 J	10 UJ	10 UJ	10 UJ
Total Organic Carbon	TOC	4.3 J	8.8 J	8.9 J	4.6	4.4	6.3	7.6	7	7.8	7.1	7.5
Nitrate[asN]	14797-55-8	1 U	1 U	1 U	1.6	1.1	1 U	1.1	1.1	1	1.1	1 U
Nitrite[asN]	14797-65-0	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hardness	471-34-1	390	340	340	250	280	280	360	360	360	350	360
Sulfide	18496-25-8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UL

Notes:
µg/L - microgram per liter
mg/L - milligram per liter
Qualifiers:
U - not detected
R - rejected value
J - estimated value
UL - low bias related to the reporting limit

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Porewater Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	PW-01-R1	PW-07-R1	PW-08-R1	PW-09-R1	PW-09-R1D	PW-10ALT-R1
Volatile Organic Compounds (µg/L)							
1,1,1-Trichloroethane	71-55-6	0.5 U	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ
1,1-Dichloroethane	75-34-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	96-12-8	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromoethane	106-93-4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	95-50-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,3-Dichlorobenzene	541-73-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	108-10-1	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Bromoform	75-25-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	75-15-0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobromomethane	74-97-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ
Cyclohexane	110-82-7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Dibromochloromethane	124-48-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	179601-23-1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Tert-Butyl Ether	1634-04-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.072 J
Methylene Chloride	75-09-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Metylcyclohexane	108-87-2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ

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Porewater Results
Diaz Chemical Corporation Site
Holley, New York

Chemical Name	CAS No.	PW-01-R1	PW-07-R1	PW-08-R1	PW-09-R1	PW-09-R1D	PW-10ALT-R1
Volatile Organic Compounds (µg/L) (cont'd)							
o-Xylene	95-47-6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	0.5 U	0.5 U	0.056 J	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ
Trichloroethene	79-01-6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Additional Target Volatile Organic Compounds (µg/L)							
Fluorobenzene	462-06-6	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorobenzotrifluoride	98-56-6	5 U	9.36	5 U	8.9	8.37	2.14 J
1-Bromo-2-chloroethane	107-04-0	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dibromobenzene	108-36-1	5 U	5 U	5 U	5 U	5 U	5 U
Semi-volatile Organic Compounds (µg/L)							
1,1'-Biphenyl	92-52-4	5 U	5 U	5 UJ	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-oxybis(1-Chloropropane)	108-60-1	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	95-95-4	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	88-06-2	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	120-83-2	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	105-67-9	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	51-28-5	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	121-14-2	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	606-20-2	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloronaphthalene	91-58-7	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	95-57-8	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	91-57-6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylphenol	95-48-7	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	88-74-4	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	88-75-5	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	91-94-1	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	99-09-2	10 U	10 U	10 U	10 U	10 U	10 U
4,6-Dinitro-2-methylphenol	534-52-1	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	101-55-3	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	59-50-7	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	106-47-8	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl-phenylether	7005-72-3	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	106-44-5	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	100-01-6	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	100-02-7	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	83-32-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

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Chemical Name	CAS No.	PW-01-R1	PW-07-R1	PW-08-R1	PW-09-R1	PW-09-R1D	PW-10ALT-R1
Semi-volatile Organic Compounds (µg/L) (cont'd)							
Acenaphthylene	208-96-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acetophenone	98-86-2	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	120-12-7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Atrazine	1912-24-9	5 U	5 U	5 U	5 U	5 U	5 U
Benzaldehyde	100-52-7	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	56-55-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	50-32-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	205-99-2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	191-24-2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	207-08-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
bis(2-Chloroethoxy)methane	111-91-1	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethyl)ether	111-44-4	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Ethylhexyl)phthalate	117-81-7	5 U	5 U	2.8 J	5 U	5 U	5 U
Butylbenzylphthalate	85-68-7	5 U	5 U	5 UJ	5 U	5 U	5 U
Caprolactam	105-60-2	5 U	5 U	5 UJ	5 U	5 U	5 U
Carbazole	86-74-8	5 U	5 U	5 U	5 U	5 U	5 U
Chlorophenols	58-90-2	5 U	5 U	5 U	5 U	5 U	5 U
Chrysene	218-01-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenz(a,h)anthracene	53-70-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzofuran	132-64-9	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	84-66-2	5 U	5 U	5 UJ	5 U	5 U	5 U
Dimethylphthalate	131-11-3	5 U	5 U	5 UJ	5 U	5 U	5 U
Di-n-butylphthalate	84-74-2	5 U	5 U	5 UJ	5 U	5 U	5 U
Di-n-octylphthalate	117-84-0	5 U	5 U	5 UJ	5 U	5 U	5 U
Fluoranthene	206-44-0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	86-73-7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobenzene	118-74-1	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	77-47-4	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	67-72-1	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Isophorone	78-59-1	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	91-20-3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nitrobenzene	98-95-3	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	621-64-7	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	86-30-6	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	87-86-5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Phenanthrene	85-01-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenol	108-95-2	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	129-00-0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

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Chemical Name	CAS No.	PW-01-R1	PW-07-R1	PW-08-R1	PW-09-R1	PW-09-R1D	PW-10ALT-R1
Additional Target Semi-Volatile Organic Compounds (µg/L)							
1,4-Dibromobenzene	106-37-6	10 U	10 U	10 U	10 U	10 U	
1-Bromo-3-fluorobenzene	1073-06-9	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
2-Bromopyridine	109-04-6	10 U	10 U	10 U	10 U	10 U	
3-Nitro-4-chlorobenzotrifluoride	121-17-5	10 U	10 U	10 UJ	10 U	10 U	
3-Amino-4-chlorobenzotrifluoride	121-50-6	10 U	10 U	10 U	10 U	10 U	
1-Bromo-4-ethylbenzene	1585-07-5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
Benzo(e)pyrene	192-97-2	10 U	10 U	10 U	10 U	10 U	
Perylene	198-55-0	10 UJ	10 UJ	10 U	10 UJ	10 UJ	
2-Chloro-6-fluorophenol	2040-90-6	10 U	10 U	10 UJ	10 U	10 U	
3-Bromoacetophenone	2142-63-4	10 U	10 U	10 U	10 U	10 U	
11H-Benzo(b)fluorene	30777-19-6	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
3,4-Dichlorobenzotrifluoride	328-84-7	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
4-Bromofluorobenzene	460-00-4	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
Inorganics (µg/L)							
Aluminum	7429-90-5	85.7 J	102		76.9 J	69.8 J	
Antimony	7440-36-0	2 U	2 U		2 U	2 U	
Arsenic	7440-38-2	1.3 J	1.2 J		1.4 J	1.3 J	
Barium	7440-39-3	55.6	200		105	106	
Beryllium	7440-41-7	1 U	1 U		1 U	1 U	
Cadmium	7440-43-9	1 U	1 U		1 U	1 U	
Calcium	7440-70-2	41500	164000		99600	100000	
Chromium	7440-47-3	2 U	2 U		2 U	2 U	
Cobalt	7440-48-4	1 U	0.36 J		1 U	1 U	
Copper	7440-50-8	1.3 J	2.3 J		2 U	2 U	
Cyanide	57-12-5	5 U	5 U		5 U	5 U	
Iron	7439-89-6	123	38 J		90.3 J	141	
Lead	7439-92-1	0.56 J	1 U		1 U	1 U	
Magnesium	7439-95-4	14600	42200		29300	29400	
Manganese	7439-96-5	205	617		91.3	98.9	
Mercury	7439-97-6	0.2 U	0.2 U		0.2 U	0.2 U	
Nickel	7440-02-0	1 J	0.72 J		0.8 J	0.95 J	
Potassium	9-7-7440	2110 J	4940 J		3380 J	3340 J	
Selenium	7782-49-2	1 U	0.39 J		1.1 J	1.4 J	
Silver	7440-22-4	0.1 UJ	0.1 UJ		0.1 UJ	0.1 UJ	
Sodium	7440-23-5	14200	107000		59100	58100	
Thallium	7440-28-0	0.24 U	0.24 U		0.24 U	0.24 U	
Vanadium	7440-62-2	5 U	5 U		5 U	5 U	
Zinc	7440-66-6	33.8	9.9 J		7 J	7.4 J	

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Chemical Name	CAS No.	PW-01-R1	PW-07-R1	PW-08-R1	PW-09-R1	PW-09-R1D	PW-10ALT-R1
Miscellaneous (mg/L)							
Total Dissolved Solids	TDS	560	910		570	390	
Residue,non-filterable	010-17-3	10 U	10 U		10	10	
Total Organic Carbon	TOC	9.3 J	3.6 J		4.8 J	5.1 J	
Nitrate[asN]	14797-55-8	1 UJ	1 UJ		1 UJ	1 UJ	
Nitrite[asN]	14797-65-0	1 U	1 U		1 U	1 U	
Sulfide	18496-25-8	0.01 U	0.01 U		0.01 U	0.01 U	

Notes:
µg/L - microgram per liter
mg/L - milligram per liter
Qualifiers:
U - not detected
J - estimated value

Appendix C

Fate, Transport, and Toxicity of Chemicals of Potential Concern

Appendix C

Fate, Transport, and Toxicity of Chemicals of Potential Concern

C.1 Metals

Fate, transport and toxicity of 14 metals retained as COPCs are discussed in the following subsections.

C.1.1 Aluminum

Fate and Transport: Because of its strong reactivity, aluminum is not found as a free metal in nature. Aluminum has only one oxidation state (+3), thus its behavior in the environment depends on its ordination chemistry and the surrounding conditions. In soils, a low pH generally results in an increase in aluminum mobility. In water, an equilibrium with a solid phase is established that controls the extent of aluminum dissolution (ATSDR 2008a).

Plants vary in their ability to remove aluminum from soils, although bioconcentration factors for plants are generally less than one. Biomagnification of aluminum in terrestrial food chains does not appear to occur. There is no data on the biomagnification of aluminum in aquatic food chains (ATSDR 2008a).

Toxicity: The nervous system may be a target area for aluminum. Aluminum may also interact with neuronal DNA to alter gene expression and protein formation. Mammalian studies do not indicate that aluminum affects reproduction although some developmental effects have been reported in mammals (ATSDR 2008a). In animals, ingestion of aluminum at levels of 1,400 ppm lowered levels of inorganic phosphorus in blood and bones (HSDB 2010). Severe aluminum intoxication, characterized by lethargy, anorexia, or death, was observed in rats following parenteral or oral administration of aluminum hydroxide, chloride, or sulfate. Other studies have found that intratracheal instillation of aluminum salts or metallic aluminum powder has produced pulmonary fibroses (HSDB 2010). LD50 values for aluminum ingestion are typically unavailable because aluminum is only sparingly absorbed from the gut, and because death occurs from intestinal blockage due to precipitated aluminum species rather than systemic aluminum toxicity (HSDB 2010).

C.1.2 Antimony

Fate and Transport: Antimony is a silvery white metal of medium hardness and low solubility in water. Metallic antimony is stable under ordinary conditions and is not readily altered by air or water. Antimony displays four oxidation states, Sb(-3), Sb(0), Sb(+3), and Sb(+5); the +3 state is the most common and stable (ATSDR 1992). Very little antimony occurs free in nature, and most is derived from stibnite (Sb_2S_3), which contains 71 to 75 percent of this element when nearly pure. Mean antimony concentration in the earth's crust has been estimated to be 0.2 ppm (NAS 1980). Antimony can be released from volcanic eruptions, sea spray, and forest fires. The majority of antimony released to the environment arises from anthropogenic sources including nonferrous metal mining, smelting and refining; the production, use and disposal of antimony alloys and compounds; coal combustion; and refuse and sludge combustion.

The speciation and physicochemical state of antimony are important to its behavior in the environment and availability to biota. Antimony that is incorporated into mineral lattices is inert and not bioavailable. Mobility of antimony released to the soil is determined by the nature of the soil, the form of antimony deposited, and the pH of the soil. Antimony sorbs strongly to

soil and sediment; its sorption is primarily correlated with the content of iron, aluminum and manganese in the soil with which it coprecipitates as hydroxylated oxides (ATSDR 1992, Lintschinger *et al*. 1998). Trivalent antimony sorbs to soil more strongly than the pentavalent form (Lintschiner *et al*. 1998).

Antimony is transported into aquatic systems via natural weathering of soil and from anthropogenic sources. Antimony released to water will generally end up in sediment where it is associated with iron, manganese and aluminum hydroxyoxides. Antimony in aerobic water mostly occurs as Sb(+5), although small amounts of Sb(+3) are present. Trivalent antimony is the dominant form present in anaerobic water. Antimony can be reduced and methylated by microorganisms in anaerobic sediment, thereby mobilizing the antimony (ATSDR 1992). Methylated antimony compounds are soluble and readily oxidized (HSDB 2010).

Toxicity: The majority of effects in animals resulting from the inhalation of antimony is attributed to the accumulation of antimony dust in the lung (pneumoconiosis), which may progress to a proliferation of alveolar macrophages to fibrosis. The heart is another target organ in antimony exposure, resulting in altered blood pressure, increased heart rate, and decreased contractile force. Antimony is known historically for its emetic properties, causing vomiting, diarrhea, gastric discomfort, and ulcers. Dietary exposure studies have reported decreased hemoglobin and hematocrit levels, altered erythrocyte counts, and swelling of the hepatic cords (ATSDR 1992).

C.1.3 Arsenic

Fate and Transport: Arsenic has four valence states (-3, 0, +3, and +5), rarely occurring in its free state in nature. It is usually a component of sulfidic ores, occurring as arsenides and arsenates, along with arsenic trioxide, which is a weathering product of arsenides. Biotransformations may occur, resulting in volatile arsenicals that normally are returned to land where soil adsorption, plant uptake, erosion, leaching, reduction to arsines, and other processes occur. Inorganic arsenic is more mobile than organic arsenic, and thus poses greater problems by leaching into surface waters and groundwater. The trivalent arsenic species (+3) are generally considered to be more toxic, more soluble, and more mobile than As (+5) species (Eisler 1988a).

Arsenic in water exists primarily as a dissolved ionic species. Particulates account for less than one percent of the total measurable arsenic. Arsenates are more strongly adsorbed to sediments than are other arsenic forms. In bodies of water that become stratified in summer, arsenic released from sediments accumulates in the hypolimnion until turnover, when it is mixed with epilimnetic waters. This mixing may result in a ten to twenty percent increase in arsenic concentrations (Eisler 1988a).

Toxicity: Eisler (1988a) reports the following points: (1) arsenic may be absorbed by ingestion, inhalation, or permeation of the skin or mucous membrane, (2) cells accumulate arsenic by using an active transport system normally used in phosphate transport, (3) arsenicals are readily absorbed after ingestion, most being rapidly excreted in the urine during the first few days, (4) the toxicity of arsenicals conforms to the following order from greatest to least toxicity: arsines > inorganic arsenites > organic trivalent compounds (arsenoxides) > inorganic arsenates > organic pentavalent compounds > arsonium compounds > elemental arsenic, (5) solubility in water and body fluids appear to be directly related to toxicity, and (6) the mechanisms of

arsenical toxicity differ considerably among arsenic species, although signs of poisoning appear similar for all arsenicals.

The primary mechanism of inorganic trivalent arsenic toxicity is through reaction with sulfhydryl groups of proteins and subsequent enzyme inhibition; inorganic pentavalent arsenic does not react as readily with sulfhydryl groups. Inorganic trivalent arsenic interrupts oxidative metabolic pathways and sometimes causes morphological changes in liver mitochondria. Methylation greatly reduces the toxicity of inorganic arsenic (both trivalent and pentavalent) and is usually the major detoxification mechanism (Eisler 1988a).

The mechanism of organic arsenic toxicity begins with its initial metabolism to the trivalent arsenoxide form, followed by its subsequent reaction with sulfhydryl groups of tissue proteins and enzymes, to form an arylbis (organylthio) arsine. This form inhibits oxidative degradation of carbohydrates and decreases cellular ATP (Eisler 1988a).

C.1.4 Barium

Fate and Transport: Barium is widely distributed in both terrestrial and aquatic environments. Although it is found in most aquatic environments, most barium precipitates out in the form of insoluble salts (EPA 1986). Transport of barium by suspended sediments in lotic water bodies may be significant. Barium is not expected to bioconcentrate significantly in plants or freshwater aquatic organisms.

Barium occurs naturally in most surface water and groundwater. In groundwater and surface water, barium is likely to precipitate out of solution as an insoluble salt (EPA 1986). The chemical form of barium largely dictates its adsorption into soils and sediments. Barium in sediments is found largely in the relatively insoluble form of barium sulfate and also in the insoluble form of barium carbonate. Humid and fulvic acid have not been found to increase the mobility of barium (ATSDR 2007).

Toxicity: The oral toxicity of barium compounds depends on their solubility. The soluble compounds, which include the chloride, nitrate, and hydroxide are the most toxic. The insoluble sulfate and carbonate are relatively nontoxic. The cardiovascular system appears to be a primary target of barium toxicity in humans and laboratory animals (ATSDR 2007). Barium has no known function in vertebrates, although it has been reported that insufficient dietary barium may depress growth rate in laboratory animals (NRC 1980).

Barium interacts with potassium, calcium, and magnesium. It has been shown that barium produces hypokalemia (i.e., lowered blood potassium), possibly by causing the build-up of intracellular potassium, and that symptoms of cardiotoxicity, muscle weakness, and paralysis resulting from barium exposure can be reversed in humans by potassium treatment (ATSDR 2007).

C.1.5 Beryllium

Fate and Transport: Beryllium occurs naturally in the earth's crust, in coal, and in minerals such as plagiocase feldspar and beryl. Beryllium is found in the plant-derived organic component of coal (HSDB 2010). Beryllium is used in the manufacture of electrical components, in nuclear reactors, aerospace applications, ceramics and X-ray tubes. However, the majority of

anthropomorphically produced beryllium in the environment is the result of coal and oil combustion.

If released to soil, beryllium is expected to be essentially immobile. Based on its geochemical similarity to aluminum, beryllium may be expected to adsorb onto clay surfaces at low pH, and it may remain precipitated as insoluble complexes at higher pH (ATSDR 2002). Beryllium enters aquatic systems through the weathering of rock and soil, deposition of atmospheric beryllium, and discharge from anthropogenic sources. Under typical environmental conditions, the hydroxo-complex $BeOH^+$ and Be (+2) are expected to be the dominant dissolved forms present in aquatic systems. $Be(OH)_2$ is expected to precipitate from water based on its low solubility at the pH range of most natural systems. Beryllium may adsorb to suspended mineral solids and to sediment. Beryllium is not expected to bioconcentrate in aquatic animals and no evidence for significant biomagnification within food chains has been found (ATSDR 2002).

Toxicity: The respiratory tract in humans and animals is the primary target of inhalation exposure to beryllium and its compounds. Inhalation exposure to beryllium has been associated with lung cancer in animals. Inhalation of some forms of beryllium can cause obstructive and restrictive diseases of the lung, known as chronic beryllium disease (berylliosis), and inhalation of high concentrations can cause chemical pneumonitis. The development of chronic beryllium disease appears to involve cell-mediated immune responses that are genetically regulated (ATSDR 2002).

Oral exposure to beryllium compounds has been shown to result in hepatic necrosis. Ingested soluble beryllium compounds may interact with phosphate to form insoluble beryllium phosphate particles that are sequestered in Kupffer cells of the liver. Diffusion of beryllium from the deposited particulates may cause damage to these cells and necrosis of the liver. Beryllium may also be taken up by lysosomes and cause release of lysosomal enzymes, and it may interfere with DNA synthesis in the nucleus (ATSDR 2002).

The degree of beryllium toxicity to freshwater fishes is related to hardness, with toxicity decreasing with increasing hardness (EPA 1980). This is partially due to the increasing buffering capacity of hard water and the antagonism of calcium to beryllium. It is also possible that beryllium may penetrate to vital organs more readily in soft water than hard water. Beryllium toxicity to fish appears to be a function of the effects on vital organs, rather than a function of total beryllium uptake. In an uptake study in guppies, beryllium levels were shown to be highest in the gastrointestinal tract, followed by kidneys and ovaries. Pre-exposure to low levels of beryllium can increase the tolerance of fish to very high concentrations at a later time (Drury *et al.* 1978).

C.1.6 Copper

Fate and Transport: Copper is an essential element and widely distributed in nature (Amdur et al. 1993). Naturally occurring concentrations of copper have been calculated at 70 ppm in the earth's crust and 0.001 to 0.02 ppm in seawater (HSDB 2010). Artificial sources of copper include smelting processes and non-ferrous metal production. The terrestrial fate of copper is related to degree of weathering, the nature and intensity of soil formation, drainage, pH, re-dox potential and organic content (HSDB 2010). The relationship between pH and copper determines the fate of copper where alkaline conditions in soil and surface water promote precipitation while acidic conditions favor solubility of copper.

Toxicity: Copper is caustic, and acute toxicity is primarily related to this property (Hatch 1978). Copper is an essential element for animals and is a component of many metalloenzymes and respiratory pigments (Demayo *et al.* 1982). It is also essential for iron utilization and functions in enzymes for energy production, connective tissue formation, and pigmentation. Excess copper ingestion leads to accumulation in tissues, especially in the liver. High levels of copper modify hepatic metabolism (Brooks 1988), which may lead to inability of the liver to store and excrete additional copper. When the liver concentration exceeds a certain level, the metal is released into the blood, causing hemolysis and jaundice. High copper levels also inhibit essential metabolic enzymes (Demayo *et al*. 1982). Toxic symptoms appear when the liver accumulates 3 to 15 times the normal level of copper (Demayo *et al*. 1982).

C.1.7 Lead

Fate and Transport: Lead is present in the earth's crust at a concentration of approximately 15 g/ton. Lead naturally enters the environment from lead bearing minerals and median lead concentrations in soil are 15 to16 µg. The processes of erosion and leaching may transfer lead from soil into surface waters and the atmosphere. Anthropogenic sources via smelting, mining, ore processing, refining use, recycling or disposal, are the most common release sources of lead into the environment. In soil, lead is typically in the upper 2 to 5 cm and leaching is not expected to be significant. In water, precipitation of lead is significant if the pH is relatively high where the amount of lead that can remain in water is related to pH and dissolved salt content. Metallic lead will simply sink into the sediment and will adsorb to organic matter and clay minerals or precipitate out as an insoluble salt. Bioconcentration does not appear to be high in fish although BCFs for various saltwater bivalves, molluscs, diatoms and phytoplankton have been found to range from 1.24 after 56 days in hard clams to 3.40 after 130 days in mussels (HSDB 2010).

Toxicity: Lead does not biomagnify to a great extent in food chains, although accumulation by plants and animals has been extensively documented (Wixson and Davis 1993; Eisler 1988a). Older organisms typically contain the highest tissue lead concentrations, with the majority of the accumulation occurring in the bony tissue of vertebrates (Eisler 1988b).

The toxic effects of lead on aquatic and terrestrial organisms are extremely varied and include mortality, reduced growth and reproductive output, blood chemistry alterations, lesions, and behavioral changes. However, many effects exhibit general trends in their toxic mechanism. Generally, lead inhibits the formation of heme, adversely affects blood chemistry, and accumulates at hematopoietic organs (Eisler 1988b). At high concentrations near levels causing mortality, marked changes to the central nervous system occur prior to death (Eisler 1988b).

C.1.8 Manganese

Fate and Transport: Manganese does not occur as a free metal in the environment but is a component of numerous minerals. Elemental manganese and inorganic manganese compounds have negligible vapor pressures, but may exist in air as suspended particulate matter derived from industrial emissions or the erosion of soil. Removal from the atmosphere is mostly through gravitational settling. The transport and partitioning of manganese in water are controlled by the solubility of the specific chemical form present. The metal may exist in water in any of four oxidation states (2+, 3+, 4+, or 7+). Divalent manganese (Mn^{+2}) predominates in most waters (pH 4 to 7), but may become oxidized at a pH greater than 8 or 9. Manganese is often transported in moving water as suspended sediments. The tendency of soluble

manganese compounds to adsorb to soils and sediments depends mainly on the cation exchange capacity (CEC). Cation exchange capacity is related to soil's organic content and texture; where CEC increases with organic matter and in finer textured soils. Increasing pH also increases CEC. Adsorption of manganese and other metals to soil colloid particles increases with increasing CEC (Brady 1974). Manganese in water may be significantly bioconcentrated at lower trophic levels. However, biomagnification in the food chain may not be significant (ATSDR 2008b).

Toxicity: Manganese is a common element that is essential for normal physiologic functioning in all animal species. In most animals, the amount of manganese absorbed across the gastrointestinal tract is variable and less than 5 percent. There does not appear to be a marked difference between manganese ingested in food or in water. One of the key determinants of absorption appears to be dietary iron intake, with low iron levels leading to increased manganese absorption. This is probably because both iron and manganese are absorbed by the same transport system in the gut in aquatic and terrestrial species (ATSDR 2008b).

In studies where repeated oral doses were given to animals in an attempt to induce chronic manganese disease, moderate doses did not induce any injury (HSDB 2010). Female rats fed a concentration of 154 to 1004 mg/kg dry weight during pregnancy and weaning had fetuses with elevated concentrations of manganese in the liver although no gross malformations were observed (HSDB 2010). When manganese was administered orally to monkeys, degenerative, histological changes (demyelination of the posterior column) were observed in the chiasma and spinal cord (HSDB 2010).

C.1.9 Mercury

Fate and Transport: Mercury has been used by man for thousands of years, most recently as a fungicide in agriculture, in the manufacture of chlorine, sodium hydroxide, electronics, and plastics, as a slime control agent in the pulp and paper industry, and in mining and smelting operations (Eisler 1987a). Mercury is persistent in the environment, with organisms in contaminated habitats showing elevated mercury burdens for as long as 100 years after the pollution source has been removed (Eisler 1987a).

Mercury is present in the environment in both inorganic and organic forms. Inorganic mercury exists in three valence states: mercuric (Hg2+), mercurous (Hg1+), and elemental (Hg) mercury. Inorganic mercury compounds are less toxic than organomercury compounds; the mercuric ion is the most toxic inorganic chemical form (Clarkson and Marsh 1982). However, the inorganic forms are readily converted to organic forms by bacteria commonly present in the environment. The organomercury compound of greatest concern is methylmercury, due to its high stability, lipid solubility, and ability to penetrate membranes in living organisms (Beijer and Jernalov 1979). Mercury can become methylated biologically or chemically. Microbial methylation of mercury occurs most rapidly under anaerobic conditions, which are common in wetlands and aquatic sediments but may also be found in soils. Most mercury detected in biological tissues is present in the form of methylmercury (Huckabee *et al*. 1979), which is known to biomagnify in food chains.

Toxicity: Mercury is a highly toxic mutagenic and teratogenic compound with no known natural biological function. A number of toxic effects of mercury exposure have been reported, although little information is available regarding its effect on terrestrial plants. In birds, mammals, and fish, mercury acts as a potent neurotoxin, resulting in impaired muscular

coordination, vision, and hearing; depressed growth and reproduction; weight loss; and apathy, with early developmental stages being the most sensitive (Eisler 1987a). Other effects include changes in enzyme activity levels and histopathology. In mammals, methylmercury irreversibly destroys the neurons of the central nervous system.

C.1.10 Nickel

Fate and Transport: Pure nickel is a hard, white metal that is usually used in the formation of alloys (such as stainless steel), and nickel combined with other elements is found in all soils. Nickel is the twenty-fourth most abundant element and is found in the environment as oxides or sulfides. It may be released into the environment through mining, oil-burning power plants, coal-burning power plants, and incinerators. Nickel will attach to soil or sediment particles, especially those containing iron or manganese. Under acidic conditions, nickel may become more mobile and seep into the groundwater. The typical nickel concentration reported in soils is from 4 to 80 mg/kg. The speciation and physicochemical state of nickel is important in considering its behavior in the environment and its availability to biota (ATSDR 2005).

Toxicity: The most probable exposure routes of nickel are through dermal contact, inhalation of dust, and ingestion of nickel-contaminated soil. The respiratory system is the primary target of nickel exposure following inhalation. Manifestations such as inflammation of the lungs, fibrosis, macrophage hyperplasia, and increased lung weight have been noted in animals exposed to nickel. Animals (species not given) exposed to nickel through oral exposure were noted to have lethargy, ataxia, irregular breathing, salivation, and squinting (ATSDR 2005).

In a 1.5 year study on the effects of nickel inhalation in guinea pigs, rats, mice and hamsters, 15 g/m^3 of metallic nickel powder caused lung irritation in rats and guinea pigs and nasal sinus inflammations and ulcers in rats. No adverse effects and no tissue accumulation were observed in 104 mice administered 5 ppm of nickel in drinking water for the duration of their life. The prenatal effects of nickel result from direct insults to the mammalian embryo and from indirect effects of maternal damage.

Maternally, nickel may upset the mother's hormonal balance thereby impairing the development of the preimplantation embryo. The fetus is affected as nickel can cross the feto-maternal barrier and directly enter the fetus. In addition to increases in prenatal and neonatal mortality, nickel can produce different types of malformations in the surviving embryos but its teratogenic action seems to be delayed, probably as a result of retarded transfer via the placenta. However, no definite conclusions can be reached as to whether the embryotoxicity and fetal toxicity of nickel are eventually related to its mutagenic properties. Nickel alters macromolecular synthesis but no convincing evidence has been provided of its ability to produce gene mutations or structural chromosome aberrations in mammalian cells (HSDB 2010).

C.1.11 Selenium

Fate and Transport: Selenium was used as a plant pesticide in the early 1900's and is still used sparingly to control pests of greenhouse chrysanthemums and carnations (Rosenfeld and Beath 1964, as cited by Eisler 1985a). The use of selenium pesticides has generally been discontinued, however, because of their high price, their stability in soils and resultant contamination of food crops, and their proven toxicity to mammals. Shampoos containing small amounts (about 1 percent) of selenium are still used to control dandruff, dermatitis, and mange (Eisler 1985a).

Selenium is also extensively used in the manufacture and production of glass, pigments, rubber, metal alloys, textiles, petroleum, medical therapeutic agents, and photographic emulsions. Selenium chemistry is complex; there are six stable isotopes of varying allopatric forms and valence states. Isotopes Se-80 and Se-78 are the most common. Soluble selenates (+6), which are readily taken up by plants, occur in alkaline soil and are slowly reduced to less soluble selenites (+4). In acid or neutral soils, the amount of biologically available selenium steadily declines; selenites are easily reduced to elemental selenium, which is insoluble and largely not bioavailable, although it is capable of satisfying nutritional requirements for selenium (Eisler 1985a). Selenium volatilizes from soils at rates that are modified by temperature, moisture, time, season, concentration of water-soluble selenium, and microbiological activity (Eisler 1985a). Selenium bioaccumulates, but does not appear to biomagnify.

Toxicity: Selenium is an essential nutrient for some plants and animals, constituting an integral part of proteins and enzymes including cytochrome C, hemoglobin, myoglobin, myosin, glutathione peroxidase, and various ribonucleoproteins (Eisler 1985a). It may also play a role in the formation of other compounds, such as vitamin E and the enzyme formic dehydrogenase. In many systems, selenium deficiency is a greater problem than selenium toxicity, though the dividing line between selenium acting as a micronutrient or as a toxin may be fine. Additionally, sensitivity to selenium varies widely, even among similar taxonomic groups (Eisler 1985a).

Selenium accumulation in certain species of plants may be extremely high. Plants that accumulate selenium tend to be more deep-rooted than grasses, thereby serving as principal forage for herbivorous animals during dry conditions and potentially leading to high rates of selenium intake. Toxic effects resulting from consumption of selenium accumulating plants include reproductive sterility, congenital malformations, growth retardation, anemia, respiratory failure, chromosomal aberrations, intestinal lesions, behavioral modifications, and death (Eisler 1985a). Selenium appears to bioaccumulate in animals as well as plants, since concentrations tend to be higher in older than in younger individuals. However, some organisms (e.g., rats) appear able to regulate selenium. Excretion occurs primarily through urine, with smaller amounts excreted in feces, breath, perspiration, and bile (Eisler 1985a).

C.1.12 Thallium

Fata and Transport: Thallium is a common element with a concentration of about 0.3 to 0.6 ppm in the earth crust (HSDB 2010). The metal cation commonly occurs in potash minerals, pyrites, and is a minor constituent of many iron, copper sulfide and selenite ore; in nature it does not occur in the elemental state. It is one of the most toxic of the heavy metals. Metallic thallium is soft and malleable, similar to lead in both appearance and physical properties. Freshly-prepared thallium oxidizes rapidly. Thallium is mainly used in the electrical and electronic industries, and in the production of special glasses. Thallium is also found in pyrites used to make sulfuric acid. Mining and smelting, sulfuric acid production, cement factories, and coal burning power plants are the major anthropogenic sources of thallium to the environment (Mulkey and Oehme 1993).

Toxicity: Thallium has been shown to adversely affect protein synthesis. Mammalian ribosomes are strictly dependent on potassium and magnesium for normal interactions between ribosomal subunits. Thallium (+) can replace K+ causing progressive destabilization and irreversible damage to ribosomes. Interactions between thallium and riboflavin may play a role

in toxicity. Thallium may impair cell energy metabolism by causing a deficiency of riboflavin and riboflavin-derived cofactors (Mulkey and Oehme 1993).

Thallium is teratogenic in chick embryos, causing achondoplasia, leg bone curvature, parrot-beak deformity, microcephaly, and decreased fetal size. Teratological investigations in mammals have produced conflicting results (Mulkey and Oehme 1993).

C.1.13 Vanadium

Fate and Transport: Elemental vanadium does not occur free in nature but is a component of dozens of different minerals and fossil fuels (EPA 2005). Anthropogenic sources include acid-mine leachate, sewage sludge, and fertilizers. It is also a by-product of petroleum refining and the combustion of hydrocarbon fuels (EPA 2005). Vanadium is principally used as an alloy constituent, especially in steel, as well as in pigment manufacturing, photography, and insecticides.

Vanadium can take various valence states, from +2 to +5. It is found in rocks and soil in the relatively insoluble trivalent form, and as vanadates of a variety of metals in the +5 oxidation state. (EPA 2005). It can also form both cationic and anionic salts. The release of vanadium to soil occurs as a result of the weathering of rocks and from soil erosion, both of which generally convert the less-soluble trivalent form to the more-soluble pentavalent form. Mobility of vanadium in soils is determined by pH, Eh, and organic content. In contrast to most metals, vanadium is fairly mobile in neutral or alkaline soils and less mobile in acidic soils. Soluble vanadium in soils appears to be easily taken up by plant roots (Hopkins *et al.* 1977, as cited by EPA 2005). Vanadium is not considered bioaccumulative.

Toxicity: Toxicity of vanadium has not been demonstrated in plants. In animals, the toxic action is largely confined to the respiratory tract, because inhalation is the most common route of exposure; absorption of vanadium through the gastrointestinal tract of animals is low. Inhalation of vanadium damages the alveolar macrophages by decreasing the macrophage membrane integrity; damaged macrophages inhibit the ability of the respiratory system to clear itself of other particles. However, ingestion of high concentrations of vanadium compounds (V_2O_5) may lead to acute poisoning characterized by marked effects on the nervous system, hemorrhage, paralysis, convulsions, and respiratory depression. Subacute exposures at high concentrations may adversely affect the liver, adrenals, and bone marrow (Klassen *et al.* 1986). In vitro experiments in mice indicate that the mechanism of toxicity of vanadium is by inhibiting sodium-potassium ATPase activity, which inhibits the sodium-potassium pump. This pump is necessary for the transport of material across cell membranes (Nechay and Saunders 1978).

C.1.14 Zinc

Fate and Transport: Zinc occurs naturally in the earth's crust. It is used primarily in the production of brass and other alloys, galvanization of iron and steel products, and formulation of white pigments. It is also used as a fungicide in agriculture and is applied to soils to prevent zinc deficiency (Eisler 1993). Anthropogenic releases of zinc in the environment occur through smelting and ore processing, mine drainage, sewage, combustion of solid wastes and fossil fuels, road surface runoff, corrosion of zinc alloys and galvanized surfaces, and erosion of agricultural soils (Eisler 1993).

Zinc is not found free in nature, but often occurs in the +2 oxidation state as zinc sulfide, zinc carbonate, or zinc oxide. Zinc compounds also exist in the particulate phase in the atmosphere and are physically removed from the air by wet or dry deposition. Zinc is strongly adsorbed to soil at pH 5 or greater, and zinc compounds have low mobility in most soils (Blume and Brummer 1991). Clay minerals, hydrous oxides, and pH are the most important factors controlling zinc solubility. Soluble forms of zinc are readily absorbed by plants. Uptake is dependent on soil type; for example, uptake is lower in coarse loamy soils than in fine loamy soils (Chang et al. 1983, as cited by Eisler 1993). Zinc is essential for normal growth and reproduction in plants and animals and is regulated by the body.

Toxicity: Because zinc is an essential element, maintaining a balance between excess and insufficient zinc is important. Zinc deficiency occurs in many species of plants and animals and has severe adverse effects on all stages of growth, development, reproduction, and survival (Eisler 1993). Zinc is a component of several essential enzymes that regulate the biosynthesis and catabolic rate of RNA and DNA.

A wide safety margin appears to exist between required and toxic zinc intakes. However, high levels of zinc can cause copper deficiency and interfere with metabolism of calcium and iron (Goyer 1986, as cited by Eisler 1993). Terrestrial plants growing in soil with high zinc concentrations (such as beneath corroded galvanized fencing or near zinc smelters) showed poor seedling establishment and decreased photosynthesis, respiration, and seedling root elongation, resulting in negative impacts on measures of species richness and abundance (Nash 1975, as cited by Eisler 1993). Zinc poisoning has also been documented in a variety of animal species, usually through the ingestion of zinc-containing products such as galvanized metal objects, zinc containing coins, and skin and sunblock preparations containing zinc oxide (Eisler 1993).

The pancreas and bone seem to be the primary targets of zinc toxicity in birds and mammals. Signs of acute poisoning include impaired reproduction, anorexia, depression, enteritis, diarrhea, decreased milk yield, decreased growth, excessive eating and drinking and, in severe cases, convulsions and death (Ogden *et al.* 1988, as cited in Eisler 1993). Zinc preferentially accumulates in bone, where it induces osteomalacia, a softening of bone caused by a deficiency of calcium, phosphorus, and other minerals (Kaji *et al*. 1988). Pancreatic effects include reduced activity of digestive enzymes, cytoplasmic vacuolation, cellular atrophy, and cell death (Lu and Combs 1988, Kazacos and Van Vleet 1989).

C.2 Volatile Organic Compounds

Fate, transport, and toxicity of VOCs retained as COPCs, are discussed in the following subsections.

C.2.1 4-Chlorobenzotrifluoride

Fate and Transport: 4-Chlorobenzotrifluoride's primary uses include an intermediate for dyes, pharmaceuticals, and pesticides, and as a solvent and dielectric fluid. If released to air 4-chlorobenzotrifluoride will exist solely as a vapor in the ambient atmosphere, and will degraded slowly via reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 67 days. If released to soil, 4-chlorobenzotrifluoride is expected to have slight mobility.

If released into water, 4-chlorobenzotrifluoride is expected to adsorb to suspended solids and sediment. Volatilization from water surfaces may be an important fate process with estimated volatilization half-lives for a model river and model lake of 4.0 hours and 5.3 days, respectively. However, volatilization is expected to be attenuated by adsorption to suspended solids and sediment in the water column. An estimated BCF of 320 suggests the potential for bioconcentration in aquatic organisms is high (HSDB 2010).

Toxicity: Little information was located regarding the toxicity of 4-chlorobenzotrifluoride. Preliminary toxicity evaluations (exposure time = 72 hours) on mice was tested at concentrations of 0.1, 1.0, 10.0, 20.0 and 40.0nl/ml, resulting in a range of 80% to 50% relative survival.

In a two-generation reproduction study, male and female rats were orally exposed to 4-chlorobenzotrifluoride via corn oil vehicle by gavage at dosage levels of 0, 5, 15 or 45 mg/kg/day for 4 weeks prior to mating with animals of the same group, and continuing through one reproduction period until F1 litters had been weaned. Randomly selected F1 pups were orally exposed by gavage at the same concentration as their parents for 90 days and were then sacrificed. Significant differences between treated and control F0 rats were observed and included decreased and/or increased weight gain for high- and mid-dose animals. Significant differences between treated and control F1 rats were observed and included weight gain (increased for all treated male groups, decreased for high-dose females), decreased monocytes, increased serum glutamic-pyruvic transaminase,, increased mean pups/litter, increased percentage surviving pups and pup weights (all treated groups), decreased erythrocyte counts, decreased mean corpuscular hemoglobin, increased mean corpuscular volume, and an increase in pathology of the lung including bronchopneumonia, adenomous hyperplasia, and inflammatory cell infiltrates (HSDB 2010).

C.2.2 Fluorobenzene

No information on the fate, transport, or toxicity of fluorobenzene was located.

C.3 Semi-volatile Organic Compounds

Fate, transport, and toxicity of SVOC COPCs are discussed in the following subsections. Compounds classified as PAHs are discussed collectively. Information for several SVOC COPCs was extremely limited or was not located. In such instances, no discussions are made. Specific compounds for which no information was available include 2-bromopyridine, 3-amino-4-chlorobenzotrifluoride, 3-nitro-4-chlorobenzotrifluoride, and 4-bromofluorobenzene.

C.3.1 Carbazole

Fate and Transport: Release of carbazole into the environment occurs primarily by emissions from waste incineration; tobacco smoke; petroleum, coal and wood combustion; and in the effluents of wood treating facilities. Carbazole occurs naturally in coal, petroleum and peat and will be released into the environment through incomplete combustion of these materials (HSDB 2010). With an average Koc value of 637, it is assumed that carbazole is not very mobile in soil but may biodegrade in soil and water if specific degrading bacteria are present (HSDB 2010). Bioconcentration and volatilization are not important in aquatic systems.

Toxicity: An LD50 of greater than 5,000 mg/kg was calculated for rats in an oral dosing study (HSDB 2010). Male (50) and female (50) mice were fed a pellet diet containing technical grade

carbazole (purity, 96 percent) at concentrations of 0.6, 0.3 or 0.15 or 0.0 (control) for 96 weeks. Upon examination, neoplastic lesions were found in the liver and forestomach, and the liver lesions were classified as neoplastic nodules and hepatocellular carcinomas (HSDB 2010). The incidence of lesions was significantly greater in the highest dosed animals.

C.3.2 4-Methylphenol

Fate and Transport: 4-methylphenol, also commonly referred to as p-cresol, is released in auto and diesel exhaust, during coal tar refining, wood pulping, and during its use in manufacturing and metal refining. It is also used as a gelatinizing and waterproofing agent in explosives and in the synthesis of trinitrotoluene (TNT), urethane polymers, flexible and rigid foams, surface coatings, and dyes (HSDB 2010).

When released into water, biodegradation is the dominant loss mechanism. Volatilization and adsorption to sediment are not considered an important fate processes. Photolysis is expected only in the surface waters of oligotrophic lakes. Its fate in soil has not been extensively studied. However, it is anticipated to biodegrade in soil. Given an estimated BCF of 12, 4-methylphenol is not expected to bioconcentrate appreciably (HSDB 2010).

Toxicity: In an outdoor experimental stream, this compound's primary effect on the flora and fauna community was the interference with the photosynthetic and respiration processes (HSDB 2010).

In mammals, signs of acute 4-methylphenol poisoning include muscular convulsions, coma, and death from respiratory paralysis. The acute oral LD50 for 4-methylphenol in dogs is 4 mg/kg. 4-Methylphenol is a general protoplasmic poison and is toxic to all cells. It is also a potent hepatocarcinogen (HSDB 2010).

C.3.3 2-Methylphenol

Fate and Transport: 2-methylphenol, also commonly referred to as o-cresol, is used as a solvent, disinfectant and chemical intermediate in the production of synthetic resins. It may also be released into the environment through automobile exhaust, coal tar and petroleum refining and wood pulping. If released to air, vapor-phase 2-methylphenol will degraded in the atmosphere with an estimated half life of 9 hours. If released to soil, it is expected to be highly mobile; however, it expected to biodegrade rapidly based upon half-lives of 1.6 and 5.1 days. If released into water, it is not expected to adsorb to suspended solids and sediment, and is expected to biodegrade in water based on a reported half-life of 50 days in southern California coastal waters and a half-life of 20 days in gasoline contaminated groundwater. Estimated volatilization half-lives for a model river and model lake are 21 and 235 days, respectively. An estimated BCF of 6 suggests the potential for bioconcentration in aquatic organisms is low (HSDB 2010).

Toxicity: Studies on aquatic organisms have shown that 2-methylphenol is moderately toxic to aquatic bacteria, cyanobacteria (blue-green algae) and protozoa. Tilapia exposed to a sublethal concentration of 2-methylphenol for 30 days was observed to show degenerative changes. A LC50 value for a 96 hour exposure of 23.5 mg/L resulted in pathological changes such as vacuolation, necrosis, interzonal separation, blood capillary dilation, and fibrosis in the optic tectum.

In mammals, signs of acute 2-methylphenol poisoning include muscular convulsions, coma, and death. An acute oral LD50 value for the rat was 1.35 g/kg and 344 mg/kg for the mouse; LD50 for dermal exposure for the mouse was 620 mg/kg (HSDB 2010).

C.3.4 Benzaldehyde

Fate and Transport: Benzaldehyde is a naturally occurring volatile plant product with a characteristic bitter almond aroma. It is found in almonds, apricot, peach, and cherry seeds, and is used in dyes, drugs, perfumes, and flavoring agents. It is also a byproduct of toluene degradation in the atmosphere.

If released to the atmosphere, benzaldehyde will degrade by reacting with photochemically produced hydroxyl radicals. Estimated soil organic carbon-water partitioning coefficients (Koc) for benzaldehyde suggest that it will leach readily in soils. A number of biological screening studies have demonstrated that benzaldehyde is readily biodegradable. If released into water, benzaldehyde is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. It is not believed to bioaccumulate (HSDB 2010).

Toxicity: Two year studies were conducted by administering various concentrations of benzaldehyde in corn oil by gavage to groups of 50 male mice. The only effects of benzaldehyde were those seen in the forestomach of mice. The incidences of uncommonly occurring squamous cell papillomas of the forestomach in both exposure groups were significantly greater than those in controls. Little information was available on the toxicity of benzaldehyde in aquatic organisms. A study using the fathead minnow derived an LC50 of 35 mg/L/24 hr and 7.6 mg/L/96 hr. An additional study derived an LC50 for Daphnia magna exposed to 50 mg/L 24hr (HSDB 2010).

C.3.5 Dibenzofuran

Fate and Transport: Dibenzofuran can be found in coal-tar, heat-transfer oils, used as a carrier for dyeing and printing textiles, as an intermediate for production of dyes, and as an antioxidant in plastics. If released to air dibenzofuran will exist solely as a vapor in the ambient atmosphere. Half-life in air is estimated to be 4 days. If released to soil, dibenzofuran is expected to have slight mobility; adsorption to soil is expected to attenuate volatilization. Indigenous soil microorganisms at contaminated sites can degrade dibenzofuran if stimulated. If released into water, dibenzofuran is expected to adsorb to suspended solids and sediment. Biodegradation screening tests indicate that dibenzofuran is not readily biodegradable. However in some laboratory studies, dibenzofuran was degraded in a few days using subsurface materials which had been contaminated by creosote chemicals. Once microbial adaptation had occurred, dibenzofuran rapidly biotransformed under aerobic conditions. Estimated volatilization from water half-lives for a model river and model lake are 5 hours and 7 days, respectively. However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment. BCF values for fish of 524 to 947 are high and from 1,100 to 2,420 are very high (HSDB 2010).

Toxicity: Little toxicity information was located for dibenzofuran. Two studies using the water flea report LC50s of 7500 µg/L for a 24 hour test and 1700 µg/L for a 48 hour test (HSDB 2010).

C.3.6 4-Chlorophenyl phenyl ether

Fate and Transport: 4-Chlorophenyl phenyl ether is used as a dielectric fluid, and can be released to the environment during its manufacture, formulation, and through its use in capacitors. If released to the atmosphere, 4-chlorophenyl phenyl ether should react with photochemically produced hydroxyl radicals with an estimated half-life of 1.3 days. 4-Chlorophenyl phenyl ether should be expected to undergo biodegradation in soil and in water. 4-Chlorophenyl phenyl ether should display slight mobility in soil, and volatilization to the atmosphere may be an important process. If released to water, 4-chlorophenyl phenyl ether would be expected to adsorb to sediment and suspended material, can volatilize to the atmosphere, and should bioaccumulate in aquatic organisms. Degradation by direct photolysis in surface water has been estimated to proceed with a half-life of 200-400 days. The estimated volatilization half-life for a model river is 6 hours, while from a model pond which takes into account adsorption processes, the estimated half-life is 40 days (HSDB 2010).

Toxicity: Information regarding the toxicity of 4-chlorophenyl phenyl ether could not be located.

C.3.7 Atrazine

Fate and Transport: Atrazine's production may result in its release to the environment through various waste streams; it's use as a pre- and postemergence herbicide will result in its direct release to the environment. Atrazine is the most heavily used pesticide in the United States. If released to air, atrazine will exist in both the vapor and particulate phases in the ambient atmosphere; half-life is estimated to be 14 hours. Particulate-phase atrazine will be physically removed from the atmosphere by wet and dry deposition.

When released to soil, atrazine is expected to have high to slight mobility. Biodegradation of atrazine in soil varies as it is affected by the moisture content, pH and temperature of the soil. If released into water, atrazine may adsorb somewhat to suspended solids and sediment. The half-life of atrazine in an anaerobic wetland sediment was determined to be 224 days with no carbon present; the only metabolite present during degradation was hydroxyatrazine. A BCF range of <0.27 to 132 in aquatic organisms suggests bioconcentration in aquatic organisms is low to moderate (HSDB 2010).

Toxicity: Weakness, tremors, ataxia, and weight loss occurred in mallards. Signs appeared 1 hour after oral treatment and persisted up to 11 days. Atrazine exposure less than or equal to 0.1 ppb resulted in reproductive effects in leopard frogs. Similar effects were noted in laboratory-based studies using African clawed frog. Atrazine-induced mortality was found to occur in rats via respiratory distress and paralysis of the limbs. Minor pathological changes were noted even at a dosage of 0.1 mg/kg/day.

Atrazine in the aquatic environment results in adverse effects to aquatic organisms, especially fish. Carp, bluegill, and guppy exposed for 96 hours resulted in LC50s at 76 mg/L, 16 mg/L, and 4.3 mg/L, respectively (HSDB 2010).

C.3.8 2,4-Dimethylphenol

Fate and Transport: 2,4-Dimethylphenol is used in the production and preparation of coal tar disinfectants, the manufacture of artificial resins, as a constituent of coal tar creosote, and as a component of gasoline, rubber, and automobile and diesel exhaust. 2,4-Dimethylphenol has been found to occur naturally in tobacco and marijuana smoke and in black tea.

If released to air, 2,4-dimethylphenol will exist solely as a vapor in the ambient atmosphere; half-life in air is estimated to be 5.3 hours. If released to soil, 2,4-dimethylphenol is expected to have moderate mobility. Complete biodegradation of 2,4-dimethylphenol may occur within a few days. If released into water, 2,4-dimethylphenol is expected to adsorb very little to suspended solids and sediment. Biodegradation varies and is dependent on water chemistry. n under anaerobic conditions failed to occur in one study and 48% degradation occurred after 8 weeks in another study. Estimated volatilization half-lives for a model river and model lake are 3 days and 22 days, respectively. A BCF of 150 in bluegill sunfish suggests the potential for bioconcentration in aquatic organisms is moderate.

Toxicity: Oral LD50 values for the rat and mouse were 2300 mg/kg and 809 mg/kg, respectively. Embryos of fathead minnows were more resistant to 2,4-dimethylphenol than were larval or juvenile life stages. Growth of 28-day old fish was the most sensitive indicator of stress during exposure to 2,4-dimethylphenol. Based on these studies a maximum acceptable toxicant concentration (MATC) of 1,970 to 3,110 µg/L was established for fathead minnows in Lake Superior. Other tests using fathead minnows exposed for 96 hours resulted in LC50 values ranging from 16.6 mg/L to 17 mg/L (HSDB 2010).

C.3.9 3,4-Dichlorobenzotrifluoride

Fate and Transport: 3,4-Dichlorobenzotrifluoride is used in the manufacture of herbicides. If released to soil, 3,4-dichlorobenzotrifluoride is expected to have slight mobility. 3,4-Dichlorobenzotrifluoride may potentially volatilize from dry soil surfaces based upon its vapor pressure. However, adsorption to soil is expected to attenuate volatilization. If released into water, 3,4-dichlorobenzotrifluoride is expected to adsorb to suspended solids and sediment. Estimated volatilization half-lives for a model river and model lake are 4.3 hours and 5.8 days, respectively. However, volatilization is expected to be attenuated by adsorption to suspended solids and sediment in the water column. A mean BCF of 1,500 in rainbow trout suggests bioconcentration in aquatic organisms is very high. Biodegradation is expected to be slow because of the high number of halogens (HSDB 2010).

Toxicity: Little toxicity information was located. 3,4-Dichlorobenzotrifluoride is moderately irritating to rabbit skin and slightly irritating to rabbit eye. Oral doses in rats resulted in an LD50 of 1.15 g/kg and produced: salivation, chromorhinitis, tremors, lethargy, body rigidity, and diarrhea. Necropsy findings included hemorrhagic lungs and darkened liver (HSDB 2010).

C.3.10 Poly Aromatic Hydrocarbons

Fate and Transport: Polycyclic aromatic hydrocarbons (PAHs) are organic substances made up of carbon and hydrogen atoms grouped into at least two condensed aromatic ring structures. These are divided into two categories: low molecular weight compounds composed of fewer than four rings and high molecular weight compounds of four or more rings.

PAHs can be introduced to the environment by residential wood burning, cooking foods, and combustion of fossil fuels, as well as discharges from industrial plants, waste water treatment plants, and escape from waste storage containers. Other industrial sources of PAHs are machine lubricating, cutting, and color printing oils. PAHs are found in creosote which is used as a wood preservative. PAHs are also found in coal tar which is used in roofing, surface coatings, and as a binder for aluminum smelting electrons in the aluminum reduction process. PAHs are released to the environment in nature by volcanic activity and forest fires. Only a few

PAHs are produced commercially. In general, PAHs are unintentionally generated during combustion or pyrolysis processes (HSDB 2010).

Toxicity: In general, it appears that toxicity associated with PAHs is due not to the initial compound, but rather to metabolized intermediates (Fourman 1989). The majority of the enzymatic activity associated with the metabolism of PAH compounds takes place in the liver (Fourman 1989). The first step in the metabolic process is the oxidation of PAHs by cytochrome P450 and P448 enzyme systems. The metabolic by-products go through a series of reactions, ultimately forming diol-epoxides and phenol-oxides, which are believed to be the carcinogenic intermediates of PAHs (Stein *et al.* 1990). These compounds have the ability to form DNA adducts by covalently bonding with genetic material (Varnasi *et al.* 1989). Metabolic activation of PAHs can also involve the formation of free radicals and carbonium ions as metabolized intermediates; these are potential carcinogens and will affect metabolic pathways (HSDB 2010).

PAHs are also potent immunotoxic compounds, suppressing humoral and cell-mediated immune response. Many PAHs have been shown to adversely affect host tumoricidal activities, resulting in tumor formation (Peakall 1993). For example, application of carcinogenic PAHs to skin leads to destruction of sebaceous glands, hyperplasia, hyperkeratosis, ulceration, and potential tumor induction (Eisler 1987b).

Target organs for PAH toxic effects are diverse because these compounds are extensively distributed in the body and they tend to selectively attack proliferating cells. Damage to the hematopoietic and lymphoid system in experimental animals is common. Target organs can also be species specific. In rats, the target organs for 7,12-dimethylbenz(a)anthracene are skin, small intestine, kidney and mammary gland, whereas in fish the primary target organ is the liver (Eisler 1987b).

C.4 Pesticides

Fate, transport, and toxicity of pesticides retained as COPCs, are discussed in the following subsections.

C.4.1 4,4'-DDT and it's metabolite 4,4'-DDE

Fate and Transport: DDT's former production and use in the US as an insecticide resulted in its direct release to the environment. Reported half-lives for DDT in soils ranged from 2 years to > 15 years which indicates that DDT is expected to persist in aerobic terrestrial environments. It may be less persistent in anaerobic conditions based on half-lives as low as 7 hours to 6.98 days in sediments and sludge. If released into water, DDT is expected to adsorb strongly to suspended solids and sediment. Biodegradation in aquatic environments is variable, with no observable degradation in marine waters, degradation rates of 67% after 24 weeks in sediments, and up to 95% conversion to DDD in river water samples. Measured BCF values in aquatic organisms range from 600 to 84,500 suggesting that bioconcentration in aquatic organisms is

very high. DDT undergoes base catalyzed hydrolysis with a half-life of 81 days to DDE, which does not hydrolyze. Hydrolysis of DDT under acidic conditions is very slow, with a reported half-life of 12 years. Although DDT is no longer used in the US, the general population continues to be exposed to this compound due to its persistent half-life in the environment (HSDB 2010).

Toxicity: DDT and its metabolites appear to affect the reproductive success of many receptors. One well documented response is eggshell thinning in birds exposed to p,p'-DDE, which affects the activity of Ca2+ ATP-ase systems in the shell gland, thereby interfering with the deposition of calcium in the shell (Lundholm 1987; Lundholm 1988; Miller et al. 1976). Eggshell thinning of greater than 20 percent has been associated with decreased nesting success due to eggshell breakage (Anderson and Hickey 1972, Dilworth et al. 1972). Because of the tendency of DDT to magnify in food chains, higher trophic level birds (i.e., piscivorous raptors) appear to be at greater risk for egg loss due to shell thinning.

Another well-defined effect of DDT exposure is inhibition of acetylcholinesterase (AChE) activity. Inhibition of this enzyme results in the accumulation of acetylcholine in the nerve synapses, resulting in disrupted nerve function. Chronic inhibition of 50 percent of brain AChE has been associated with mortality in birds.

The effects of DDT on other receptor groups are not as clearly defined as in birds. Recent studies indicate that DDT (especially o,p' isomers) may mimic estrogen, resulting in adverse reproductive effects. Observed effects include feminization and increased female:male population ratios for some receptors. Other responses include histopathological changes, alterations in thyroid function, and changes in the activity of various enzyme groups (Peakall 1993).

C.4.2 Endrin Ketone

Fate and Transport: No information for endrine ketone was located; however, information was found for its parent compound endrin. Thus, the following discussion addresses endrin instead of the breakdown product endrin ketone. Formulations of endrin generally contain impurities of related compounds, including endrin aldehyde and endrin ketone. These two chemicals are also known to be metabolites of the parent endrin compound.

Endrin was used as an insecticide, avicide, and rodenticide. Its general toxic effects include ataxia, slowness, drowsiness, tremors, tracheal congestion, prostration, convulsions, wing-beat convulsions, and opisthotonos. When endrin is released into the soil, it is not expected to migrate into the groundwater due to its expected strong adherence to soil particles. However, the detection of small amounts of endrin in some samples of groundwater indicate that some migration is possible. Endrin will persist in soil for long periods of time (up to 14 years or more). Small amounts of endrin may volatilize, and it has been shown to photodegrade to endrin ketone. However, biodegradation and hydrolysis are not important removal mechanisms. When endrin enters aquatic systems, it is expected to adsorb strongly to sediments, thus providing a potential aquatic transport mechanism, and evaporation from water is not expected to be significant. Endrin aldehyde and endrin ketone are expected to have a very similar fate in the environment as endrin (HSDB 2010).

Toxicity: The toxic mechanism of endrin is believed to include inhibition of the brain-specific (35)S-t-butylbicyclophosphorothionate binding site. It has also been shown that endrin produces specific alterations in unmyelinated fiber bundles of peripheral nerves but does not affect myelinated fibers. A variety of metabolites of endrin have been identified, including endrin ketone (12-ketoendrin) and endrin aldehyde, as mentioned previously. Additional metabolites that are believed to be significant include 9-ketoendrin, 9-hydroxyendrin, 3-hydroxyendrin, and trans-4,5-dihydroisodirn-4,5-diol.

In birds, a diet including 20 ppm of endrin produced anorexia, ataxia, convulsions, and death. The 30-day empirical minimum lethal dose for mallards has been calculated to be 0.25 mg/kg BW/day for both sexes. The reproductive and developmental effects of endrin in birds, as in mammals, have also been shown to be similar. For example, reduced egg production in quail and pheasants as well as reduced chick survival in pheasants have been observed as a result of exposure to endrin, but no reproductive effects were observed at similar concentrations in mallard ducks (HSDB 2010).

In mammals, the acute toxicity of endrin has been tested in a variety of species, and the oral LD50s ranged from 1.3 mg/kg in mice to 36 mg/kg in male Guinea pigs. Similar results have been obtained regarding the teratogenicity of endrin. For example, in one study in which one-half the LD50 was administered to pregnant hamsters and mice, increased fetal deaths, open eye, webbed foot, cleft palate, and fused ribs were observed in young hamsters, but not in young mice. Other studies have indicated that dietary levels that do not injure the parents do not adversely affect development of the offspring. Endrin aldehyde is slightly less toxic than endrin. Endrin ketone, however, has been shown to be more toxic than endrin. This indicates that endrin ketone may be responsible for much of the acute toxicity observed in mammals as a result of exposure to endrin (HSDB 2010).

Endrin has been shown to be extremely toxic to aquatic organisms. The toxicity of endrin has been tested in two species of water flea (Daphnia), resulting in 48-hour EC50s of 4.2 and 20 µg/L for Daphnia magna and Daphnia pulex, respectively. In addition, 96-hour LC50s for twelve species of benthic macroinvertebrates ranged from 0.08 to 62 µg/L. In eleven species of fish, the 96-hour LC50s ranged from 0.033 µg/L in Ophiocephalus punctatus to 1.8 µg/L in the fathead minnow (HSDB 2010).

C4.3 Methoxychlor

Fate and Transport: Methoxychlor is an insecticide used to control a wide range of insect pests (particularly chewing insects) in field crops, forage crops, animal houses, dairies, and household and industries. Vapor phase methoxychlor will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 7 hours. This compound may photolyze on soil surfaces based on studies reporting the photolysis of dry methoxychlor films exposed to sunlight. Methoxychlor is resistant to biodegradation under aerobic conditions but biodegrades fairly readily in anaerobic environments.

Half-lives of 1 week to 2 months were reported for methoxychlor in 4 anaerobic flooded soils while in aerobic upland soils, half-lives of greater than 3 months were reported. Methoxychlor was not degraded over a 100-day period in aerobic soil while 73% degradation was observed under anaerobic conditions for the same time period. If released into water, methoxychlor is

expected to adsorb to suspended solids and sediment. Methoxychlor was biodegraded in sediment-water mixtures under aerobic (half-lives of 115 and 206 days) and anaerobic conditions (half-lives of <28 days) (HSDB 2010).

Toxicity: Methoxychlor has been shown to have adverse effects on reproductive functions. In studies using mice it was determined that methoxychlor acts as an estrogen agonist at the level of the uterus and oviduct but as an antiestrogen in the ovary. In addition, methoxychlor appears to alter normal preimplantation embryonic development. Studies using dogs given high doses of methoxychlor produced nervousness, apprehension, excess salivation, tremors and convulsions (HSDB 2010).

Methyoxychlor has been shown to be toxic to aquatic organisms. 96-hour LC50s for six species of benthic macroinvertebrates ranged from 0.5 to 5.0 µg/L. In twelve species of fish, the 96-hour LC50s ranged from 12 µg/L in northern pike (Esox lucius) to 52 µg/L in the channel catfish (Ictalarus punctatus) (HSDB 2010).

C.5 Dioxin/Furans

The fate, transport, and toxicity of dioxins/furans are discussed below. In this SLERA all dioxins/furans are collectively evaluated using the toxicity equivalence factor (TEF) approach where an estimate of the potency, relative to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), of an individual polychlorinated dibenzo-p-dioxin, dibenzofuran, or biphenyl congener is calculated. The resultant value or toxicity equivalence concentration (TEC), is the product of the TEF multiplied by the concentration for an individual dioxin-like chemical. The total TEC for a mixture is calculated as the sum of 2,3,7,8-TCDD equivalence concentrations of all dioxin-like chemicals present in the mixture. Thus, the discussion below is limited to 2,3,7,8-TCDD.

C.5.1 2,3,7,8-TCDD

Fate and Transport: 2,3,7,8-TCDD is formed from the incineration of wastes and from the production of bleached wood pulp and paper and during the synthesis and combustion of polyvinylchloride. It also occurs as a contaminant in the manufacture of various pesticides and, as a result, has been directly released into the environment during the use of these pesticides. 2,3,7,8-TCDD is found in combustion emissions of various sources, including power plants which use coal or oil, wood burning, and home heating systems. 2,3,7,8-TCDD is also formed in automobile and diesel exhaust.

Vapor-phase 2,3,7,8-TCDD will be degraded in the atmosphere; the half-life is estimated to be 21 days. Particulate-phase 2,3,7,8-TCDD will be removed from the atmosphere by wet and dry deposition. If released to soil, 2,3,7,8-TCDD is expected to have no mobility. Adsorption to soil is expected to attenuate volatilization. If released into water, 2,3,7,8-TCDD is expected to adsorb to suspended solids and sediment.

Based on laboratory studies using aquatic sediments and lake water, 2,3,7,8-TCDD is expected to be recalcitrant to microbial attack. Estimated volatilization half-lives for a model river and model lake are 23 hours and 17 days, respectively. However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment. The estimated volatilization half-life from a model pond is 58 years if adsorption is considered. BCF values of >1,000 for fish suggest the potential for bioconcentration in aquatic organisms is very high (HSDB 2010).

Toxicity: The term "dioxin" is commonly used to describe a family of substituted dibenzo-p-dioxins; where the most commonly referred to dioxin is 2,3,7,8-TCDD (Connell and Miller 1984). 2,3,7,8-TCDD is highly toxic to most biota, and death typically occurs in 2 to 8 weeks although increased dosages do not necessarily increase the time of death (Connell and Miller 1984). The dioxins that exhibit the most marked toxicity are 2,3,7,8-TCDD, its corresponding tetrabromo compound (PBrDD), and hexachlordibenzodioxin (HCDD). A compound related to dioxin and having a similar mechanism of toxicity is 2,3,7,8-tetrachlorodibenzofuran (TCDF). TCDF has been shown to affect biochemical activity, suppress immune function, cause fetal abnormalities, and induce tumors in non-human test organisms. Dioxins affect the enzyme systems of many organisms, and this enzyme interaction has been linked to the teratogenic capabilities of 2,3,7,8-TCDD. In addition, 2,3,7,8-TCDD has also been linked to suppression of the immune system through the reduction of peripheral lymphocytes and alpha- and beta-globulins in mammals (Connell and Miller 1984). It has also been suggested that 2,3,7,8-TCDD interacts with hormones and hormone receptors. 2,3,7,8-TCDD has been found to modulate receptors for glucocortinoids, prolactin, thyroxin, low density lipids, epidermal growth factor and estrogens. Much of the toxicity of 2,3,7,8-TCDD has been linked to estrogen receptor modulation and an animal's physiological response to this modulation.

Adult female mink were fed diets supplemented with 2,3,7,8-TCDD at six doses increasing logarithmically from 0.001 to 100 µg/kg for up to 125 days. There was a dose-dependent decrease in food consumption and body weight, with increased mortality in all groups receiving 1 µg or more, confirming the sensitivity of the species to this compound.

A single dose of 70 µg/kg of 2,3,7,8-TCDD to rhesus monkey via gastric instillation led to weight loss; blepharitis; loss of fingernails and eyelashes; facial alopecia with acneform eruptions; mild anemia; neutrophilia; lymphopenia; a decrease in serum cholesterol; and increase in serum triglyceride concentrations; increased relative organ weight for liver, adrenal gland and kidney; and dramatic reduction of the thymus gland.

Tests on various mammalian species show body weight loss and reduced intake of food. Studies indicated that 2,3,7,8-TCDD may suppress the formation of hunger-related signals. A serotonergic mechanism was proposed because of increased levels of tryptophan and its metabolites, serotonin and 5-hydroxyindoleacetic acid, in the blood and brain.

Early life stages of fish are at higher risk of 2,3,7,8-TCDD toxicity because they are up to 560 times more sensitive than adults. The lowest observable adverse effect level (LOAEL) for larval toxicity in lake trout 40 pg 2,3,7,8-TCDD/g egg) is 1/25 of that for overt toxicity in juvenile rainbow trout (1,000 pg 2,3,7,8-TCDD/g fish). The range of sensitivity between fish species for 2,3,7,8-TCDD-induced mortality at the larval stage of development also varies significantly. Lake trout larvae are generally considered the most sensitive and zebrafish larvae the least sensitive. However, bull trout appear to be even more sensitive than lake trout to TCDD-induced early life-stage mortality.

The hallmark signs of 2,3,7,8-TCDD early life-stage toxicity in fish are edema, hemorrhage, craniofacial malformation, growth retardation, and posthatch mortality. These responses have been observed in several species of fish (HSDB 2010).

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