Interim Response and Remediation Services Contract
Contract Number [redacted]

2015 ANNUAL GROUNDWATER MONITORING REPORT

(JULY 2014 - JULY 2015)

HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, HAVERTOWN TOWNSHIP,
DELAWARE COUNTY, PENNSYLVANIA

Contract No. [redacted]
Task Order [redacted]

OCTOBER 2015

Pennsylvania Department of Environmental Protection
Hazardous Sites Cleanup Program
Southeast Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

TETRA TECH

PHIL-26162

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Prepared for:
Pennsylvania Department of Environmental Protection
Hazardous Sites Cleanup Program
Southeast Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

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ACRONYMS

ARAR	Applicable, Relevant, or Appropriate Requirement
bgs	Below Ground Surface
CCA	Chromium Copper Arsenate
COC	Contaminant of Concern
CTR	Collection Trench
CW	Cluster Well
CZA	Capture Zone Analyses
DEP	Pennsylvania Department of Environmental Protection
DO	Dissolved Oxygen
EPA	U.S. Environmental Protection Agency Region 3
ft	Feet
GES	Groundwater & Environmental Services, Inc.
gpm	Gallons per Minute
HAV	Havertown Well
IW	Injection Well
J	Estimated Data Qualifier Value
lb	Pound
LTRA	Long Term Response Action
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mV	Millivolts
MW	Monitoring Well
NA	Not Available
ND	Non-Detect
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NW	National Wood (Preservers) Well
NWP	National Wood Preservers
O&M	Operation and Maintenance
ORP	Oxidation Reduction Potential
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
PAH	Polynuclear Aromatic Hydrocarbon
PCG	Philadelphia Chewing Gum Company
PCP	Pentachlorophenol
PCRR	Penn Central Railroad
PDU	Peroxide Destruction Unit
PE	Polyethylene

ACRONYMS (Continued)

Pg/L	Picogram per Liter
PZ	Piezometer
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RG	Remediation Goal
ROD	Record of Decision
ROS	Recreation and Open Space
RR ROW	Railroad Right-of-Way
RW	Recovery Well
SAP	Sampling and Analysis Plan
SMCL	Secondary Maximum Contaminant Level
SVOC	Semi-Volatile Organic Compound
TCE	Trichloroethene
TEQ	Toxicity Equivalent Quotient
µg/L	Micrograms per Liter
U	Non-Detected Laboratory Value
USACE	U.S. Army Corps of Engineers
VOC	Volatile Organic Compound
YMCA	Young Men's Christian Association

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) was tasked by the Pennsylvania Department of Environmental Protection (DEP), under Contract Number [redacted] to perform operation and maintenance (O&M) services under Operable Unit 2 (OU-2) and OU-3 for the groundwater treatment facility at the Havertown PCP Superfund Site located in Haverford Township, Pennsylvania.

Activities performed for OU-2 O&M are to operate and maintain the groundwater treatment facility, optimize the facility's performance, perform all required monitoring (groundwater and surface water discharge) associated with this facility, and maintain the cap in accordance with the selected remedy and Remedial Action Objectives (RAOs). Activities conducted for OU-3 O&M are to contain the contaminated deep groundwater plume that is migrating from the site in conjunction with the OU-2 remedy, operate and maintain the OU-3 extraction and monitoring wells in the Recreation and Open Space (ROS) Area, maintain the ROS pumping system through the Railroad Right-of-Way (RR ROW), and operate the in-situ flushing system in conjunction with the OU-2 groundwater treatment system.

This report covers the groundwater monitoring period from July 2014 to July 2015, which includes long-term performance monitoring for the OU-2 and OU-3 remedies. Analytical data collected during monitoring period were used to evaluate efficacy and capacity of the groundwater collection system; update the site-wide historical database; and present conclusions and recommendations regarding future groundwater sampling. The treatment system's operational performance (including plant discharge monitoring results) is presented in a separate report.

1.1 SITE BACKGROUND

The Havertown PCP Superfund Site (the Site) is located in southeastern Pennsylvania approximately 10 miles west of Philadelphia (Figure 1). Commercial establishments, industries, parks, schools, and residential homes surround the Site.

The Site covers approximately 12 to 15 acres and is defined by the extent of contamination attributable to the site. It is roughly delineated by Lawrence Road and Rittenhouse Circle to the south, the former Penn Central Railroad (PCRR) tracks to the north, and the fence on the Continental Motors property to the west, and Naylors Run to the east.

Historically, the Site consisted of a number of distinct properties, including a former wood treatment facility owned by National Wood Preservers (NWP), a bubble gum manufacturing plant owned by the Philadelphia Chewing Gum Company (PCG), and neighboring residential and commercial areas. Former

structures on the NWP property (lying north of the intersection of Eagle Road and Lawrence Road) consisted of a sheet metal building with multiple aboveground chemical storage tanks. The two-acre NWP property has since been capped and enclosed within a chain-link fence. The PCG facility consisted of a single, large former gum production building located due east of NWP (northeast of the intersection of Eagle Road and Lawrence Road). Residential areas bordering Rittenhouse Circle and Naylors Run comprise the remainder of the study area (Figure 2).

From approximately 1947 to 1963, the NWP property was used to treat wood products using pentachlorophenol (PCP) dissolved in diesel fuel. NWP allegedly disposed of waste materials into a well reportedly located in the vicinity of the former Young's Produce Market, at the corner of Lawrence and Eagle Road. However, the exact location of the well was not identified. In 1977, the NWP facility discontinued the use of PCP and oil to treat wood products and began treating wood using metal salts.

The metal salts consisted of chromium copper arsenate (CCA) in a 0.4% or 0.6% water solution. Other metals used included chromated zinc chloride (a fire retardant) and tributyl tin oxide (an anti-fouling compound). All three water-soluble chemicals were used in pressure treatment of wood products.

The Site was placed on the National Priorities List (NPL) in 1982. The Site was divided into three OUs. OU-1 addressed the discharge to Naylors Run and the on-site wastes at the NWP facility. OU-2 addressed shallow groundwater, and OU-3 addressed deep groundwater in the source area and the groundwater and soil contamination in the ROS Area.

Major contaminants attributable to the Site include volatile organic compounds (VOCs), PCP, polynuclear aromatic hydrocarbons (PAHs), and dioxins/furans.

EPA issued the first Record of Decision (ROD) for the Site in September 1989. The 1989 ROD for OU-1 included provisions for an interim remedial action. It called for the installation of an oil-water separator to address the continued release of contaminants from the Site into the surface water of Naylors Run. In addition, this ROD called for the removal and disposal of the on-site waste.

During a soil investigation, EPA learned that the contamination on the NWP facility was more extensive than originally anticipated. The soil contamination was addressed in a 1996-1997 Superfund Removal Action, during which a synthetic geo-membrane cap was installed over three acres of the Site. The installation of the cap removed the potential for exposure to soils contaminated with arsenic and dioxins/furans by providing an impermeable synthetic barrier and 18 inches of soil cover over the areas of contamination. In the fall of 1997, EPA covered the capped area with an additional 4 feet of fill and planted the fill with a mixture of seed mulch and fertilizer.

EPA issued the ROD for OU-2 on September 30, 1991, which defined the interim remedy. The RAOs of the OU-2 remedy were as follows:

- Design and implement an interim remedial action to protect human health and the environment by removing free product and contaminated groundwater from the shallow groundwater aquifer.

- Collect data on the aquifer and contaminant response to remedial measures.

The primary purpose of the OU-2 ROD is to contain the entire contaminated shallow groundwater plume migrating from the Site under Eagle Road and to treat and discharge it into Naylors Run. The extraction/recovery wells are intended to reduce the size of the oil plume floating on the water table.

Tetra Tech completed the conceptual design for OU-2 (shallow groundwater) in 1994. The Remedial Design (RD) for OU-2 was completed during the period 1997-2000 by several contractors under direction from the U.S. Army Corps of Engineers (USACE). Treatment plant construction was completed in 2001, and the plant became fully operational in August 2001, with treated water being discharged to Naylors Run in accordance with National Pollutant Discharge Elimination System (NPDES) permit limits. Groundwater & Environmental Services, Inc. (GES) operated the plant on behalf of USACE until August 15, 2002. Between 2002 and 2013, Tetra Tech performed O&M activities at the plant on behalf of EPA.

EPA issued the ROD for OU-3 in April 2008. OU-3 was further divided into OU-3A and OU-3B. OU-3A addressed contamination related to deep groundwater in the source area, whereas OU-3B addressed contamination in Haverford Township's ROS Area, located below Rittenhouse Circle and adjacent to Washington Avenue in Havertown. The RAOs for the OU-3 remedy were as follows:

<u>Groundwater</u>

- Mitigate contamination to Applicable, Relevant or Appropriate Requirements (ARARs) and/or risk-based cleanup levels to protect human health and the environment.

- Discharge treated groundwater to surface water (Naylors Run) in concentrations that meet NPDES regulations.

- Prevent exposure to contaminated groundwater in the future.

- Prevent discharge of groundwater to surface water at concentrations of contaminants that would result in exceedances of water quality criteria.
- Contain the contamination plume in the source area and the ROS Area to prevent further off-site migration and to ensure that downgradient groundwater is not impacted.

- Restore groundwater quality at the Site.

Soils of ROS Area

- Eliminate current exposure of human and ecological receptors to contaminated soils.

- Prevent further migration of contaminants in soil to groundwater.

- Prevent transport of contaminants in surface soils via surface water runoff.

- Prevent potential future exposure to contaminants through ingestion and dermal contact by human and ecological receptors.

The purposes of the OU-3 remedy are to contain the contaminated deep groundwater plume migrating from the site in conjunction with the OU-2 remedy, operate and maintain the OU-3 shallow extraction and monitoring wells in the ROS, maintain the ROS pumping system through the RR ROW, and operate the in-situ flushing system in conjunction with the OU-2 groundwater treatment system. The OU-2 remedy was incorporated into the OU-3 as a final groundwater remedy. The OU-3 remedy consisted of the following elements:

- Installation of an additional groundwater recovery well and associated piping in the Source area of the site.

- Operate and maintain the existing groundwater treatment facility. Upgrade or retrofit the existing groundwater treatment facility to increase the capacity of the facility to process 60 to 70 gallons per minute (gpm) of contaminated water.

- Treat collected groundwater as necessary to meet discharge requirements.

- In-situ flushing in the Source area of the Site, with treated water from the groundwater treatment facility.

- Excavation of an area approximately 50 ft. by 50 ft. around wells SW-8 and SW-9 in the ROS Area, and a narrow zone along the abandoned sewer line about 200 ft. long and 20 ft. wide. The portion of the abandoned sewer line that has not been sealed will be removed. All excavated material will be properly disposed of off-site.

- Backfilling of the excavated area with clean fill, restoration of sidewalks, curbs, utilities, etc. and planting of appropriate vegetation.

- Installation of three groundwater recovery wells and associated piping in the ROS Area to extract groundwater and transport it to the site's groundwater treatment facility for remediation.

- Demonstrate recovery of benthic macroinvertebrate and fish communities, to examine the efficacy of the ROS Area excavation and groundwater treatment to reduce or eliminate the contaminant releases that are the major source of risk to aquatic organisms in Naylors Run.

- Perform groundwater monitoring.

- Implement institutional controls to protect the integrity of the remedy and to prevent the installation of groundwater wells, through groundwater use restrictions and notices for the site and surrounding area, as appropriate.

In November 2008, EPA began work to increase the capacity and optimize the existing groundwater treatment facility and to meet the 2008 OU-3 ROD requirements. EPA redesigned the pretreatment portion of the facility to increase the amount of water being treated. This portion of the Remedial Action (RA) was completed in February 2009 as part of the OU-2 long-term response action (LTRA). The facility currently treats 70 gpm of contaminated groundwater. From March through August 2010, the OU-3 remedy was implemented. Construction involved converting an existing monitoring well (CW-31D) to a deep recovery well (RW-7), adding three new shallow recovery wells (RW-8, RW-9, and RW-10) and three new monitoring wells (CW-32, CW-33, and CW-34) in the ROS Area, and converting three existing shallow recovery wells (RW-1, RW-2, and RW-4) into injection wells (IW-1, IW-2, and IW-3) with an associated pumping system as part of the in-situ flushing system. The treatment plant remained operational during construction.

The groundwater extraction and treatment system consists of six recovery wells, one collection trench (CTR), and an on-site treatment system. The CTR has been online since 2001; RW-5 and RW-6 have been online since February 2006; RW-7 was fully online in October 2010; and RW-8, RW-9, and RW-10 were online in August 2010. Four original recovery wells (RW-1, RW-2, RW-3, and RW-4) have been offline since February 2006. In 2010, the former RW-1, RW-2, and RW-4 were converted into injection wells (IW-1, IW-2, and IW-3) and placed into service in August 2010. Since IW-1, IW-2, and IW-3 started

plugging, two additional wells, IW-4 (formerly CW-29D) and IW-5 (formerly CW-30D), were placed online in July and October 2011, respectively.

To restore contaminated groundwater to beneficial use, remediation implemented under the remedies will operate until remediation goals (RGs) or groundwater clean-up goals are achieved. The RGs for groundwater OU-2 and OU-3 are presented in Table 1.

1.2 GROUNDWATER WELL NETWORK DESCRIPTION

The groundwater well network consists of recovery wells, injection wells, monitoring wells, and the CTR. Well construction data is provided in Table 2. These wells are also located on Figure 2.

There are six active recovery wells currently including RW-5, RW-6, RW-7, RW-8, RW-9, and RW-10. Four original recovery wells RW-1, RW-2, RW-3, and RW-4 have been offline since February 2006.

There are five injection wells (IW-1 through IW-5) in or near the source area. The injection wells IW-1, IW-2, and IW-3 were placed into service in August 2010. The former monitoring well CW-29D was converted into injection well IW-4 and placed online in July 2011, and the former monitoring well CW-30D was converted into injection well IW-5 and placed online in October 2011.

After IW well redevelopment in June 2013, three IW wells (IW-1, IW-2, and IW-3) were shut down. The injection system remains active with IW-4 and IW-5.

Four piezometers (PZ-1 through PZ-4) are used to monitor water levels in the CTR.

1.3 MONITORING PROGRAM

Presently, there are 60 wells included in the O&M groundwater monitoring program. These wells can be classified as shallow wells above bedrock [about 5 ft. to 30 ft. below ground surface (bgs)] and deep wells in the bedrock (up to 120 ft. deep). In 2010 and 2011, six wells were deleted from the program but remain available. In mid-2012, due to construction of the Young Men's Christian Association (YMCA) building, four monitoring wells (HAV-02, CW-6S, CW-6I, and CW-6D) were abandoned.

The purpose of this sampling is to monitor treatment system performance and migration of the PCP plume. Sampling is performed per the revised Sampling and Analysis Plan (SAP) (Tetra Tech, 2015c). Groundwater samples are collected on periodic as follows:

- Quarterly sampling to determine recovery system water quality and extraction system's effectiveness.

- Semi-annual sampling to determine recovery well water quality and effectiveness.

- Bi-annual sampling to monitor the edge of the shallow contaminant capture zone.

- Annual sampling to update the historical database.

Groundwater samples are analyzed for VOCs, semi-volatile organic compounds (SVOCs), metals, and dioxin/furans. During well sampling, other parameters are also collected [e.g., pH, temperature, dissolved oxygen (DO), specific conductivity and oxidation-reduction potential (ORP)].

During the July 2014 to July 2015 period, all samples were sent to the DEP-designated laboratory for analysis.

2.0 GROUNDWATER MONITORING ACTIVITIES

2.1 SAMPLING METHODS

Groundwater samples were collected from the monitoring wells and injection wells through polyethylene (PE) tubing that was attached to a peristaltic pump with medical-grade flexible silicon tubing. The PE tubing was inserted down the well and set at the approximate midpoint of the screen. Geochemical parameters (DO, specific conductivity, pH, temperature, and ORP) were measured during purging using an YSI 556 water quality meter equipped with an in-line flow through cell. Turbidity was measured using a LaMotte 2020e turbidimeter during purging. The purging rate was set at between 0.1 to 0.4 liter/minute, and water levels were monitored to assure that the static water level was not drawn down into the well screen.

Purged water was monitored for pH, specific conductivity, temperature, turbidity, ORP, and dissolved oxygen (DO) every five minutes. When levels of these parameters stabilized, and a minimum of two saturated screen volumes had been removed from the well, the purging was considered complete and the groundwater samples were obtained. Parameter stabilization was defined as three successive readings (taken at least 5 minutes apart) within 0.1 unit for pH, 3% for specific conductivity, 10% for turbidity and DO, and 10 mV for ORP. All monitored parameter measurements (including time, water level, purge rate, temperature, pH, specific conductance, turbidity, DO, and ORP) were recorded on low-flow purge data sheets. Groundwater samples were collected in laboratory-supplied containers after three consistent readings of pH, specific conductivity, temperature, and turbidity (±10%), immediately placed on ice, and delivered under proper chain-of-custody protocol to ALS Environmental.

Groundwater samples of the recovery wells were collected from sampling ports located in the well vaults. After purging 5 gallons of the groundwater from sampling port, the groundwater sample was obtained. Temperature, pH, specific conductance, turbidity, DO and ORP, were measured and recorded on sampling logs.

2.2 GROUNDWATER SAMPLING EVENTS

A quarterly groundwater sampling event was performed from September 30 through October 1, 2014. A total of 11 wells were sampled and analyzed for TCL VOCs and SVOCs. The analytical results are provided in Appendix A-1.

A quarterly groundwater sampling event was conducted from December 29 through 30, 2014. A total of 14 wells were sampled and analyzed for TCL VOCs and SVOCs. The analytical results are provided in Appendix A-2.

The bi-annual groundwater sampling event was performed from April 20 through May 5, 2015. A total of 61 wells were sampled and analyzed for TCL VOCs, SVOCs, and TAL metals. A total of 10 wells were sampled and analyzed for dioxins/furans. Figure 2 presents sample locations. The analytical results are provided in Appendix A-3.

A quarterly groundwater sampling event was conducted from June 30 through July 1, 2015. A total of 14 wells were sampled and analyzed for TCL VOCs and SVOCs. RW-8, RW-9, RW-10, CW-32, CW-33, and CW-34 were sampled and analyzed for Herbicides. The analytical results are provided in Appendix A-4.

2.3 WATER-LEVEL MEASUREMENTS

Water-level measurements were collected from 77 wells on May 15, 2015. Elevation measurements were obtained during a day of no precipitation, and at least 48 hours after the conclusion of any precipitation event. Static water levels were measured in all available wells using an electronic water-level indicator and were recorded to the nearest 0.01 foot. The static water levels in the flowing artesian monitoring wells were obtained by extending the casing stick-up of the wells and measuring the height of the water above the reference point elevation. Groundwater level data are provided in Table 3.

Figure 3 shows groundwater contours for the shallow zone/overburden while the system was operational. Figure 4 displays groundwater contours for the deep zone/bedrock while the system was operational.

3.0 DATA EVALUATION

3.1 GROUNDWATER LEVELS

Table 3 presents water-level data. Figures 3 and 4 indicate a measurable drawdown near the RW wells and CTR. Pumping at recovery well RW-5 screened at 36 to 46 ft bgs continued to draw down water levels in surrounding deep wells CW-24, CW-26 and CW-16 S/I/D, and to impact the water level in downgradient wells CW 27D, and CW-4S/I/D. Pumping at RW-7 (screened from 90 to 120 ft bgs) draws down the water tables in surrounding wells CW-28, NW-1, CW-4S/I/D, and CW-17D, and impacts water levels in downgradient wells CW-3S/I/D, CW-5S/I/D, CW-18D, and CW-19D.

The pumping systems at the CTR (8 to 18 ft bgs) and RW-6 (screened from 25 to 35 ft bgs) continued to draw down water levels in nearby monitoring wells MW-1, MW-2, CW-9S/D, and downgradient wells HAV-07 and CW-21S/D. These two pumping systems also influenced water levels in upgradient wells HAV-04, HAV-05, and MW-3. The ROS Area recovery wells RW-8, RW-9, and RW-10 (all three screened from 7 to 18 ft bgs) drew down water levels in upgradient wells CW-32, CW-33, and CW-34.

3.2 GROUNDWATER CONTAMINANT CONCENTRATIONS AND TRENDS

The shallow aquifer source area encompasses groundwater contamination associated with wells CW-2S, R-2, CW-4S, CW-5S, HAV-02 (now B-1), and HAV-04 (Tetra Tech, 1991). The OU-3 ROD (EPA, 2008) further defined the deep aquifer source area as encompassing wells CW-17D, CW-25D (now RW-5) CW-2I, CW-2D, and CW-31D (now RW-7) by establishing the plume of deep free-product oil containing PCP. This area is considered to represent principal threat waste since it is a continuous source of groundwater contamination. The OU-3 ROD also considered well CW-16S to be representative of the shallow aquifer source area. The complete sets of analytical data generated during the reporting period are included in Appendix A. Table 4 summarizes the contaminants of concern (COCs) detected in well samples during the 2015 annual sampling event and compares them to groundwater remediation goals (RGs) (Table 1). Figures 5 and 6 present the PCP concentrations detected during 2014 annual sampling event as isoconcentration contour maps for shallow overburden and deep bedrock wells, respectively.

Historical trends were evaluated by comparing current PCP concentrations with those detected during previous sampling events. The historical PCP and dioxin concentrations are presented in Table 5 from September 2010 to July 2015. Appendix B graphically represent the historical trends of PCP concentrations during the period February 2008 through July 2015 in the source area wells (recovery wells, injection wells and surrounding wells); recovery trench area wells; plume perimeter wells; and ROS Area recovery wells and surrounding wells.

3.2.1 Recovery Well and Collection Trench PCP Concentrations and Trends

Generally, PCP concentrations in the recovery wells (RW) continued to decline as follows:

- RW-5 [varied from 5,200 micrograms per liter (µg/L) (March 2013) to 2,860 µg/L (April 2014) to 3,820 µg/L (April 2015)].

- RW-6 [varied from 700 µg/L (March 2013) to 306 µg/L (April 2014) to 498 µg/L (April 2015)].

- RW-7 [decreased from 3,200 µg/L (March 2013) to 2,580 µg/L (April 2014) to 2,110 µg/L (April 2015)].

Operation of the three other ROS recovery wells (RW-8, RW-9, and RW-10) continued to contain the shallow plume in this area. Based on the 2014-2015 data, PCP concentrations of RW-8 and RW-9 have continued to be non-detect (ND) or below the groundwater RG of 1 µg/L since December 2012. However, PCP was detected in RW-10 at an estimated concentration of 2.4 J µg/L in the December 2014 quarterly sampling event only. EPA and DEP have discussed the necessary documentation to justify the shutdown of ROS recovery wells. As a general rule, eight consecutive quarterly rounds of non-detect values for PCP in these wells would support this type of decision.

For CTR samples, PCP concentrations declined from 500 µg/L (March 2013) to 415 µg/L (April 2014) to 255 µg/L (April 2015). More detailed information may be found in Table 5.

3.2.2 Monitoring Well PCP Concentrations and Trends

Operation of deep recovery well RW-5 continued to decrease PCP concentrations in the source area deep groundwater (see Figures 7 and 8). During the period of 2013 to 2015, PCP concentrations decreased in deep wells near RW-5. Specifically:

- CW-16D [33 µg/L (March 2013) to 29.55 µg/L (April 2014) to 3.7 µg/L (April 2015)].
- CW-24D [4,000 µg/L (March 2013) to 2,230 µg/L (April 2014) to 1,920 µg/L (April 2014)].

PCP concentrations in other adjacent wells near RW-5 fluctuated as follows:

- CW-26D [1,300 µg/L (March 2013) to 3,560 µg/L (April 2014) to 4.1 µg/L (April 2015)].
- CW-27D [4,600 µg/L (March 2013) to 1,810 µg/L (April 2014) to 1,950 µg/L (April 2015)].
- CW-28D [1,800 µg/L (March 2013) to 6,830 µg/L (April 2014) to 3,230 µg/L (April 2015)].

Operation of deep extraction well RW-7 continued to affect PCP concentrations in deep wells near RW-7 (Figures 7, 8, 9, and 10). During the period of 2013 to 2015, decreases in PCP concentrations were exhibited at the following wells:

- CW-17D [1,800 µg/L (March 2013) to 3,780 µg/L (April 2014) to 1,300 µg/L (April 2015)].
- CW-19D [1,300 µg/L (March 2013) to 1,030 µg/L (April 2014) to 554 µg/L (April 2015)].

PCP concentrations in other adjacent wells near RW-7 fluctuated as follows:

- CW-3D [140 µg/L (March 2013) to 552 µg/L (April 2014) to 209 µg/L (April 2015)].
- CW-4D [1,700 µg/L (March 2013) to 1,180 µg/L (April 2014) to 1,260 µg/L (April 2015)].
- CW-5D [16 µg/L (March 2013) to ND (April 2014) to 6 µg/L (April 2015)].
- CW-18D [ND (March 2013) to 52.6 µg/L (April 2014) to 59.8 µg/L (April 2015)].
- CW-27D [4,600 µg/L (March 2013) to 1,810 µg/L (April 2014) to 1,950 µg/L (April 2015)].
- CW-28D [1,800 µg/L (March 2013) to 6,830 µg/L (April 2014) to 3,230 µg/L (April 2015)].

Due to YMCA building construction, wells HAV-02, CW-6D, CW-6I, and CW-6S were abandoned in mid-2012 and are no longer part of the groundwater monitoring program.

Operation of deep extraction well RW-6 and CTR continued to decrease in PCP concentrations in groundwater around the CTR area and downgradient wells (see Figure 9). Specifically:

- MW-3 [920 µg/L (March 2013) to 1,040 µg/L (April 2014) to 599 µg/L (April 2015)].
- CW-21S [varied from 1,300 µg/L (March 2013) to 833 µg/L (April 2014) to 892 µg/L (April 2015)].
- CW-21D [varied from 1,300 µg/L (March 2013) to 830 µg/L (April 2014) to 1030 µg/L (April 2015)].
- MW-1 [decreased 2.4 µg/L (March 2013) to ND (April 2014) to ND (April 2015)].
- MW-2 [varied from ND (March 2013) to 4.3 µg/L (April 2014) to 2.8 µg/L (April 2015)].

PCP concentrations for wells HAV-04 and HAV-05 were as follows:

- HAV-04 [varied from 2,900 µg/L (March 2013) to 3,290 µg/L (April 2014) to 4,180 µg/L (April 2015)].
- HAV-05 [varied from 3,600 µg/L (March 2013) to 2,020 µg/L (April 2014) to 3,490 µg/L (April 2015)].

Figure 10 presents the historical trends of PCP concentrations detected in plume perimeter wells.

PCP concentrations at wells CW-32, CW-33, and CW-34 located near the ROS Area continued to be non-detect.

3.2.3 In-Situ Flushing System PCP Concentrations and Trends

Operation of the in-situ flushing system continued to influence PCP concentrations in injection wells and deep wells near the injection system. IW-4 and IW-5 were both operational during the monitoring period from July 2014 to July 2015. IW-1, IW-2, and IW-3 were non-operational since June 2013. Figure 11 presents historical trends of PCP concentrations in the injection wells.

For injection wells IW-4 and IW-5, PCP concentrations were as follows:

- IW-4 [ranged from an average of 58 µg/L (2013) to 11 µg/L (April 2014) to 97.1 µg/L (April 2015)].
- IW-5 [varied from an average of 2 µg/L (2013) to 33.2 µg/L (April 2014) to 37.5 µg/L (April 2015)].

Between 2012 and 2015, PCP concentrations for non-operational wells IW-1, IW-2, and IW-3 were variable. Specifically:

- IW-1 [varied from ND (March 2013) to 358 µg/L (April 2014) to 981 µg/L (April 2015)].
- IW-2 [ranged from 4,800 µg/L (March 2013) to 4,750 µg/L (April 2014) to 11 µg/L (April 2015)].
- IW-3 [varied from 1,700 µg/L (March 2012) to 3,100 µg/L (June 2012) to 980 µg/L (April 2014)].

Between 2011 and 2015, PCP concentrations for three deep wells were reported as follows:

- CW-26D [results varied from 88+ µg/L (March 2011) to 3,560 µg/L (April 2014) to 4.1 µg/L (April 2015)].
- CW-27D [from 1,500+ µg/L (March 2011) to 4,600 µg/L (April 2014) to 1,950 µg/L (April 2015)].
- CW-28D [from 3,000+ µg/L (March 2011) to 6,830 µg/L (April 2014) to 3,230 µg/L (April 2015)].

These wells received the majority of injection flow during the period. To compensate for this, the injection pumping system was turned off prior to groundwater sampling events.

3.2.4 Other Groundwater Contaminants

Table 4 provides a summary of the groundwater concentrations detected during the 2015 annual sampling event. Trends for several other contaminants are discussed below.

Trichloroethene (TCE) and Vinyl Chloride: During the reporting period, TCE was detected above the groundwater RG of 5 µg/L only in wells RW-5 and HAV-4 at concentrations of 7.6 µg/L and 7.2 µg/L, respectively.

TCE concentrations contained in well cluster CW-1 (upgradient of the site) were as follows:

- Shallow well CW-1S [varied from 430 µg/L (2013), 160 µg/L (2014), and ND (2015)].
- Deep well CW-1D [ranged from 5.8 µg/L (2013), 1.7 µg/L (2014), and 3.6 µg/L (2015)].

TCE was also contained in downgradient wells CW-10D, CW-13D, and HAV-04 and source area recovery wells RW-5 and RW-7 as reported below:

- CW-10D [results varied from 1.5 µg/L (2012), 5.8 µg/L (2014), and 2.9 µg/L (2015)].
- CW-13D [varied from 8.3 µg/L (2012), 6.7 µg/L (2014), and 3.8 µg/L (2015)].
- HAV-04 [varied from 6.1 µg/L (2013), 3.9 µg/L (2014), and 7.2 µg/L (2015)].
- RW-5 [ranged from 6.9 µg/L (2013), 10.5 µg/L (2014), and 7.6 µg/L (2015)].
- RW-7 [varied from 6.2 µg/L (2013), 4.5 µg/L (2014), and 3.8 µg/L (2015)].

Vinyl chloride was also detected in wells CW-1D and NW-6 exceeding its RG of 5 µg/L. Specifically:

- NW-6 [results varied from ND (2014) to 30.4 µg/L (2015)].
- CW-1D [ranged from 9 µg/L (2013), 1.9 µg/L (2014), and 7.9 µg/L (2015)].

Benzene: Benzene was detected in wells CW-4D, CW-4I, CW-24D, CW-26D, CW-27D, HAV-05, and RW-5 at concentrations exceeding its RG of 5 µg/L. Benzene concentrations ranged from 5.6 µg/L contained in well HAV-05 to 33.6 µg/L in well RW-5.

Naphthalene: Naphthalene was detected in 11 wells at concentrations ranging from 3.4 µg/L for well CW-4D to 310 µg/L for well HAV-05. These wells are part of the same source area and plume as associated with PCP concentrations.

In general, naphthalene concentrations continued to decline in most wells as follows:

- RW-3 [decreased from 630 µg/L (2013) to 627 µg/L (2014) to 1.7 µg/L (2015)].
- RW-5 [decreased from 710 µg/L (2013) to 175 µg/L (2014) to 60.7 µg/L (2015)].
- RW-7 [decreased from 255 µg/L (2013) to 147 µg/L (2014) to 78.6 µg/L (2015)].
- CW-2D [varied from 6.9 µg/L (2013) to 53 µg/L (2014) to ND (2015)].
- CW-4D [decreased from 150 µg/L (2013) to 31.1 µg/L (2014) to 3.4 µg/L (2015)].
- CW-4I [decreased from 35 µg/L (2013) to 2.7 µg/L (2014) to 1.5 µg/L (2015)].
- CW-16S [decreased from 500 µg/L (2013) to 9.9 µg/L (2014) to ND (2015)].

- CW-17D [decreased from 24 µg/L (2013) to 99.9 µg/L (2014) to ND (2015)].
- CW-24D [decreased from 1,400 µg/L (2013) to 415 µg/L (2014) to 193 µg/L (2015)].
- CW-26D [decreased from 110 µg/L (2013) to 5.9 µg/L (2014) to ND (2015)].
- CW-27D [decreased from 720 µg/L (2013) to 4.2 µg/L (2014) to ND (2015)].
- CW-28D [varied from 180 µg/L (2013) to 698 µg/L (2014) to 127 µg/L (2015)].
- HAV-04 [varied from 39 µg/L (2013) to ND (2014) to 12.4 µg/L (2015)].

However, more recent naphthalene concentrations increased in wells HAV-04 and CW-4S near the YMCA. Specifically:

- CW-4S [varied from ND (2013) to ND (2014) to 4.2 µg/L (2015)].
- HAV-05 [varied from 52 µg/L (2013) to 123 µg/L (2014) to 310 µg/L (2015)].

Dioxins/Furans: Total 2,3,7,8-TCDD, reported as Dioxin Toxicity Equivalent Quotient (TEQ), was detected only in well NW-1 at concentrations exceeding its RG of 30 pg/L. Specifically:

- NW-1 [results varied from 105 pg/L (2013) to 25 pg/L (2014) to 35 µg/L (2015)].

3.3 DISCUSSION

Based upon a review of the groundwater data generated through July 2015, there has been contaminant reduction in both shallow and deep zones in general. Contaminant concentrations in some wells fluctuated over the past three years and did not indicate a decreasing trend over time. Appendix B presents historical PCP concentrations in wells from February 2008 to July 2015.

No major contaminants have been detected in the shallow zone boundary wells (CW-3S, CW-9S, CW-12S, and R-4) since 2002; PCP concentrations in CW-3S, CW-7S, CW-7D, CW-8S, CW-8D, CW-9D, CW-10D, CW-11D, CW-12S, CW-13S, CW-15S, CW-20D, CW-22S, CW-22D, CW-23D, HAV-07, NW-01, and MW-1 continued to be non-detect. Free product was observed at well R-2; however, the floating product depth continued to be non-existent at those wells formerly containing product.

Operation of the three other ROS Area recovery wells (RW-8, RW-9, and RW-10) continued to contain the shallow plume in this area. Based on the 2012-2015 data, PCP concentrations for RW-8, RW-9, and three associated monitoring wells (CW-32, CW-33, and CW-34) continued to be non-detect. No COCs were detected at CW-32, CW-33, and CW-34 exceeding groundwater RGs. PCP was detected in RW-10 at an estimated concentration of 2.4 J µg/L in the December 2014 quarterly sampling event. However,

the PCP concentration in RW-10 continued to be non-detect in April 2015 and June 2015 sampling events.

Table 6 presents a comparison of groundwater RGs to the results for RW-8, RW-9, and RW-10 (March 2012 to July 2015). Only aluminum, iron, and manganese were detected at RW-8, RW-9, and RW-10 exceeding these goals. The aluminum, iron, and manganese RGs were selected based on NPDES discharge requirements for treated effluent. No other COC concentrations have been detected above RGs since December 2012.

Between the source area and ROS Area, PCP was contained in deep wells CW-12D (4 µg/L) and CW-13D (115 µg/L) during the 2014 annual sampling event. However, PCP was non-detect in both wells located southeast of the main groundwater contaminant plume during April 2015 sampling. The PCP concentrations reported for these wells since 2012 are as follows:

- CW-12D [ranged from 0.96 µg/L (September 2012) to 4 µg/L (April 2014) to ND (April 2015)].
- CW-13D [fluctuated from 63 µg/L (September 2012) to ND (December 2012) to 115 µg/L (April 2014) to ND (April 2015)].

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The following conclusions have been made based on the analytical and hydrogeologic data collected over the monitoring period:

- Overall, there has been contaminant reduction in both shallow and deep groundwater zones since operation of the treatment plant began.

- The overall areal extent of the PCP plume based on 2015 data is smaller compared to 2014 based on PCP groundwater concentrations. Also, the magnitude of the plume is slightly lower.

- In general, historical trends of PCP concentrations in groundwater indicate a very gradual and uneven decrease in PCP concentrations.

- PCP concentrations for ROS Area recovery wells RW-8, RW-9, and three associated monitoring wells CW-32, CW-33, and CW-34 continued to be non-detect. Other COCs were not detected at CW-32, CW-33, and CW-34 exceeding groundwater RGs. Aluminum, iron, and manganese were detected for RW-8, RW-9, and RW-10 exceeding RGs, and no other COC concentrations were detected above RGs for these wells since December 2012.

4.2 RECOMMENDATIONS

The following recommendations are made with respect to the groundwater monitoring results:

- Continue evaluating analytical and hydrogeologic data to determine the long-term effects of the extraction system on reducing the extent of the contaminant plume and the removal of contaminants.

- Review the analytical results for the ROS Area recovery wells and nearby monitoring wells to determine if the recovery wells should be shutdown.

- If the ROS recovery wells are shutdown, develop an approved written plan for long-term groundwater monitoring of the ROS Area.

- Consider the use of the Groundwater Statistics Tool (EPA, 2014a) to reduce the frequency of monitoring as well as the required analytical parameters; modify the SAP as required.

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TABLES

TABLE 1
REMEDIATION GOALS FOR GROUNDWATER
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

CHEMICAL	GOAL	UNIT	OU [1] [2]
Benzene	5 (MCL)	µg/L	2
Benzo(a)pyrene	0.2 (MCL)	µg/L	Both
Dieldrin	0.038 (Risk-Based)	µg/L	3
Bis(2-ethylhexyl)phthalate	6 (MCL)	µg/L	Both
Dibenzofuran	4 (Risk-Based)	µg/L	3
Ethylbenzene	700 (MCL)	µg/L	2
2-Methylnaphthalene	2 (Risk-Based)	µg/L	3
Naphthalene	3 (Risk-Based)	µg/L	3
Pentachlorophenol (PCP)	1 (MCL)	µg/L	Both
Phenanthrene	41 (Risk-Based)	µg/L	Both
Toluene	1,000 (MCL)	µg/L	2
Total 2,3,7,8-TCDD	0.00003 (MCL)	µg/L	Both
TCE	5 (MCL)	µg/L	2
1,2-Trichloroethylene	100 (MCLG)	µg/L	2
1,2,4-Trimethylbenzene	16 (Risk-Based)	µg/L	3
1,3,5-Trimethylbenzene	16 (Risk-Based)	µg/L	3
4,6-Dinitro-2-methylphenol	1.7 (Risk-Based)	µg/L	3
Vinyl chloride	5 (MCL)	µg/L	2
Xylene	10,000 (MCL)	µg/L	2
Aluminum	50-200 (SMCL)	µg/L	3
Arsenic	50 (MCL) (OU-2); 10 (MCL) (OU-3)	µg/L	Both
Chromium	100 (MCL)	µg/L	3
Barium	2,000 (MCL)	µg/L	3
Manganese	50 (SMCL)	µg/L	Both
Iron	300 (SMCL)	µg/L	3
Vanadium	3.1 (Risk-Based)	µg/L	3

References:

[1] Table 23 in OU-2 ROD, dated September 1991.
[2] Table 15 in OU-3 ROD, dated April 2008.

TABLE 2
WELL CONSTRUCTION DETAILS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Well-ID	Well diameter	Top of Casing Elevation	Well depth below top of casing	Screen interval below TOC		Location	Installed	Comments
			ft.	top	bot.			
CW-1D	2"	312.70	57.60	52 60	- 57.60	[redacted] off Lawrence Road	February 1988	CW-1 thru CW-6 cluster wells were installed by RE Wright under PADER
CW-1I	2"	312 27	34.10	24.10	- 34.10	[redacted] off Lawrence Road	February 1988	
CW-1S	2"	312.17	21.30	11 30	- 21.30	[redacted] off Lawrence Road	February 1988	
CW-2D	2"	316 51	65.20	57 20	- 65.20	GWTP Property, NE corner of cap	February 1988	
CW-2I	2"	316.45	41.20	31 20	- 41.20	GWTP Property, NE corner of cap	February 1988	
CW-2S	2"	316 38	26.20	16 20	- 26.20	GWTP Property, NE corner of cap	February 1988	
CW-3D	2"	303 67	45.05	35 05	- 45.05	[redacted] lot, NW building corner	February 1988	
CW-3I	2"	303 66	19.10	14.10	- 19.10	[redacted] lot, NW building corner	February 1988	
CW-3S	2"	303 80	15.60	5 60	- 15.60	[redacted], NW building corner	February 1988	
CW-4D	2"	304 29	49.25	39 25	- 49.25	[redacted] SW building corner	February 1988	
CW-4I	2"	304.41	34.30	24 30	- 34.30	[redacted] SW building corner	February 1988	
CW-4S	2"	304 53	23.02	8 02	- 23.02	[redacted] SW building corner	February 1988	
CW-5D	2"	301 63	45.30	35 30	- 45.30	[redacted] SE building corner	February 1988	
CW-5I	2"	301 80	30.65	20 65	- 30.65	[redacted] SE building corner	February 1988	
CW-5S	2"	302.16	16.93	8 00	- 18.00	[redacted] building corner	February 1988	
CW-6D	2"	299 97	46.75	38 50	- 48.50	[redacted], NE building corner	February 1988	Abandoned 2012 (YMCA)
CW-6I	2"	299 83	33.90	26 90	- 33.90	[redacted], NE building corner	February 1988	Abandoned 2012 (YMCA)
CW-6S	2"	299 60	22.40	8 50	- 24.50	[redacted] NE building corner	February 1988	Abandoned 2012 (YMCA)
CW-7D	4"	302 90	49.60	40 00	- 50.00	[redacted] property	1991	
CW-7S	4"	301.74	29.40	20 00	- 30.00	[redacted] property	1991	
CW-8D	4"	298 26	53.50	33 50	- 53.50	End of Ralston Ave.	1991	
CW-8S	4"	299.11	30.00	20 00	- 30.00	End of Ralston Ave.	1991	
CW-9D	4"	293 92	63.14	53.14	- 63.14	Rittenhouse Circle [redacted])	September 2002	
CW-9S	2"	293.79	35.60	25 60	- 35.60	Rittenhouse Circle [redacted])	September 2002	
CW-10D	4"	279 90	54.28	39 28	- 54.28	Rittenhouse Circle [redacted])	September 2002	
CW-10S	2"	280.10	24.30	9 30	- 24.30	Rittenhouse Circle [redacted])	September 2002	
CW-11D	2"	276 92	71.03	56 03	- 71.03	Rittenhouse Circle [redacted])	September 2002	
CW-11S	2"	276 92	39.70	29.70	- 39.70	Rittenhouse Circle [redacted])	September 2002	
CW-12D	4"	269.70	49.53	39 53	- 49.53	Rittenhouse Circle [redacted]	September 2002	
CW-12S	4"	269 67	34.80	24 80	- 34.80	Rittenhouse Circle [redacted])	September 2002	
CW-13D	2"	292.12	75.25	60 25	- 75.25	Lawrence Road [redacted])	September 2002	
CW-13S	4"	292 01	45.14	33.14	- 45.14	Lawrence Road [redacted])	September 2002	
CW-14D	2"	320.74	82.21	67 21	- 82.21	Lawrence Road Park behind rowhomes	September 2002	
CW-14S	2"	320.43	40.55	25 55	- 40.55	Lawrence Road Park behind rowhomes	September 2002	
CW-15S	2"	249 26	33.92	23 92	- 33.92	Bailey Park NW end of basketball courts	September 2002	
CW-16D	2"	314.2	90.00	75.0	- 90.0	[redacted]	August 2004	
CW-16I	2"	314.3	68.00	53.0	- 68.0	[redacted]	August 2004	
CW-16S	6"	314.0	55.00	38.0	- 55.0	[redacted]	March 2005	
CW-17D	2"	308.6	78.00	62.0	- 77.0	SW corner [redacted] near RW-3	August 2004	
CW-18D	2"	302.2	68.00	58.0	- 68.0	SE corner [redacted] near CW-5S	August 2004	
CW-19D	2"	299.1	101 00	68.0	- 78.0	rear [redacted] parking lot near CW-6D	August 2004	
CW-20D	2"	310.2	66.00	50.0	- 65.0	Lawrence Road [redacted])	August 2004	
CW-20S	2"	310.1	35.00	15.0	- 35.0	Lawrence Road [redacted])	August 2004	
CW-21D	2"	281.3	65.00	55.0	- 65.0	[redacted]) rear yard	April 2005	
CW-21S	2"	281.3	40.00	30.0	- 40.0	[redacted] Circle) rear yard	April 2005	
CW-22D	2"	295.9	55.00	48.0	- 58.0	rear [redacted] R.O.W.	March 2005	
CW-22S	2"	297.0	28.30	18.0	- 28.0	rear [redacted] R.O.W.	January 2005	
CW-23D	2"	314.3	50.00	35.0	- 50.0	[redacted] near R-4	March 2005	
CW-24D	6"	315.0	50.00	35.0	- 50.0	[redacted]	March 2005	
CW-25D	6"	313.3	46.00	36.0	- 46.0	[redacted]	April 2005	Converted to RW-5 12/21/2005

TABLE 2
WELL CONSTRUCTION DETAILS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Well-ID	Well diameter	Top of Casing Elevation	Well depth below top of casing	Screen interval below TOC		Location	Installed	Comments
			ft.	top	bot.			
CW-26D	6"	312.7	45.00	35.0	45.0	[redacted] near RW-4	April 2005	
CW-27D	6"	311.5	45.00	35.0	45.0	[redacted] front yard	April 2005	
CW-28D	6"	310.1	45.00	35.0	45.0	[redacted] front yard	April 2005	
CW-29D	6"	310.8	45.00	30.0	45.0	Cap area rear of [redacted]	April 2005	Converted to IW-4 June 2011
CW-30D	6"	311.4	45.00	35.0	45.0	Cap area rear of [redacted]	April 2005	Converted to IW-5 September 2011
CW-31D	4"	307 34	120 00	90.0	120.0	Loading Dock area o[redacted]	Former B-2 (converted November 2008)	Converted to RW-7 April 2005
EW-1	6"	303 09	80.00	40 00	80.00	[redacted] behind rear parking lot	December 1995	Abandoned May 2005
EW-2	6"	301.74	75.00	40 00	75.00	[redacted] rear parking lot	December 1995	Converted to MW-3 May 2005
EW-3	6"	298 07	82.00	44 00	82.00	[redacted] parking lot	December 1995	Abandoned May 2005
CW-32	2"	261.47	23.00	13 00	23.00	ROS area	April 2010	
CW-33	2"	260 31	16.00	6 00	16.00	ROS area	April 2010	
CW-34	2"	260.78	26.00	16 00	26.00	ROS area	April 2010	
HAV-02	2"	305.70	28.30	18 30	28.30	[redacted], [redacted]	July 1981	Abandoned 2012 (YMCA)
HAV-04	2"	292 62	6.77	3 00	6.77	[redacted]) rear yard	July 1981	Network of 10 shallow monitoring wells installed by SMC Martin on PCG and adjacent Rittenhouse properties. Six wells never found.
HAV-05	2"	292 56	10.05	6 50	11.50	[redacted]) rear yard	July 1981	
HAV-07	2"	281 59	8.82	6 00	11.00	[redacted]) rear yard	July 1981	
NW-1-81	4"	306 56	26.00	14 50	26.00	Along Eagle Road near GWTP	November 1981	Network of 6 observation wells installed by Keyes, Inc on NWP property. Four wells apparently abandoned under cap.
NW-6-81	4"	308.19	24.00	14 00	24.00	[redacted] off Lawrence Road	November 1981	
R-2	4"	311 36	29.00	9 00	29.00	[redacted] near RW-2	November 1981	Network of 5 observation wells installed by Keyes, Inc on Rogers Estate. Three wells apparently abandoned (unknown).
R-4	4"	314.76	33.83	20 33	33.83	[redacted]	November 1981	
MW-1	2"	283 96	21.65	4 50	24.50	Collection Trench	prior to 1999?	covered with dirt during collector trench construction. Found September 2003.
MW-2	2"	284 29	11.30	1 50	11.50	[redacted]) rear yard	prior to 1999?	
MW-3	2"	301 37	63.00	53.0	63.0	[redacted] behind rear parking lot	Former EW-2	Converted in May 2005
RW-1	6"	307 05	28.71	8 00	28.04	west side Eagle Road	August 1998	Offline March 2006; Converted to IW-1 June 2010
RW-2	6"	309 60	26.10	6 50	26.10	west side Eagle Road, [redacted]	August 1998	Offline December 2005; Converted to IW-2 June 2010
RW-3	6"	306 59	25.75	9.10	25.75	east side Eagle Road, [redacted] property	August 1998	Offline March 2006
RW-4	6"	311 22	26.10	6 52	26.10	west side Eagle Road, [redacted]	August 1998	Offline August 2005; Converted to IW-3 June 2010
RW-5	6"	~309 80	46.00	36 00	46.00	[redacted]	Former CW-25D (converted 2005)	Online February 2006
RW-6	6"	283 25	35.00	25 00	35.00	downgradient of Collection Trench	2005	Online April 2006
RW-7	4"	306 84	120 00	90 00	120.00	In front of [redacted]	Former CW-31D (converted 2010)	Online August 2010
RW-8	4"	256 32	17.00	7 00	17.00	ROS area	April 2010	Online August 2010
RW-9	4"	256.78	18.00	8 00	18.00	ROS area	April 2010	Online August 2010
RW-10	4"	257 87	18.00	8 00	18.00	ROS area	April 2010	Online August 2010
W-1	6"	307 05	28.71	8 00	28.04	west side Eagle Road	Former RW-1 (converted June 2010)	Online August 2010
W-2	6"	309 60	26.10	6 50	26.10	west side Eagle Road, [redacted].	Former RW-2 (converted June 2010)	Online August 2010
W-3	6"	311 22	26.10	6 52	26.10	west side Eagle Road, [redacted]	Former RW-4 (converted June 2010)	Online August 2010
W-4	6"	310.8	45.00	30 00	45.00	Cap area rear of [redacted]	Former CW-29D (converted June 2011)	Online July 2011
W-5	6"	311.4	45.00	35 00	45.00	Cap area rear of [redacted]	Former CW-30D (converted September 2011)	Online October 2011
B-1	4"	306 84	120 00	open borehole		In front of [redacted]	October 2008	Observation Well
B-2/CW-31D	4"	307 34	120 00	open borehole		In front of [redacted]	October 2008	Converted to CW-31D November 2008
B-3	4"	306 84	120 00	open borehole		In front of [redacted]	October 2008	Observation Well
PZ-1	1"	286.49	8.97	n/a		Collection Trench	1999	Piezometer
PZ-2	1"	291 60	13.70	n/a		Collection Trench	1999	Piezometer
PZ-3	1"	285 26	11.92	n/a		Collection Trench	1999	Piezometer
PZ-4	1"	285 60	11.94	n/a		Collection Trench	1999	Piezometer - not found

TABLE 2
WELL CONSTRUCTION DETAILS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Well-ID	Well diameter	Top of Casing Elevation	Well depth below top of casing	Screen interval below TOC	Location	Installed	Comments
			ft.	top bot.			
TCE MW-1S	2"	308 30	15.00	5 00 - 15.00	SE corner [redacted]	July 2011	TCE Study well - Weston Solutions
TCE MW-1I	2"	308.13	25.00	15 00 - 25.00	SE corner [redacted]	July 2011	TCE Study well - Weston Solutions
TCE MW-2S	2"	307 31	16.00	6 00 - 16.00	rear of [redacted]	July 2011	TCE Study well - Weston Solutions
TCE MW-2I	2"	307 32	30.00	20 00 - 30.00	rear of [redacted]	July 2011	TCE Study well - Weston Solutions

TABLE 3
MAY 2015 WELL GROUNDWATER LEVEL DATA
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

System Online or Offline? Online **DATE:05/15/2015**

Well No.	Time (24hr)	Top of well Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Remarks
CW-1D	9:43	312.70	15.21	297.49	
CW-1I	9:42	312.27	14.82	297.45	
CW-1S	9:41	312.17	14.68	297.49	
CW-2D	12:04	316.51	23.55	292.96	
CW-2I	12:07	316.45	22.52	293.93	
CW-2S	12:10	316.38	22.75	293.63	
CW-3D	8:15	303.67	13.98	289.69	
CW-3I	8:17	303.66	12.92	290.74	
CW-3S	8:19	303.80	13.09	290.71	
CW-4D	10:17	304.29	16.03	288.26	
CW-4I	10:21	304.41	16.41	288.00	
CW-4S	10:25	304.53	16.96	287.57	
CW-5D	10:00	301.63	12.41	289.22	
CW-5I	10:02	301.80	12.58	289.22	
CW-5S	10:05	302.16	12.09	290.07	
CW-7D	9:42	302.90	12.07	290.83	PECO substation
CW-7S	9:37	301.74	11.03	290.71	PECO substation
CW-8D	9:16	298.26	12.65	285.61	
CW-8S	19:10	299.11	11.60	287.51	
CW-9D	13:46	293.92	10.79	283.13	
CW-9S	13:45	293.79	4.31	289.48	
CW-10D	12:53	279.90	4.75	275.15	
CW-10S	12:50	280.10	5.46	274.64	
CW-11D	12:20	276.92	6.20	270.72	
CW-11S	12:25	276.92	7.66	269.26	
CW-12D	11:28	269.70	5.32	264.38	
CW-12S	11:29	269.67	5.39	264.28	
CW-13D	13:13	292.12	18.06	274.06	
CW-13S	13:15	292.01	16.82	275.19	

TABLE 3
MAY 2015 WELL GROUNDWATER LEVEL DATA
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

System Online or Offline? Online **DATE:05/15/2015**

Well No.	Time (24hr)	Top of well Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Remarks
CW-14D	10:38	320.74	19.18	301.56	
CW-14S	10:39	320.43	14.85	305.58	
CW-15S	10:55	249.26	2.81	246.45	
CW-16D	11:00	314.18	30.21	283.97	
CW-16I	11:10	314.25	27.48	286.77	
CW-16S	10:57	313.98	24.51	289.47	
CW-17D	10:30	308.55	27.80	280.75	
CW-18D	10:09	302.17	20.42	281.75	
CW-19D	8:28	299.06	20.29	278.77	
CW-20D	13:27	310.17	20.12	290.05	
CW-20S	13:28	310.14	19.94	290.20	
CW-21D	13:18	281.29	1.89	279.40	
CW-21S	12:57	281.29	2.47	278.82	
CW-22D	9:25	295.85	18.32	277.53	
CW-22S	9:29	297.04	19.46	277.58	
CW-23D	10:52	314.28	19.97	294.31	
CW-24D	11:17	314.97	25.65	289.32	
CW-26D	11:23	312.66	23.34	289.32	
CW-27D	11:30	311.49	21.91	289.58	
CW-28D	11:42	310.07	19.85	290.22	
CW-32	12:11	261.47	4.18	257.29	ROS
CW-33	12:09	260.31	4.25	256.06	ROS
CW-34	12:13	260.78	5.20	255.58	ROS
HAV-04	13:50	292.62	5.41	287.21	
HAV-05	13:50	292.66	4.29	288.37	
HAV-07	12:52	281.59	2.81	278.78	
MW-1	13:34	283.96	6.22	277.74	
MW-2	13:28	284.29	6.78	277.51	
MW-3	8:32	301.74	19.57	282.17	

TABLE 3
MAY 2015 WELL GROUNDWATER LEVEL DATA
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

System Online or Offline? Online **DATE:05/15/2015**

Well No.	Time (24hr)	Top of well Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Remarks
NW-1-81	11:55	306.56	13.06	293.50	
NW-6-81	9:37	308.19	12.77	295.42	
R-2	11:37	311.36	21.36	290.00	
R-4	10:46	314.76	20.47	294.29	
IW-1	14:32	307.05	13.18	293.87	Formerly RW-1 Operating? N
IW-2	14:34	309.60	19.56	290.04	Formerly RW-2 Operating? N
IW-3	14:38	311.22	21.90	289.32	Formerly RW-4 Operating? N
IW-4	14:24	310.83	DRY	NA	Formerly CW-29D Operating? N
IW-5	14:26	311.41	DRY	NA	Formerly CW-30D Operating? N
RW-3	14:45	306.59	17.60	288.99	
RW-5	9:34	309.80	18.30	291.50	Operating? Y / N PSI? Y
RW-6	9:34	283.25	14.30	268.95	Operating? Y / N PSI? Y
RW-7	9:34	306.84	29.90	276.94	PLC Reading (level above pump) Operating? Y / N PSI? Y
RW-8	9:34	256.32	9.80	246.52	PLC Reading (level above pump) Operating? Y / N PSI (VP-4)? Y
RW-9	9:34	256.78	14.80	241.98	PLC Reading (level above pump) Operating? Y / N PSI (VP-4)? Y
RW-10	9:34	257.87	7.60	250.27	PLC Reading (level above pump) Operating? Y / N PSI (VP-4)?Y
CTR	NA	267.50	NA	NA	
MW-1I	9:59	307.85	5.27	302.58	Part of TCE Study area SouthEast Corner of Direct Paint
MW-1S	9:57	307.82	5.28	302.54	Part of TCE Study area SouthEast Corner of Direct Paint
MW-2I	10:11	306.86	0.91	305.95	Part of TCE Study area North of Jerry Gray's Auto
MW-2S	10:09	306.60	0.91	305.69	Part of TCE Study area North of Jerry Gray's Auto

Additional Comments:

Michelle Mulcahy — Technician: (Print Name, Title)

5/15/2015 — (Date)

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CTR		HAV-LTR-CW-1S		HAV-LTR-CW-1D		HAV-LTR-CW-2I		HAV-LTR-CW-2D		HAV-LTR-DUP02		HAV-LTR-CW-3D		HAV-LTR-CW-3S	
Sample Date:	**Goals for**	**4/27/2015**		**4/22/2015**		**4/22/2015**		**4/23/2015**		**4/23/2015**		**4/23/2015**		**4/29/2015**		**4/29/2015**	
Duplicate of:	**Groundwater**											**HAV-LTR-CW-2D**					
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	43	J	89	U	89	U	89	U	32	J	220	
Arsenic	10	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	300	5400		14800		64100		110		170		170		1500		2300	
Manganese	50	5100		5400		6100		330		3000		3400		5100		1100	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		NA	
DIOXINS/FURANS		**pg/L**															
Toxicity Equivalent Quotient (TEQ)	30	5.65		NA		NA		NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Dibenzofuran	4	2.8	U	0.43	J	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Pentachlorophenol	1	255		97		7.3	J	327		2470		2880		209		15.5	U
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	0 38	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	0.45	J	0.55	J	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	0.44	J	0.4	J	1	U	1	U
Trichloroethene	5	1	U	1	U	3.6		1	U	3.9		3.4		1	U	1	U
Vinyl Chloride	5	1	U	1	U	7.9		1	U	0.43	J	0.38	J	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-4D		HAV-LTR-DUP4		HAV-LTR-CW-4I		HAV-LTR-CW-4S		HAV-LTR-CW-5D		HAV-LTR-CW-5S		HAV-LTR-CW7D		HAV-LTR-CW7S	
Sample Date:	**Goals for**	**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**			**HAV-LTR-CW-4D**													
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	5900		89	U	140		89	U	39	J	89	U
Arsenic	10	6.6		6.8		32		3	U	4.2		4.1		3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		91		410	
Iron	300	29900		30300		33000		56		12300		7200		410		56	U
Manganese	50	11700		12400		11600		5100		2500		7600		18		260	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		0 82	J	2.2	U
DIOXINS/FURANS																	
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	0.46	J	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Dibenzofuran	4	1.9	J	2.2	J	0.75	J	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Naphthalene	3	3.9		2.8		1.5		4.2		1.4	U	1.4	U	1.5	U	1.4	U
Pentachlorophenol	1	1330		1190		1660		528		6	J	108		15.8	U	14.9	U
Phenanthrene	41	2.1		2.8		0.83	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	8.9		8.8		9.8		1.5		2.3		1.2		1	U	1	U
Ethylbenzene	700	111		109		45 3		1	U	1	U	1	U	1	U	1	U
Toluene	1000	2		2.1		1.3		1	U	0.44	J	1	U	1	U	1	U
Trichloroethene	5	1.4		1.3		1.7		0.68	J	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-8D		HAV-LTR-CW-8S		HAV-LTR-CW-9D		HAV-LTR-CW-10D		HAV-LTR-CW-11D		HAV-LTR-CW-12D		HAV-LTR-DUP-1		HAV-LTR-CW-12S	
Sample Date:	**Goals for**	**4/24/2015**		**4/24/2015**		**4/22/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-CW-12D**			
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	200	34	J	650		0.7		89	U	65	J	70	J	100		130	
Arsenic	10	3	U	3	U	0.0017	J	3	U	3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	300	83		800		1.2		56	U	520		970		940		74	
Manganese	50	38		100		0.02		100		34		52		55		11	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		NA	
DIOXINS/FURANS								**pg/L**									
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		0.0786		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	0 85	J
Dibenzofuran	4	2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Pentachlorophenol	1	15.4	U	15 5	U	15	U	15.2	U	16.3	U	16.8	U	15.1	U	15.5	U
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	2.9		0.79	J	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-13D		HAV-LTR-CW-13S		HAV-LTR-CW16D		HAV-LTR-CW16S		HAV-LTR-CW17D		HAV-LTR-CW-18D		HAV-LTR-CW19D		HAV-LTR-CW-20D	
Sample Date:	**Goals for**	**4/21/2015**		**4/21/2015**		**5/4/2015**		**5/5/2015**		**5/5/2015**		**4/28/2015**		**5/4/2015**		**4/24/2015**	
Duplicate of:	**Groundwater**																
INORGANICS		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	200		44	J	110		73	J	89	U	89	U	89	U	89	U
Arsenic	10	3	U	3	U	1.6	J	3	U	1.4	J	1 9	J	3	U	3	U
Barium	2000	NA		NA		160		16		61		NA		57		NA	
Iron	300	250		36	J	7200		9000		1200		18200		18500		28	J
Manganese	50	87		24		630		140		4700		2200		1700		5.3	J
Vanadium	3.1	NA		NA		2.2	U	0.76	J	2 2	U	NA		2.2	U	NA	
DIOXINS/FURANS								**pg/L**									
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		3.1		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
2-Methylnaphthalene	2	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(a)pyrene	0.2	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Bis(2-ethylhexyl)phthalate	6	3	U	3	U	0.79	J	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Dibenzofuran	4	3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	0.9	J	2.9	U
Naphthalene	3	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Pentachlorophenol	1	16.1	U	16.2	U	3.7	J	8.4	J	1300		59 8		554		15.5	U
Phenanthrene	41	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	0.78	J	1 3		0.52	J	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	2.8		0.59	J	1.2		1	U	1	U	1	U
Trichloroethene	5	3 8		1	U	1	U	1	U	1 8		1	U	0.61	J	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-20S		HAV-LTR-CW-21D		HAV-LTR-CW-21S		HAV-LTR-CW-22D		HAV-LTR-CW-22S		HAV-LTR-CW-23D		HAV-LTR-CW24D		HAV-LTR-CW26D	
Sample Date:	**Goals for**	**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/23/2015**		**4/23/2015**		**4/28/2015**		**5/4/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**																
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	37	J	89	U	89	U	88	J	130		74	J	89	U	89	U
Arsenic	10	3	U	3	U	3	U	3	U	3	U	3	U	7.6		3.2	
Barium	2000	NA		NA		NA		NA		NA		NA		220		11	
Iron	300	23000		18000		20500		56	U	56	U	1500		33200		8500	
Manganese	50	4900		930		920		110		87		160		11300		320	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
DIOXINS/FURANS														**pg/L**			
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		NA		1.47		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
2-Methylnaphthalene	2	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	57.2		1.5	U
Benzo(a)pyrene	0.2	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Bis(2-ethylhexyl)phthalate	6	2 9	U	2 9	U	2.9	U	1.5	J	2.9	U	2.8	U	2.8	U	2.9	U
Dibenzofuran	4	0.61	J	1.1	J	1.3	J	2.9	U	2.9	U	2.8	U	7.5		2.9	U
Naphthalene	3	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	193		1.5	U
Pentachlorophenol	1	2.1	J	1030		892		15.2	U	15.5	U	14.8	U	1920		4.1	J
Phenanthrene	41	1 5	U	0.58	J	1.4	U	1.4	U	1.5	U	1.4	U	22.4		1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	2.1		2		1	U	1	U	1	U	18.7		1	U
Ethylbenzene	700	1	U	0.56	J	1	U	1	U	1	U	1	U	7.5		1	U
Toluene	1000	1	U	5.6		1	U	1	U	1	U	1	U	5.5		1.2	
Trichloroethene	5	1	U	1.4		1.5		1	U	1	U	1	U	5	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW27D		HAV-LTR-CW28D		HAV-LTR-CW-32		HAV-LTR-CW-33		HAV-LTR-CW-34		HAV-LTR-RW3		HAV-LTR-RW5		HAV-LTR-RW6		HAV-LTR-RW7	
Sample Date:	**Goals for**	**5/4/2015**		**5/5/2015**		**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**																		
INORGANICS		**mg/L**		**mg/L**		**ug/L**		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	69	J	89	U	31	J	190		89	U	89	U	89	U
Arsenic	10	7.1		5.6		3	U	3	U	3	U	4.4		7.8		3	U	1.1	J
Barium	2000	48		34		NA		NA		NA		49		64		97		50	
Iron	300	22200		5400		56	U	34	J	45	J	8800		19100		2400		15300	
Manganese	50	5400		6600		51		7.2		45		7100		10100		2200		5100	
Vanadium	3.1	2.2	U	1	J	NA		NA		NA		1.6	J	2.2	U	0.8	J	0.81	J
DIOXINS/FURANS												**pg/L**		**pg/L**				**pg/L**	
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		23		0 089		NA		0.045	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
2-Methylnaphthalene	2	1.5	U	21 9		1.4	U	1.5	U	1.5	U	1 5	U	7.3		1.4	U	20.5	
Benzo(a)pyrene	0.2	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Bis(2-ethylhexyl)phthalate	6	2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Dibenzofuran	4	1.5	J	0.83	J	2.8	U	3	U	3	U	0.45	J	4.6		0.69	J	3.1	
Naphthalene	3	1.4	J	127		1.4	U	1.5	U	1.5	U	1.7		60.7		1.4	U	78.6	
Pentachlorophenol	1	1950		3230		15.2	U	15.8	U	15.8	U	4160		3820		498		2110	
Phenanthrene	41	1.3	J	1 2	J	1.4	U	1.5	U	1.5	U	1	J	12.3		1.4	U	5.9	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	9.8		0.32	J	1	U	1	U	1	U	0.46	J	33.6		1		2	
Ethylbenzene	700	2		8 9		1	U	1	U	1	U	11 5		18		1	U	3.1	
Toluene	1000	2.6		5 3		1	U	1	U	1	U	5.4		5.4		1	U	1.1	
Trichloroethene	5	2.2		0.6	J	1	U	1	U	1	U	1 2		7.6		1.1		3.8	
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	0.47	J	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-RW-8		HAV-LTR-RW-9		HAV-LTR-RW-10		HAV-LTR-IW1		HAV-LTR-IW-2		HAV-LTR-IW4		HAV-LTR-DUP-5		HAV-LTR-IW5		HAV-LTR-HAV-04	
Sample Date:	**Goals for**	**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/4/2015**		**5/5/2015**		**5/4/2015**		**5/4/2015**		**5/4/2015**		**4/27/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-IW4**					
INORGANICS		**ug/L**		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	590		180		89	U	89	U	89	U	89	U	50	J	480	
Arsenic	10	3	U	3	U	3	U	3	U	7.1		3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		14		86		37		37		38		NA	
Iron	300	52	J	220		540		2000		26500		5000		5200		5400		1300	
Manganese	50	4.8	J	35		480		1500		9500		640		640		700		28500	
Vanadium	3.1	NA		NA		NA		11	U	1.3	J	2.2	U	2.2	U	2.2	U	NA	
DIOXINS/FURANS												**pg/L**		**pg/L**					
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		0.28		0 33		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	9.8	
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Dibenzofuran	4	2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.5	U	3.5		1.4	U	1.4	U	1.4	U	12.4	
Pentachlorophenol	1	15.2	U	14.9	U	15.2	U	981		4920		92.2		102		37.5		4180	
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	3.1	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	1	U	0.39	J	1	U	1	U	1	U	2.3	
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	6.1	
Toluene	1000	1	U	1	U	1	U	1	U	6.5		1.1		1.1		0.34	J	1	
Trichloroethene	5	1	U	1	U	1	U	1	U	0.92	J	1	U	1	U	1	U	7.2	
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-HAV-05		HAV-LTR-HAV-07		HAV-LTR-DUP03		HAV-LTR-MW-1		HAV-LTR-MW-2		HAV-LTR-MW-3		HAV-LTR-NW-6		HAV-LTR-NW-1	
Sample Date:	**Goals for**	**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/22/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**					**HAV-LTR-HAV-07**											
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	89	U	41	J	250		89	U	89	U	89	U
Arsenic	10	1.5	J	3	U	3	U	3	U	1 9	J	3	U	1.2	J	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		46	
Iron	300	17800		23	J	56	U	86		1100		21000		1200		53	J
Manganese	50	13700		11		5.1	J	93		220		1300		4100		22	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		2.2	U
DIOXINS/FURANS		**pg/L**														**pg/L**	
Toxicity Equivalent Quotient (TEQ)	30	28		NA		NA		NA		NA		NA		NA		35	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2-Methylnaphthalene	2	51 5		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	0.39	J	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Dibenzofuran	4	3.9		2.9	U	2.8	U	2.9	U	2 8	U	1.1	J	2.9	U	2.9	U
Naphthalene	3	310		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Pentachlorophenol	1	3490		15 3	U	15.1	U	15.4	U	2 8	J	599		471		15.2	U
Phenanthrene	41	8.5		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	5.6		1	U	1	U	1	U	1	U	0.71	J	0.41	J	1	U
Ethylbenzene	700	22		1	U	1	U	1	U	1	U	0.7	J	1	U	1	U
Toluene	1000	1.3		1	U	1	U	1	U	1	U	0.41	J	1	U	0.52	J
Trichloroethene	5	3.1		1	U	1	U	1	U	1	U	0.99	J	10	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	30.4		1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-FB05		HAV-LTR-RB-1		HAV-LTR-TB01		HAV-LTR-TB02		HAV-LTR-TB03		HAV-LTR-TB04		HAV-LTR-TB05	
Sample Date:	**Goals for**	**5/4/2015**		**4/21/2015**		**4/20/2015**		**4/22/2015**		**4/24/2015**		**4/28/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**														
INORGANICS		**mg/L**		**ug/L**											
Aluminum	200	89	U	89	U	NA		NA		NA		NA		NA	
Arsenic	10	3	U	3	U	NA		NA		NA		NA		NA	
Barium	2000	5.6	U	NA		NA		NA		NA		NA		NA	
Iron	300	220		56	U	NA		NA		NA		NA		NA	
Manganese	50	3.2	J	5.6	U	NA		NA		NA		NA		NA	
Vanadium	3.1	2.2	U	NA		NA		NA		NA		NA		NA	
DIOXINS/FURANS															
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**											
2-Methyl-4,6-dinitrophenol	1.7	7.9	U	7.9	U	NA		NA		NA		NA		NA	
2-Methylnaphthalene	2	1.5	U	1.5	U	NA		NA		NA		NA		NA	
Benzo(a)pyrene	0.2	1.5	U	1.5	U	NA		NA		NA		NA		NA	
Bis(2-ethylhexyl)phthalate	6	3	U	3	U	NA		NA		NA		NA		NA	
Dibenzofuran	4	3	U	3	U	NA		NA		NA		NA		NA	
Naphthalene	3	1.5	U	1.5	U	NA		NA		NA		NA		NA	
Pentachlorophenol	1	15.8	U	15.8	U	NA		NA		NA		NA		NA	
Phenanthrene	41	1.5	U	1.5	U	NA		NA		NA		NA		NA	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	0.58	J	0.65	J	0.69	J	0.66	J	0.66	J	0.68	J	0.58	J
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 4
SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.
Shaded cells indicate that the value exceeds the Groundwater Remediation Goals.

TABLE 5
HISTORICAL CONTAMINANT CONCENTRATIONS IN MONITORING WELLS
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Well Location	Sep. 10		Dec. 10		Mar. 11		Jun. 11	Sep. 11		Dec. 11	Mar. 12		Jun. 12	Sep. 12		Dec. 12	Mar. 13		Jun. 13	Nov. 13	Jan. 14	Apr. 14		Jul. 14	Sep. 14		Dec. 14	Apr. 15		Jul. 15	Well Location
	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	PCP ug/L	Dioxin ppt (ng/l)	PCP ug/L	
CW-1S					180+						13						160					145						97			CW-1S
CW-1I																														CW-1I
CW-1D					30	0.00025					20						8.9					11.4	0.00004				7.3			CW-1D
CW-2S																														CW-2S
CW-2I							4200				2800+						2500					657					327			CW-2I
CW-2D					1800+	0.00132					1700+						1800					2310	0.00038				2675			CW-2D
CW-3S							3.1				54						2.3					ND					ND			CW-3S
CW-3I																														CW-3I
CW-3D					220+	0.00207					120+						140					552	0.000559				209			CW-3D
CW-4S					410+						68						1000					807					528			CW-4S
CW-4I							640				740+						1400					956					1660			CW-4I
CW-4D					120+	0.00036					ND						1700					1180	0.000246				1260			CW-4D
CW-5S							ND				ND						240					3.3					108			CW-5S
CW-5I																														CW-5I
CW-5D					ND	0.00033					ND						16					ND	0.000184				6			CW-5D
CW-6S							ND				ND																			CW-6S
CW-6I																														CW-6I
CW-6D					440+	0.00073					150+																			CW-6D
CW-7S											ND											ND					ND			CW-7S
CW-7D											ND											ND					ND			CW-7D
CW-8S					ND												ND										ND			CW-8S
CW-8D					0.54												ND										ND			CW-8D
R-2					500+	0.369					6000+	0.297					3300	0.176												R-2
R-4	ND																													R-4
HAV-02					3700+	0.356					7800																			HAV-02
HAV-04							4900				4000						2900					3290					4180			HAV-04
HAV-07	ND		ND		0.18		ND	ND		ND	ND		ND	0.48		0.59	ND		ND	ND	ND			ND		ND	ND		ND	HAV-07
HAV-05			1600		660+	0.134	270	860+		360+	3100	0.0244	4600	4500		6000	3600	0.073	3100	5960	4130	2020	0.0188	1800			3920	3490	0.028	2150	HAV-05
NW-01					9.3	0.0866				9.3	ND	0.0525					9.8	0.1060				ND	0.025					ND	0.035		NW-01
NW-06					1100+	0.00051				1100+	1600+						520					891	0.00042					471			NW-06
CW-9S											ND																			CW-9S
CW-9D	ND							0.51						0.31								ND					ND			CW-9D
CW-10S					ND												ND													CW-10S
CW-10D	460	0.00011						180+	0.00022					6.70	0.0000068							ND	0.00007				ND	0.00008		CW-10D
CW-11S					ND												ND													CW-11S
CW-11D	ND							ND						1.20								ND					ND			CW-11D
CW-12S											ND																ND			CW-12S
CW-12D	ND							0.19						0.86								4					ND			CW-12D
CW-13S											ND																ND			CW-13S
CW-13D	ND							ND						63		ND						115					ND			CW-13D
CW-14S					ND						ND						ND													CW-14S
CW-14D					ND						ND						ND													CW-14D
CW-15					ND						ND						ND					ND								CW-15
IW-1(RW-1)	RTED TO IW-1 IN JUNE 2010 (ONLINE AUGU				41					130+	430+		210	410		190	ND			643		358					981			IW-1(RW-1)
IW-2(RW-2)	RTED TO IW-2 IN JUNE 2010 (ONLINE AUGU				5.6					4000+	2400+		6200	5200		5500	4800			10200		4750					4920			IW-2(RW-2)
RW-3					4300+						5000						3800					8620					4160	0.00230		RW-3
IW-3(RW-4)	RTED TO IW-3 IN JUNE 2010 (ONLINE AUGU				2.5					510+	1700		3100			*DRY*	*DRY*					980					DRY			IW-3(RW-4)
RW-5	3200	0.00015			1300+	0.00026		2900+			1900	0.000697		2000	0.0017		5200	0.00013		4040		2860	0.00328		2350	0.00016		3820	0.00009		RW-5
RW-6	990	0.000069			310+	0.000009		780+			460			470			700			289		306	0.00033		279			498			RW-6
RW-7	NE OCTOBER 2010)		3600	0.000039	2300+			3700+			3100+			2300			3200			2850		2580			2680			2110	0.00005		RW-7
RW-8	1.3	0.00011	3.3	0.000179							ND			ND		ND	ND		ND	ND	ND	ND		ND		ND	ND		0.056	RW-8
RW-9	3.2	ND	4.3	0.000029							ND			ND		ND	ND		ND	ND	ND	ND		ND		ND	ND		0.076	RW-9
RW-10	12	0.00058	3.0	0.000203							ND			160		ND	ND		ND	ND	ND	ND		ND		2.4 J	ND		0.062	RW-10
CTR	590	0.0043			330+	0.0040		710+			420+	0.00233		1200	0.000031		500	0.00227		775		415	0.00018		509	0.00959		255	0.00565		CTR
Plant Inf.	2500	0.0005	3100	0.0093	1700	0.00012	1600	3300	0.0019	2200	1900	0.197	3600	1900	0.0000	1800	2400	0.0014	2200	3620		3240	0.00014	2740				1710	0.00012		Plant Inf.
MW-1	23		61		2.6		5.0	27		8.1	ND		18	81		19	2.4		ND	10.6	3.4	ND		ND	3.3		ND	ND		ND	MW-1
MW-2	1.2		ND		0.50		ND	2.9		3.7	12		ND	0.73		1.3	ND		ND	ND	ND	4.3		ND	1.70		ND	2.8		ND	MW-2
MW-3					1500+						900+						920					1040		1040				599			MW-3
CW-16S					1200+						470+	0.00833					2300	0.022				101	0.00274					8.4	0.00310		CW-16S
CW-16I																														CW-16I
CW-16D					48	0.00105					31						33					29.55	0.00048					3.7			CW-16D
CW-17D					2500+						2700						1800					3780						1300			CW-17D
CW-18D					0.30						10						ND					52.6						59.8			CW-18D
CW-19D					2400+						1800+						1300					1030						554			CW-19D
CW-20S					9.2						ND						6.5					5.0						2.1			CW-20S
CW-20D					2.2						ND						ND					ND						ND			CW-20D
CW-21S	1900		1500		770+		410	690+		350+	710		990	1000		1700	1300		2000	1340	1370	833		985			883	892		475	CW-21S
CW-21D	1900		1100		660+		530	610+		370+	590		660	780		1600	1300		2100	1360	1070	830		846			864	1030		496	CW-21D
CW-22S	1.5		ND		ND		ND	0.28		16.0	ND		ND	1.10		ND	ND		ND	ND	ND	ND		ND	ND		ND	ND		ND	CW-22S
CW-22D	ND		ND		ND		ND	0.22		8.2	ND		ND	54		ND	ND		0.97	ND	ND	ND		ND	8		ND	ND		ND	CW-22D
CW-23D					1.0						ND						ND					ND						ND			CW-23D
CW-24D	5600	0.0011						3900	0.0093		2700+	0.00503					4000	0.0062				2230	0.00603					1920	0.00147		CW-24D
CW-25D																														CW-25D
CW-26D					88+					2500	2100+		3400	2800		2900	1300			3260		3560					4.1			CW-26D
CW-27D					1500+					4800	2400		6100	3600		5200	4600			3740		1810					1950			CW-27D
CW-28D					3000+						3000+						1800					6830						3230			CW-28D
IW-4(CW-29D)	8600	0.00031					4200			430+	73	0.00180	ND	450		250	2.9	0.00087		112		11	0.00025					97.1	0.00031		IW-4(CW-29D)
IW-5(CW-30D)					2400+					2800+	ND		46	380		250	ND			3.65		33.2						37.5			IW-5(CW-30D)
CW-31D	ED TO RW-7 IN MARCH 2010 (ONLINE OCTO																													CW-31D
CW-32			1.2	0.000004							ND			ND		ND	ND		ND		ND	ND		ND			ND	ND		ND	CW-32
CW-33			0.31	0.000069							ND			ND		ND	ND		ND		ND	ND		ND			ND	ND		ND	CW-33
CW-34			3.2	0.000086							ND			ND		ND	ND		ND		ND	ND		ND			ND	ND		0.1	CW-34

ND - Not Detected

TABLE 6
COMPARISON OF GROUNDWATER REMEDIATION GOALS TO SAMPLING RESULTS OF RW-8, RW-9, AND RW-10
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-RW-8																					
Sample Date:	**Goals for**	**3/19/2012**		**9/24/2012**		**12/17/2012**		**3/19/2013**		**6/12/2013**		**11/12/2013**		**1/27/2014**		**4/29/2014**		**6/30/2014**		**10/1/2014**		**12/30/2014**	
	Groundwater																						
INORGANICS	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	200	200	U	NA		NA		1510		NA		NA		NA		89	U	NA		NA		NA	
Arsenic	10	10	U	NA		NA		10	U	NA		NA		NA		3		NA		NA		NA	
Barium	2000	90.4	J	NA		NA		231	J	NA		NA		NA		81		NA		NA		NA	
Iron	300	100	U	NA		NA		6180	J	NA		NA		NA		23		NA		NA		NA	
Manganese	50	865		NA		NA		1830		NA		NA		NA		760		NA		NA		NA	
Vanadium	3.1	50	U	NA		NA		50	U	NA		NA		NA		2.2	U	NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	10	U	10	U	10	U	10	U	10	U	7.6	U	7.5	U	7.5	U	7.5	U	7.6	U	7.5	U
2-Methylnaphthalene	2	5	U	5	U	5	U	5	U	5	U	1 9	U	1.9	U	1.4	U	1.4	U	1.9	U	1.4	U
Benzo(a)pyrene	0.2	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	5	U	5	U	5	U	5	U	5	U	2 8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U
Dibenzofuran	4	5	U	5	U	5	U	5	U	5	U	2 8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U
Naphthalene	3	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Pentachlorophenol	1	10	U	10	U	10	U	10	U	10	U	15 2	U	15.1	U	15	U	15.1	U	0.93	U	15.1	U
Phenanthrene	41	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U	0 018	J	1.4	U
VOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	5	U	5	U	5	U	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	5	U	5	U	5	U	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	5	U	5	U	5	U	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	5	U	5	U	5	U	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	5	U	5	U	5	U	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 6
COMPARISON OF GROUNDWATER REMEDIATION GOALS TO SAMPLING RESULTS OF RW-8, RW-9, AND RW-10
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation					HAV-LTR-RW-9																	
Sample Date:	Goals for	4/20/2015		7/1/2015		3/19/2012		9/24/2012		12/20/2012		3/19/2013		6/12/2013		11/12/2013		1/27/2014		4/29/2014		6/30/2014	
	Groundwater																						
INORGANICS	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	200	89	U	NA		200	U	NA		NA		200	U	NA		NA		NA		89	U	NA	
Arsenic	10	3	U	NA		10	U	NA		NA		10	U	NA		NA		NA		3		NA	
Barium	2000	NA		NA		85.5	J	NA		NA		200	U	NA		NA		NA		82		NA	
Iron	300	52	J	NA		100	U	NA		NA		100	U	NA		NA		NA		19		NA	
Manganese	50	4.8	J	NA		1940		NA		NA		364		NA		NA		NA		730		NA	
Vanadium	3.1	NA		NA		50	U	NA		NA		50	U	NA		NA		NA		2.2	U	NA	
SEMIVOLATILES		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.5	U	10	U	10	U	10	U	10	U	10	U	7.6	U	7.6	U	7.4	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	5	U	5	U	5	U	5	U	5	U	2 9	U	2.8	U	2.8	U	2.9	U
Dibenzofuran	4	2.8	U	2.8	U	5	U	5	U	5	U	5	U	5	U	2 9	U	2.8	U	2.8	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U
Pentachlorophenol	1	14.9	U	15	U	10	U	10	U	10	U	10	U	10	U	15 2	U	15.2	U	14.8	U	15.5	U
Phenanthrene	41	1.4	U	1.4	U	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U	1.4	U	1.4	U
VOLATILES	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Benzene	5	1	U	1	U	0.5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	0.5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	0.5	U	5	U	0.75	J	5	U	5	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	0.5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	0.5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U

TABLE 6
COMPARISON OF GROUNDWATER REMEDIATION GOALS TO SAMPLING RESULTS OF RW-8, RW-9, AND RW-10
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation																												HAV-LTR-RW	
Sample Date:	**Goals for**	**10/1/2014**		**12/30/2014**		**4/20/2014**		**7/1/2015**		**3/19/2012**		**10/2/2012**		**12/20/2012**		**3/19/2013**		**6/12/2013**		**11/12/2013**		**1/27/2014**	
	Groundwater																						
INORGANICS	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	200	NA		NA		590		NA		200	U	NA		NA		200	U	NA		NA		NA	
Arsenic	10	NA		NA		3	U	NA		10	U	NA		NA		10	U	NA		NA		NA	
Barium	2000	NA		NA		NA		NA		85.8	J	NA		NA		200	U	NA		NA		NA	
Iron	300	NA		NA		220		NA		100	U	NA		NA		2850	J	NA		NA		NA	
Manganese	50	NA		NA		35		NA		1600		NA		NA		1240		NA		NA		NA	
Vanadium	3.1	NA		NA		NA		NA		50	U	NA		NA		50	U	NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	8.1	U	7.6	U	7.4	U	7.6	U	10	U	10	U	10	U	10	U	10	U	7.5	U	7.6	U
2-Methylnaphthalene	2	1 5	U	1.4	U	1.4	U	1.4	U	5	U	2.7	J	5	U	5	U	5	U	1.9	U	1.4	U
Benzo(a)pyrene	0 2	1 5	U	1.4	U	1.4	U	1.4	U	5	U	5	U	5	U	5	U	5	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	3	U	2.8	U	2.8	U	2.8	U	5	U	5	U	5	U	5	U	5	U	2.8	U	2.9	U
Dibenzofuran	4	3	U	2.8	U	2.8	U	2.82.9	U	5	U	0.21	J	5	U	5	U	5	U	2.8	U	2.9	U
Naphthalene	3	1 5	U	1.4	U	1.4	U	1.4	U	5	U	13		5	U	5	U	5	U	1.4	U	1.4	U
Pentachlorophenol	1	16 2	U	15.2	U	14.9	U	15	U	10	U	160	J	10	U	10	U	10	U	15.1	U	15.2	U
Phenanthrene	41	1 5	U	1.4	U	1.4	U	1.4	U	5	U	0.5	J	5	U	5	U	5	U	1.4	U	1.4	U
VOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	1	U	0.5	U	5	U	5	U	1	U	5	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	0.5	U	5	U	5	U	1	U	5	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	0.5	U	5	U	1.2	J	1	U	5	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	0.5	U	5	U	5	U	1	U	5	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	0.5	U	5	U	5	U	1	U	5	U	1	U	1	U

TABLE 6
COMPARISON OF GROUNDWATER REMEDIATION GOALS TO SAMPLING RESULTS OF RW-8, RW-9, AND RW-10
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

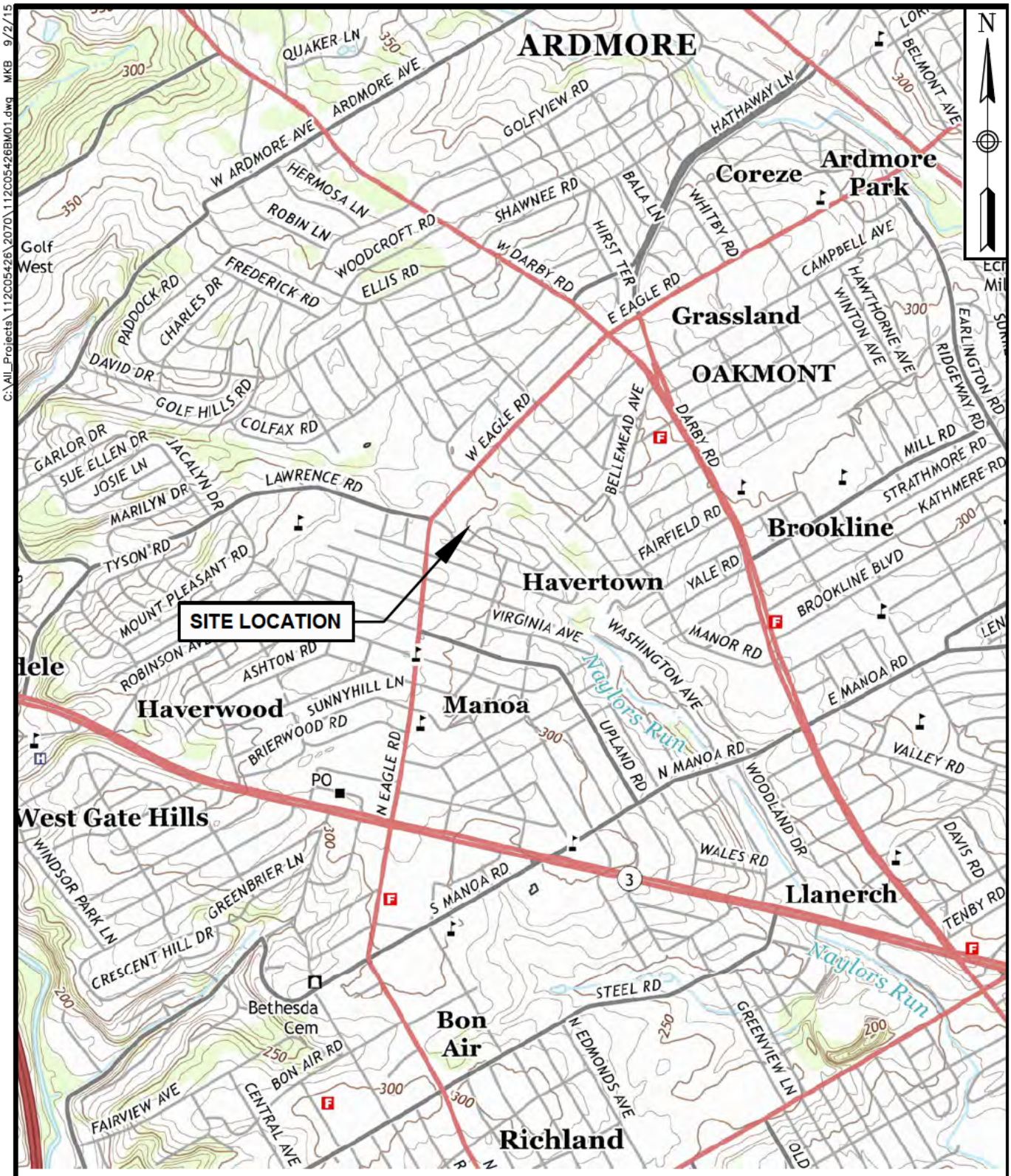
Sample ID:	Remediation	-10															
Sample Date:	**Goals for**	**4/29/2014**		**6/30/2014**		**10/1/2014**		**12/30/2014**		**4/20/2015**		**7/1/2015**	
	Groundwater												
INORGANICS	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	200	44	U	NA		NA		NA		180		NA	
Arsenic	10	3		NA		NA		NA		3	U	NA	
Barium	2000	110		NA		NA		NA		NA		NA	
Iron	300	390		NA		NA		NA		540		NA	
Manganese	50	1400		NA		NA		NA		480		NA	
Vanadium	3.1	0 85	U	NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.5	U	7.5	U	7.7	U	7.6	U	7.4	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	2.8	U	2 9	U	2.8	U	2.8	U
Dibenzofuran	4	2.8	U	2.8	U	2.8	U	2 9	U	2.8	U	2.8	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Pentachlorophenol	1	15	U	15.1	U	0.94	U	2.4	J	15.2	U	14.9	U
Phenanthrene	41	1.4	U	1.4	U	0.094	U	1.4	U	1.4	U	1.4	U
VOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U

TABLE 6
COMPARISON OF GROUNDWATER REMEDIATION GOALS TO SAMPLING RESULTS OF RW-8, RW-9, AND RW-10
HAVERTOWN PCP SUPERFUND SITE
HAVERTOWN, PENNSYLVANIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.

NA-- Not Available.
Shaded cells indicate that the value exceeds the Groundwater Remediation Goals.

FIGURES



TETRA TECH

SITE LOCATION MAP
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C05426BM01
REV	0
DATE	9/2/15
FIGURE NUMBER	1

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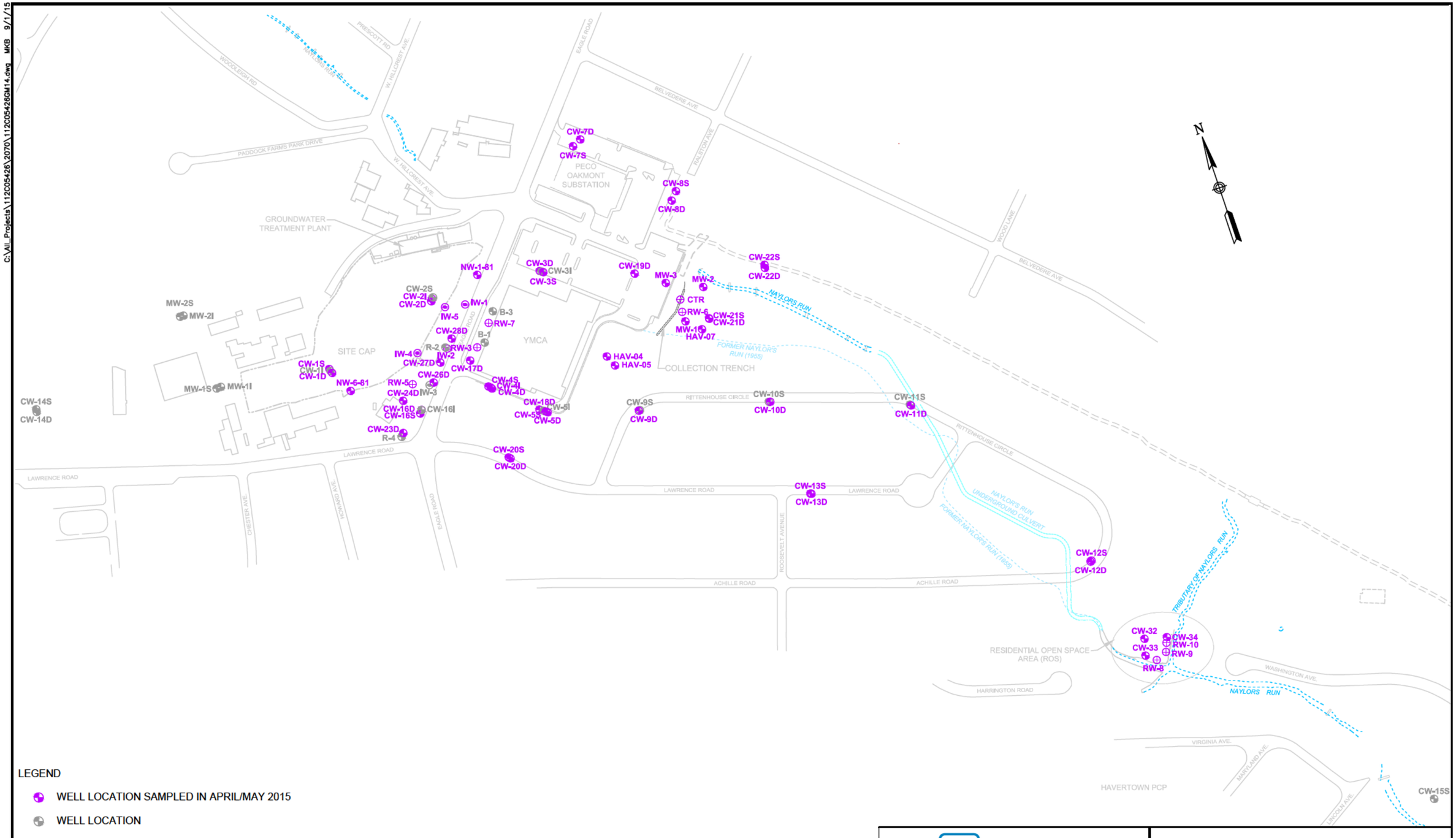

LEGEND

- WELL LOCATION SAMPLED IN APRIL/MAY 2015
- WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN APRIL/MAY 2015
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION APRIL/MAY 2015
- INJECTION WELL LOCATION

0 250 500
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM14.dwg	AS NOTED
FIGURE NUMBER 2	REV 0 / DATE 9/1/15

WELLS SAMPLED IN LATE APRIL/EARLY MAY 2015
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

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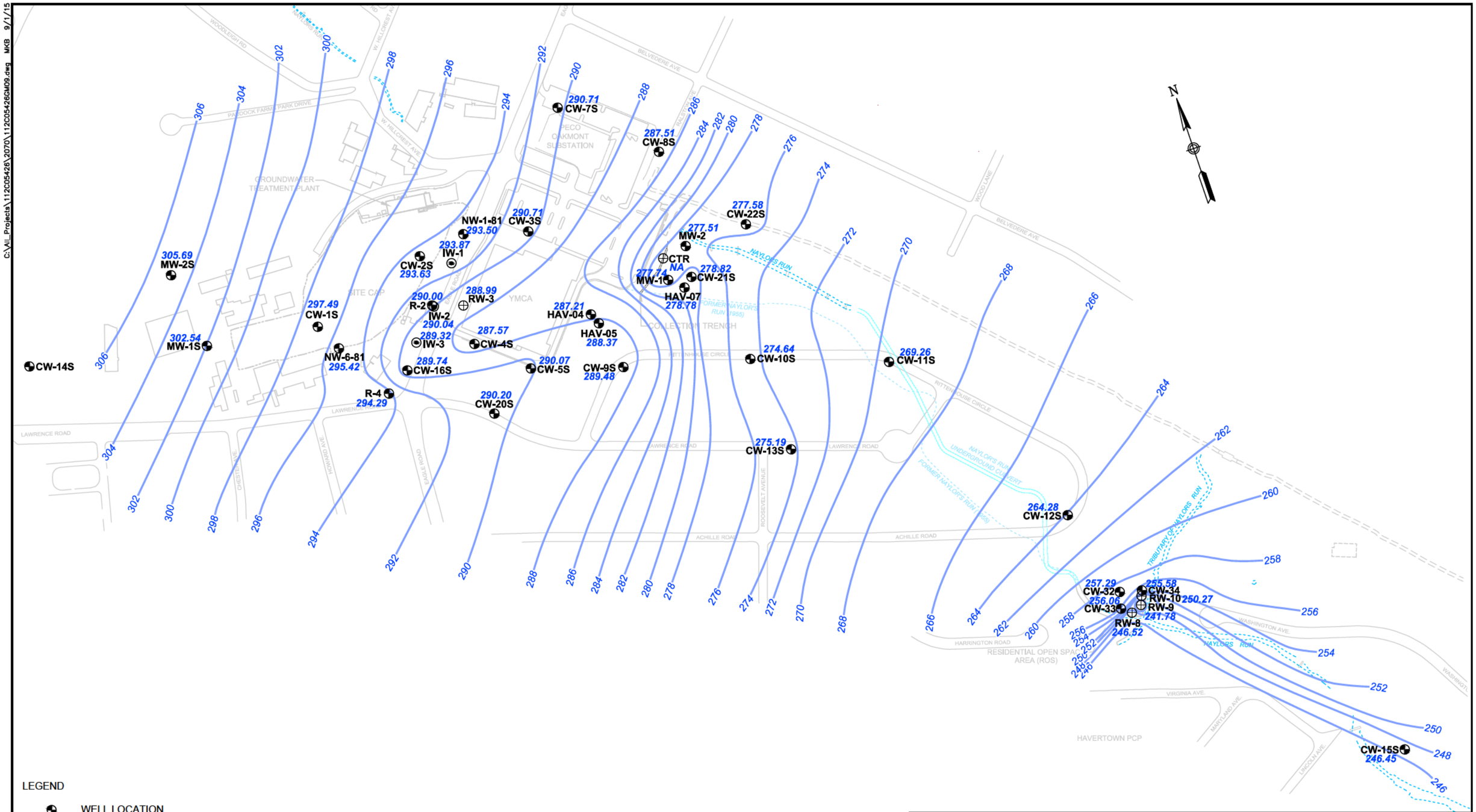

LEGEND

- WELL LOCATION
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION
- 274.42 GROUNDWATER ELEVATION (FEET, MSL)
- 280 GROUNDWATER CONTOUR

NOTES:
1. GROUNDWATER LEVEL MEASUREMENTS WERE COLLECTED ON MAY 15, 2015.
2. COLLECTION TRENCH (CTR) AND RECOVERY WELLS (RW-5, RW-6, RW-7, RW-8, AND RW-10) WERE ON-LINE.
3. INJECTION WELLS (IW-4 AND IW-5) WERE OFF-LINE.

0 250 500
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM09.dwg	AS NOTED
FIGURE NUMBER 3	REV 0 / DATE 9/1/15

SHALLOW GROUNDWATER CONTOURS MAY 15, 2015 HAVERTOWN PCP SUPERFUND SITE DELAWARE COUNTY HAVERTOWN, PENNSYLVANIA

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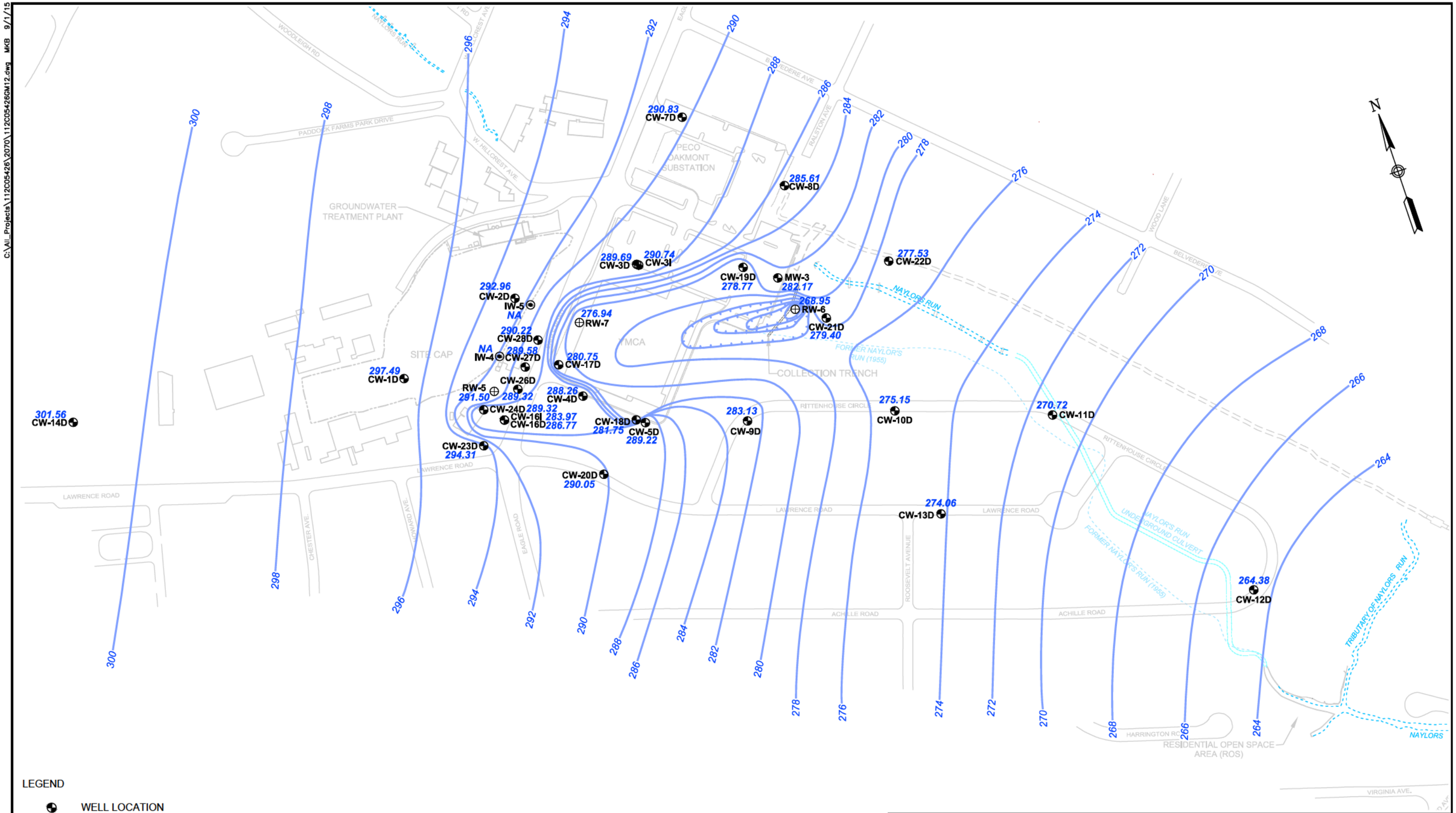

LEGEND

- WELL LOCATION
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION
- 267.82 GROUNDWATER ELEVATION (FEET, MSL)
- GROUNDWATER CONTOUR

NOTES:
1. GROUNDWATER LEVEL MEASUREMENTS WERE COLLECTED ON MAY 15, 2015.
2. COLLECTION TRENCH (CTR) AND RECOVERY WELLS (RW-5, RW-6, RW-7, RW-8, AND RW-10) WERE ON-LINE.
3. INJECTION WELLS (IW-4 AND IW-5) WERE ON-LINE.

0 220 440
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM12.dwg	AS NOTED
FIGURE NUMBER 4	REV 0 / DATE 9/1/15

DEEP GROUNDWATER CONTOURS MAY 15, 2015 HAVERTOWN PCP SUPERFUND SITE DELAWARE COUNTY HAVERTOWN, PENNSYLVANIA

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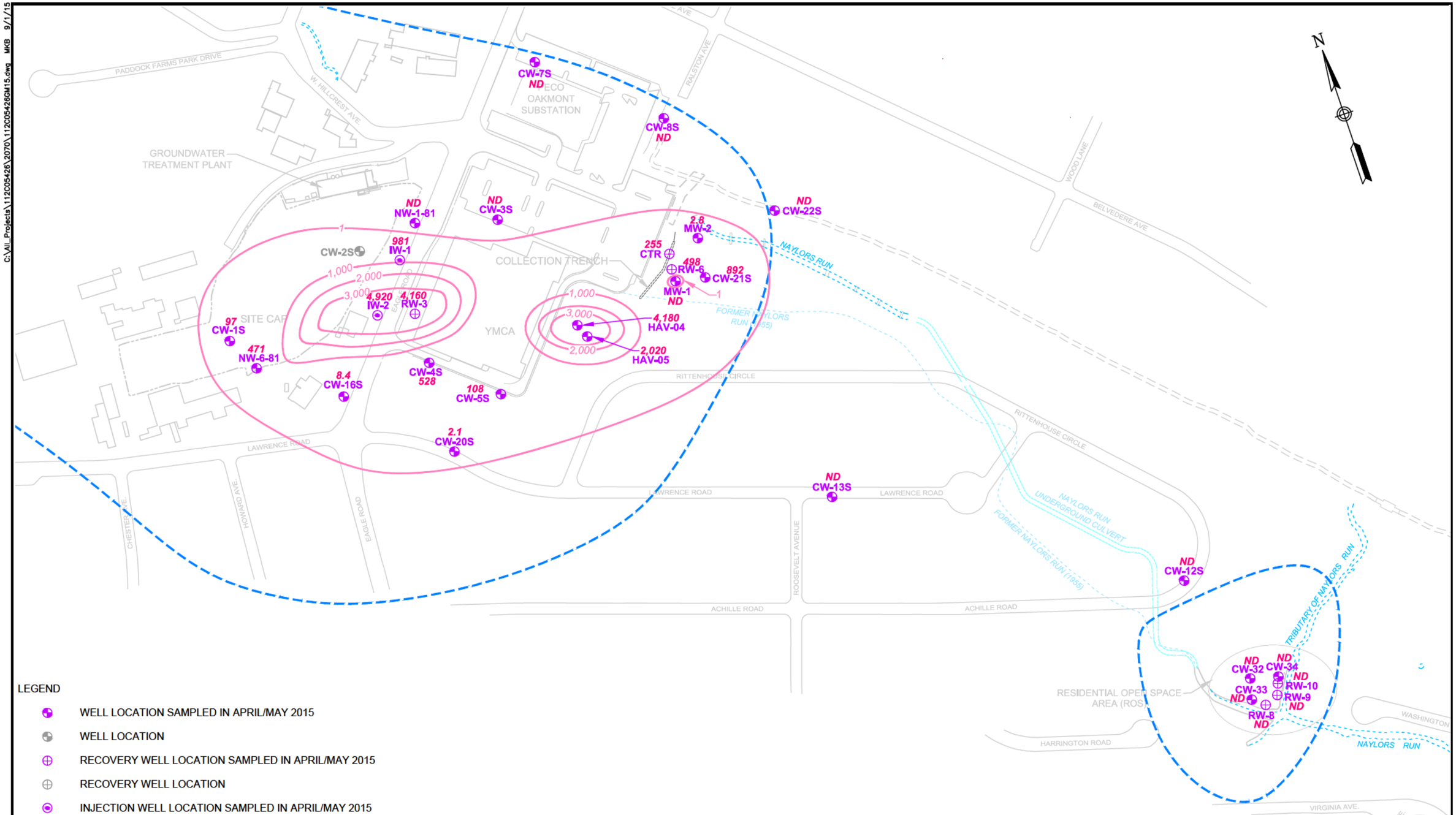

LEGEND

- WELL LOCATION SAMPLED IN APRIL/MAY 2015
- WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN APRIL/MAY 2015
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION SAMPLED IN APRIL/MAY 2015
- INJECTION WELL LOCATION
- 4,160 PCP CONCENTRATION (µg/L)
- —1,000— PCP CONCENTRATION CONTOUR (µg/L) (DASHED WHERE INFERRED)
- INFERRED CAPTURE ZONE AREA

0 200 400
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM15.dwg	AS NOTED
FIGURE NUMBER	REV / DATE
5	0 / 9/1/15

SHALLOW OVERBURDEN PCP PLUME MAP
LATE APRIL/EARLY MAY 2015
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

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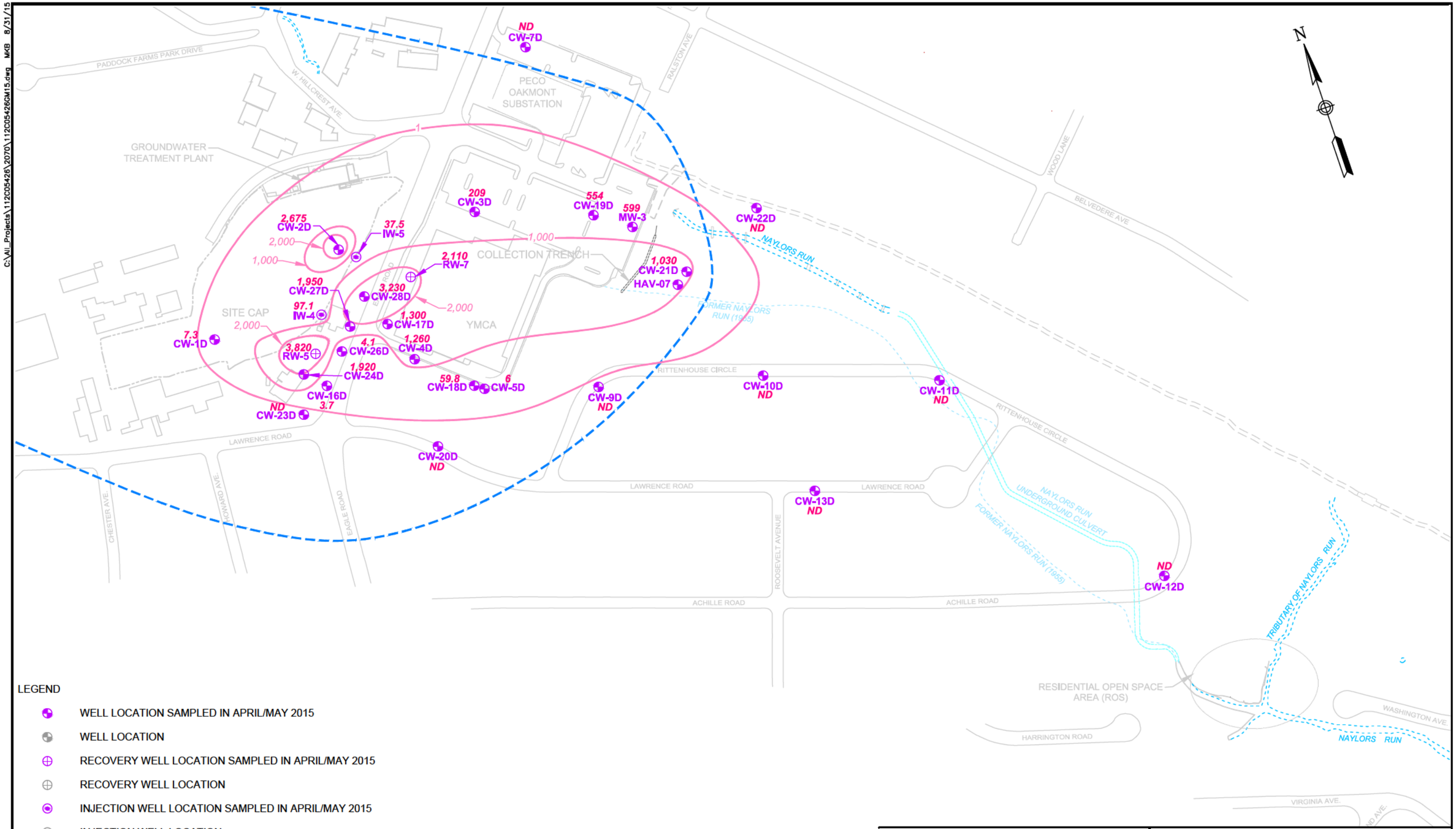


LEGEND

- WELL LOCATION SAMPLED IN APRIL/MAY 2015
- WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN APRIL/MAY 2015
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION SAMPLED IN APRIL/MAY 2015
- INJECTION WELL LOCATION
- 1,260 PCP CONCENTRATION (µg/L)
- —1,000— PCP CONCENTRATION CONTOUR (µg/L) (DASHED WHERE INFERRED)
- INFERRED CAPTURE ZONE AREA

0 200 400
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM15.dwg	AS NOTED
FIGURE NUMBER	REV / DATE
6	0 / 8/31/15

DEEP BEDROCK PCP PLUME MAP
LATE APRIL/EARLY MAY 2015
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

Figure 7

Source Area PCP Concentration Graph – Injection Wells and Surrounding Wells
2010 -2015
Havertown PCP Site

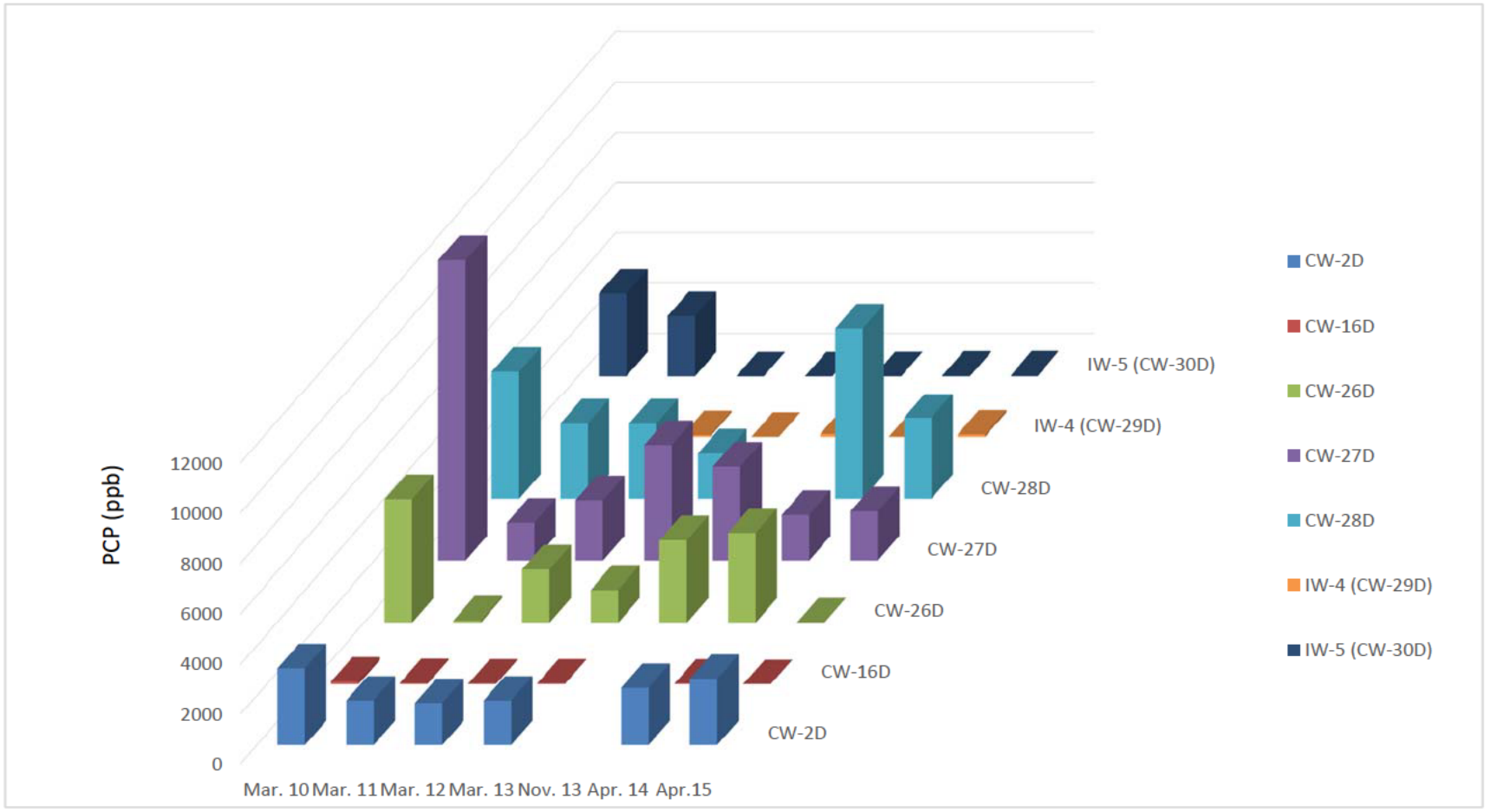


Figure 8

Source Area PCP Concentration Graph – Recovery Wells and PCG/YMCA Wells
2010 -2015
Havertown PCP Site

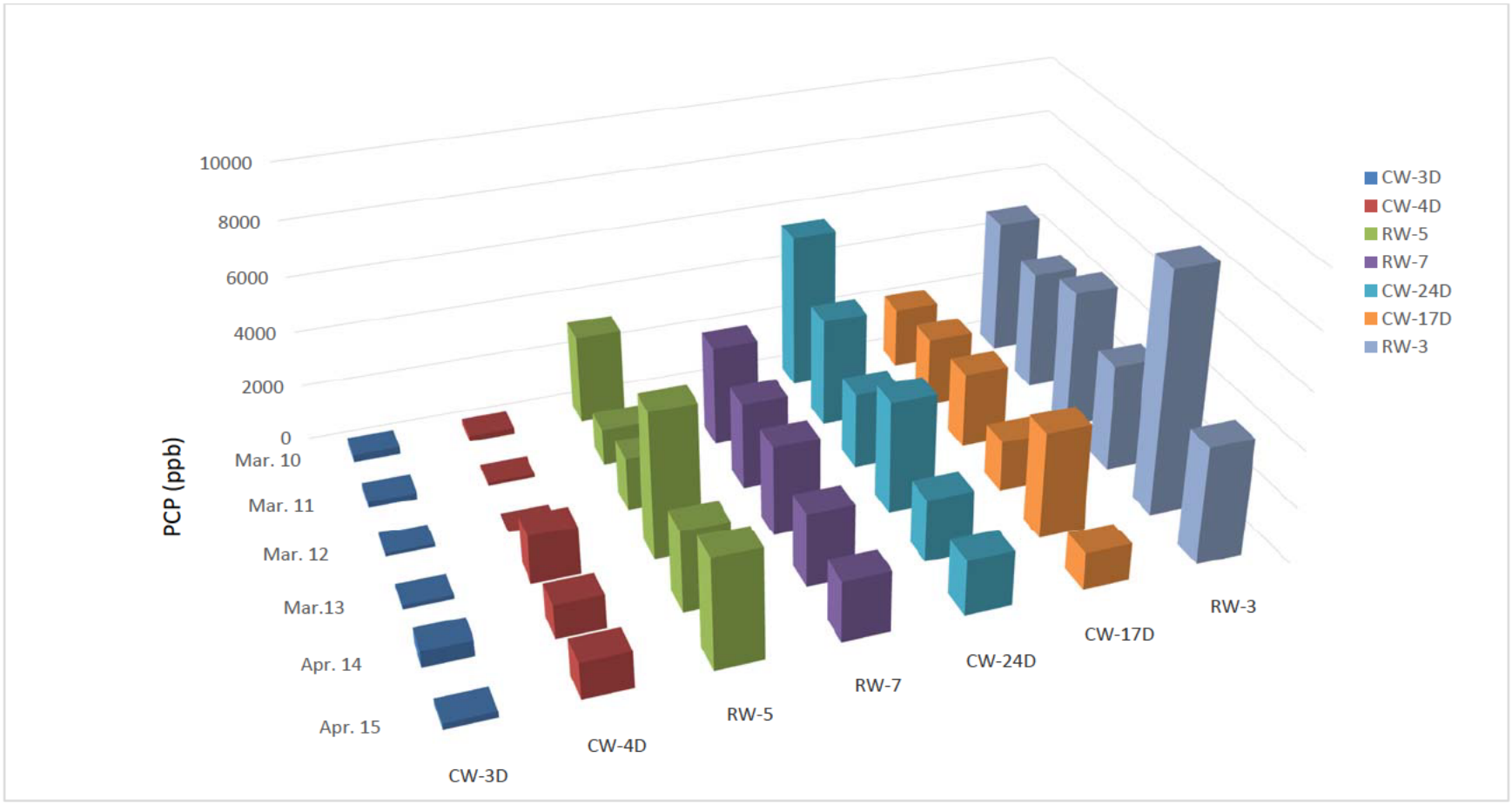


Figure 9

PCP Concentration Graph – Collection Trench Area Wells
2010 -2015
Havertown PCP Site

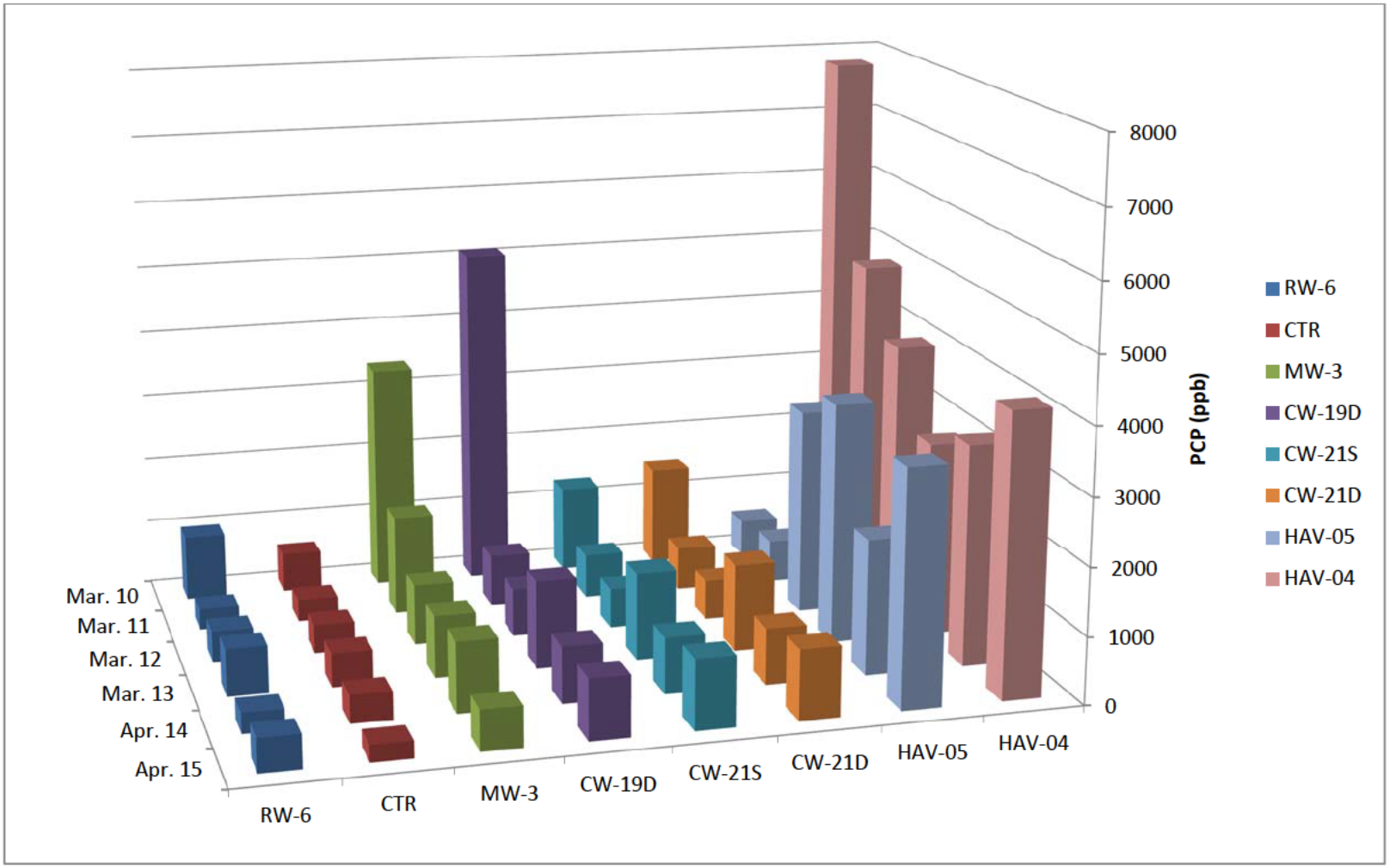


Figure 10

PCP Concentration Graph – Plume Perimeter Wells
2010 -2015
Havertown PCP Site

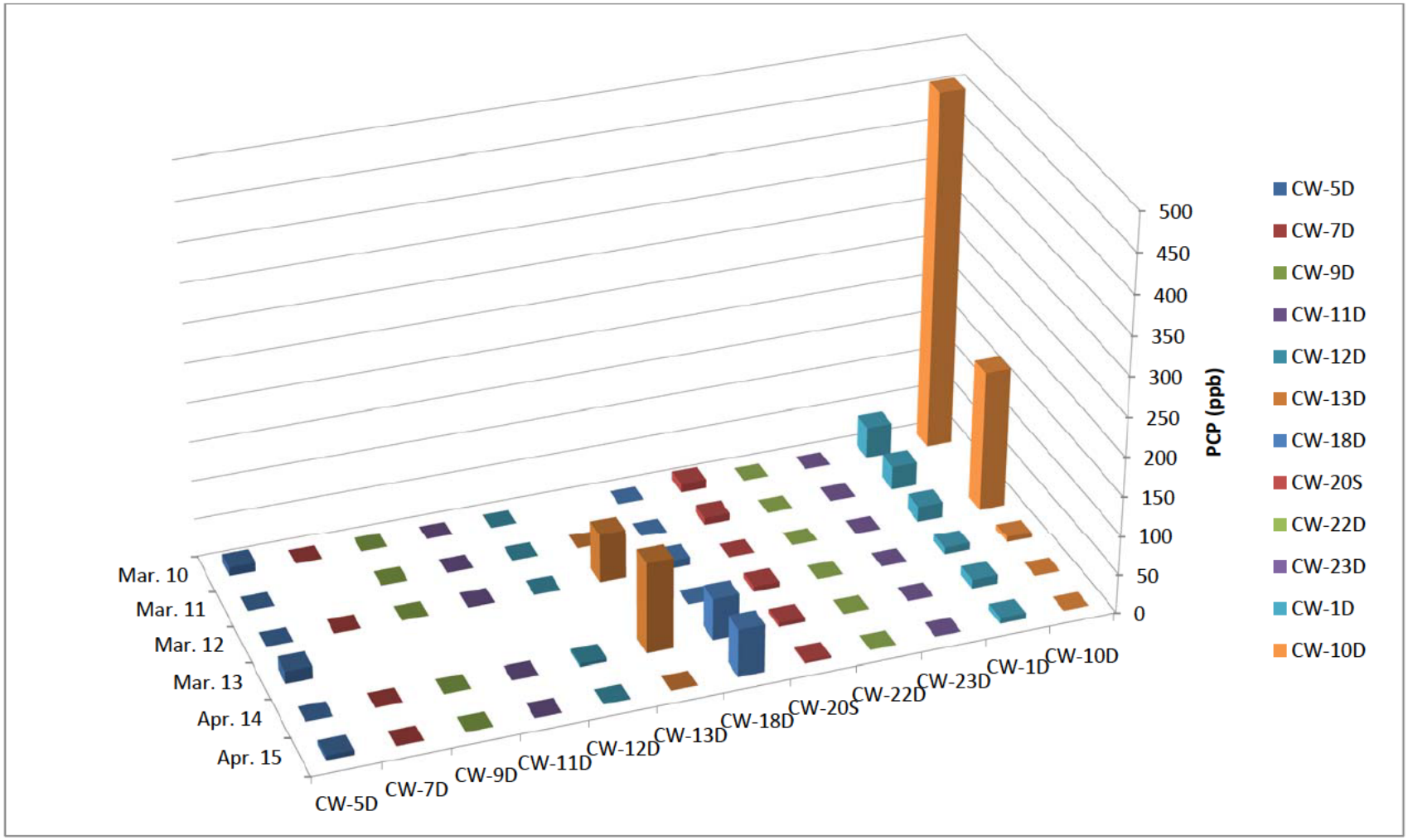
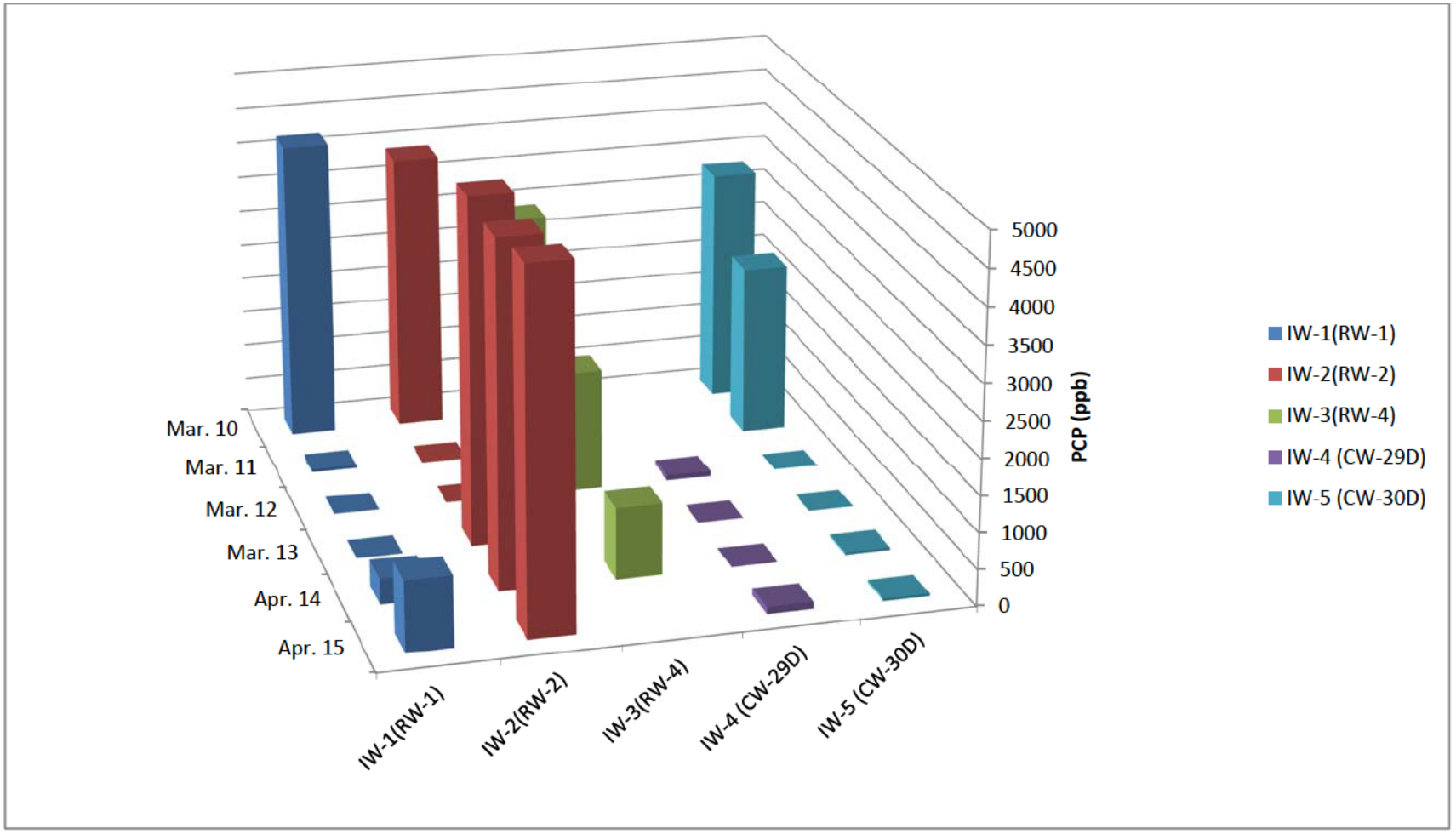


Figure 11

PCP Concentration Graph – Injection Wells
2010 -2015
Havertown PCP Site



APPENDIX A

ANALYTICAL DATA

A-1 OCTOBER 2014 GROUNDWATER DATA

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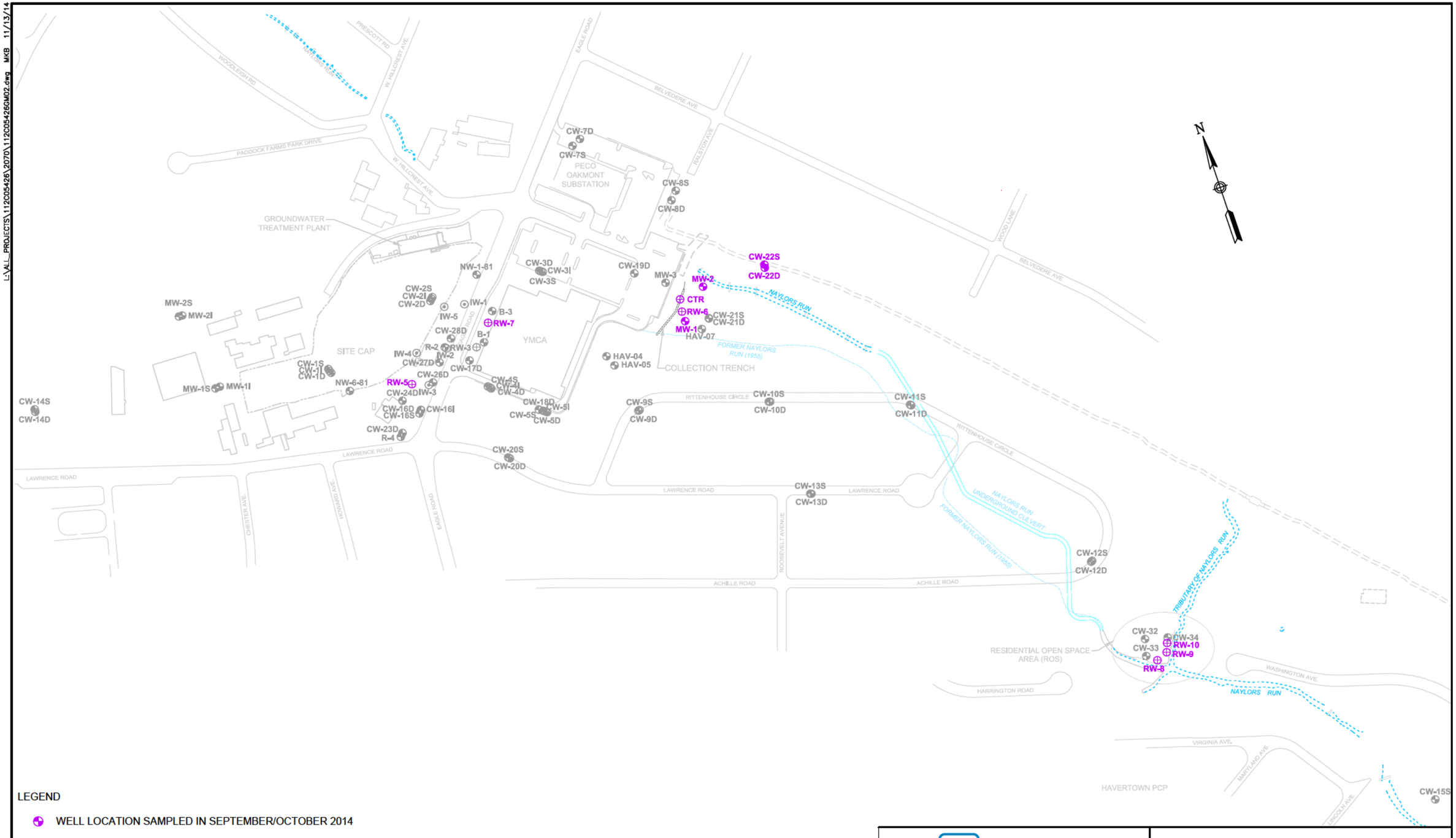


LEGEND

- WELL LOCATION SAMPLED IN SEPTEMBER/OCTOBER 2014
- WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN SEPTEMBER/OCTOBER 2014
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION

0 250 500
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM02	AS NOTED
FIGURE NUMBER: 1	REV: 0 DATE: 11/13/14

WELLS SAMPLED IN SEPTEMBER/OCTOBER 2014
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

DATA SUMMARY OF ANALYTICAL RESULTS
SEPTEMBER/OCTOBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells						CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW-22D**		**HAV-LTR-CW-22S**		**HAV-LTR-MW-01**		**HAV-LTR-MW-02**		**HAV-LTR-CTR**		**HAV-LTR-DUP-01**	
Sample Date:	**Goal**	**10/1/2014**		**10/1/2014**		**10/1/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**	
Duplicate of:	**Objective**																	**HAV-LTR-CTR**	
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2,3,4,6-Tetrachlorophenol		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	28.8		19.7	
2,4,5-Trichlorophenol		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	2	J	1.4	J
2,4,6-Trichlorophenol		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	1.2	J	0 89	J
2,4-Dichlorophenol		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	7.8	U	7.6	U
2-Chloronaphthalene		2.8	U	2.9	U	2.8	U	3	U	2 9	U	2 9	U	2 9	U	2.9	U	2.9	U
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	7.8	U	10.1	
2-Methylnaphthalene	2	1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
4-Chloroaniline		2.8	U	2.9	U	2.8	U	3	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Acenaphthene		1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acenaphthylene		1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acetophenone		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	7.8	U	7.6	U
Anthracene		1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(a)pyrene	0.2	1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Biphenyl		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	7.8	U	7.6	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.9	U	2.8	U	3	U	2 9	U	2 9	U	2 9	U	2.9	U	2.9	U
Butylbenzylphthalate		2.8	U	2.9	U	2.8	U	3	U	2 9	U	2 9	U	2 9	U	2.9	U	2.9	U
Carbazole		2.8	U	2.9	U	2.8	U	3	U	2 9	U	2 9	U	2 9	U	2.9	U	2.9	U
Dibenzofuran	4	2.8	U	2.9	U	2.8	U	3	U	2 9	U	2 9	U	2 9	U	2.9	U	2.9	U
Diethylphthalate		7.5	U	7.8	U	7.5	U	0.62	J	7.7	U	7.6	U	7.6	U	7.8	U	7.6	U
Fluorene		1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Mp-cresol		7.5	U	7.8	U	7.5	U	8.1	U	7.7	U	7.6	U	7.6	U	7.8	U	7.6	U
Naphthalene	3	1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Pentachlorophenol	1	15	U	15.5	U	15.1	U	16.2	U	15.4	U	2 3	J	15 2	U	509		363	
Phenanthrene	41	1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Pyrene		1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
SIM SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Pentachlorophenol	1	0.93	U	0.97	U	0.94	U	8		0.96	U	3 3		1.7		181		165	
Phenanthrene	41	0.018	J	0.097	U	0.094	U	0.041	J	0.096	U	0.095	U	0.095	U	0.014	J	0.095	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.61	J	0 55	J
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	10	U	10	U	10	U	10	U	3.4	J	3.9	J	4.7	J
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.47	J	0.41	J
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		0.34	J	1	U	1	U	1	U	1	U	0.6	J	0.62	J	1	U	1	U
Chloromethane		0.36	J	1	U	0.38	J	1	U	1	U	1	U	1	U	1	U	1	U

DATA SUMMARY OF ANALYTICAL RESULTS
SEPTEMBER/OCTOBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells						CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW-22D**		**HAV-LTR-CW-22S**		**HAV-LTR-MW-01**		**HAV-LTR-MW-02**		**HAV-LTR-CTR**		**HAV-LTR-DUP-01**	
Sample Date:	**Goal**	**10/1/2014**		**10/1/2014**		**10/1/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**		**9/30/2014**	
Duplicate of:	**Objective**																	**HAV-LTR-CTR**	
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	0 54	J	0.43	J
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	0.89	J	0.66	J	1	U	1	U	0 55	J	0.46	J
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene	10000	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene	10000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0 82	J	0.47	J
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	0.5	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.69	J	0 57	J
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
DIOXIN/FURAN																**pg/L**		**pg/L**	
Total TEQ	30	NA		NA		NA		NA		NA		NA		NA		9 59		7 94	

DATA SUMMARY OF ANALYTICAL RESULTS
SEPTEMBER/OCTOBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells						QC Blanks			
Sample ID:	**Remedial**	**HAV-LTR-RW-5**		**HAV-LTR-RW-6**		**HAV-LTR-RW-7**		**HAV-LTR-FB-01**		**HAV-LTR-TB-01**	
Sample Date:	**Goal**	**9/30/2014**		**9/30/2014**		**10/1/2014**		**10/1/2014**		**9/30/2014**	
Duplicate of:	**Objective**										
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**			
2,3,4,6-Tetrachlorophenol		170		12		121		7 5	U	NA	
2,4,5-Trichlorophenol		2.1	J	1.6	J	18.8		7 5	U	NA	
2,4,6-Trichlorophenol		6.7	J	0.47	J	2	J	7 5	U	NA	
2,4-Dichlorophenol		7.6	U	7.9	U	7.7	U	7 5	U	NA	
2-Chloronaphthalene		2.9	U	3	U	2 9	U	2 8	U	NA	
2-Methyl-4,6-dinitrophenol	1.7	22.7		7.9	U	7.7	U	7 5	U	NA	
2-Methylnaphthalene	2	12		1.5	U	23.2		1.4	U	NA	
4-Chloroaniline		2.9	U	3	U	2 9	U	2 8	U	NA	
Acenaphthene		5.8		1.5	U	2 9		1.4	U	NA	
Acenaphthylene		1.4	U	1.5	U	0.65	J	1.4	U	NA	
Acetophenone		7.6	U	7.9	U	7.7	U	7 5	U	NA	
Anthracene		1.4	J	1.5	U	0.66	J	1.4	U	NA	
Benzo(a)pyrene	0.2	1.4	U	1.5	U	1.4	U	1.4	U	NA	
Biphenyl		14.9		7.9	U	6 3	J	7 5	U	NA	
Bis(2-ethylhexyl)phthalate	6	2.9	U	3	U	2 9	U	2 8	U	NA	
Butylbenzylphthalate		2.9	U	3	U	2 9	U	2.8	U	NA	
Carbazole		2.9	U	3	U	2.9	U	2.8	U	NA	
Dibenzofuran	4	4.1		0.43	J	3.1		2.8	U	NA	
Diethylphthalate		7.6	U	7.9	U	7.7	U	7.5	U	NA	
Fluorene		9.9		0.61	J	9.3		1.4	U	NA	
Mp-cresol		7.6	U	7.9	U	7.7	U	7.5	U	NA	
Naphthalene	3	126		1.5	U	123		1.4	U	NA	
Pentachlorophenol	1	2350		279		2680		15	U	NA	
Phenanthrene	41	11.8		1.5	U	7.8		1.4	U	NA	
Pyrene		0.43	J	1.5	U	1.4	U	1.4	U	NA	
SIM SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**			
Pentachlorophenol	1	282		153		349		0.93	U	NA	
Phenanthrene	41	7.3		0.018	J	6.4		0.093	U	NA	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2-Dichloroethene (cis)		10.4		1.2		4.9		1	U	1	U
2-Butanone		10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U
Acetone		4.7	J	7	J	10	U	10	U	8.2	J
Benzene	5	6.8		0.34	J	0.95	J	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	0.41	J	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U
Chloroform		36.5		1	U	30.4		1	U	1	U
Chloromethane		1	U	0.38	J	1	U	1	U	1	U

DATA SUMMARY OF ANALYTICAL RESULTS
SEPTEMBER/OCTOBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells						QC Blanks			
Sample ID:	**Remedial**	**HAV-LTR-RW-5**		**HAV-LTR-RW-6**		**HAV-LTR-RW-7**		**HAV-LTR-FB-01**		**HAV-LTR-TB-01**	
Sample Date:	**Goal**	**9/30/2014**		**9/30/2014**		**10/1/2014**		**10/1/2014**		**9/30/2014**	
Duplicate of:	**Objective**										
Cyclohexane		1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	11.2		1	U	2 8		1	U	1	U
Isopropylbenzene		4.2		1	U	3.7		1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1.4		1	U	1	U	1	U	1	U
Methyl T-butyl Ether		0.77	J	1.5		1		1	U	1	U
Methylene Chloride		1		1	U	3 3		1	U	1	U
Mp-xylene	10000	8.6		2	U	2.6		2	U	2	U
O-xylene	10000	22.9		1	U	16.2		1	U	1	U
Styrene		1	U	1	U	1	U	1	U	1	U
Toluene	1000	3.3		1	U	1	J	1	U	1	U
Trichloroethene	5	9		0.61	J	3 2		1	U	1	U
Vinyl Chloride	5	0.58	J	1	U	1	U	1	U	1	U
DIOXIN/FURAN		**pg/L**						**pg/L**			
Total TEQ	30	0.162		NA		NA		0.041		NA	

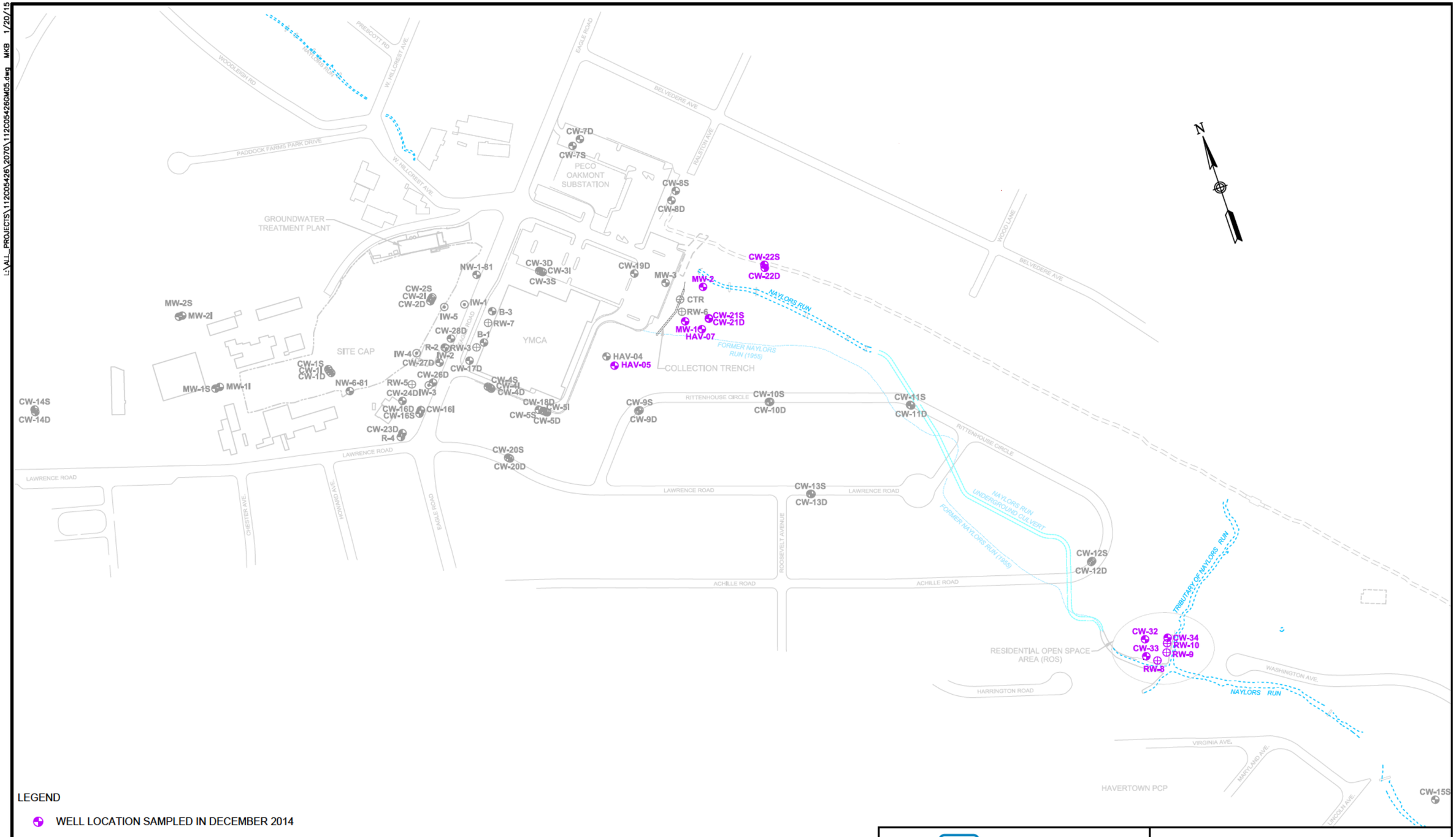
DATA SUMMARY OF ANALYTICAL RESULTS
SEPTEMBER/OCTOBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.
Shaded cells indicate the value exceeds the Remedial Goal Objective.

Database source file: H:\HAVERTOWN\DATA SUMMARIES\092014 - QUARTERLY\HAV092014.DBF data retrieved on: 11/10/14

A-2 DECEMBER 2014 GROUNDWATER DATA

L:\ALL_PROJECTS\112C05426\2070\112C05426GM05.dwg MKB 1/20/15



LEGEND

- WELL LOCATION SAMPLED IN DECEMBER 2014
- WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN DECEMBER 2014
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION

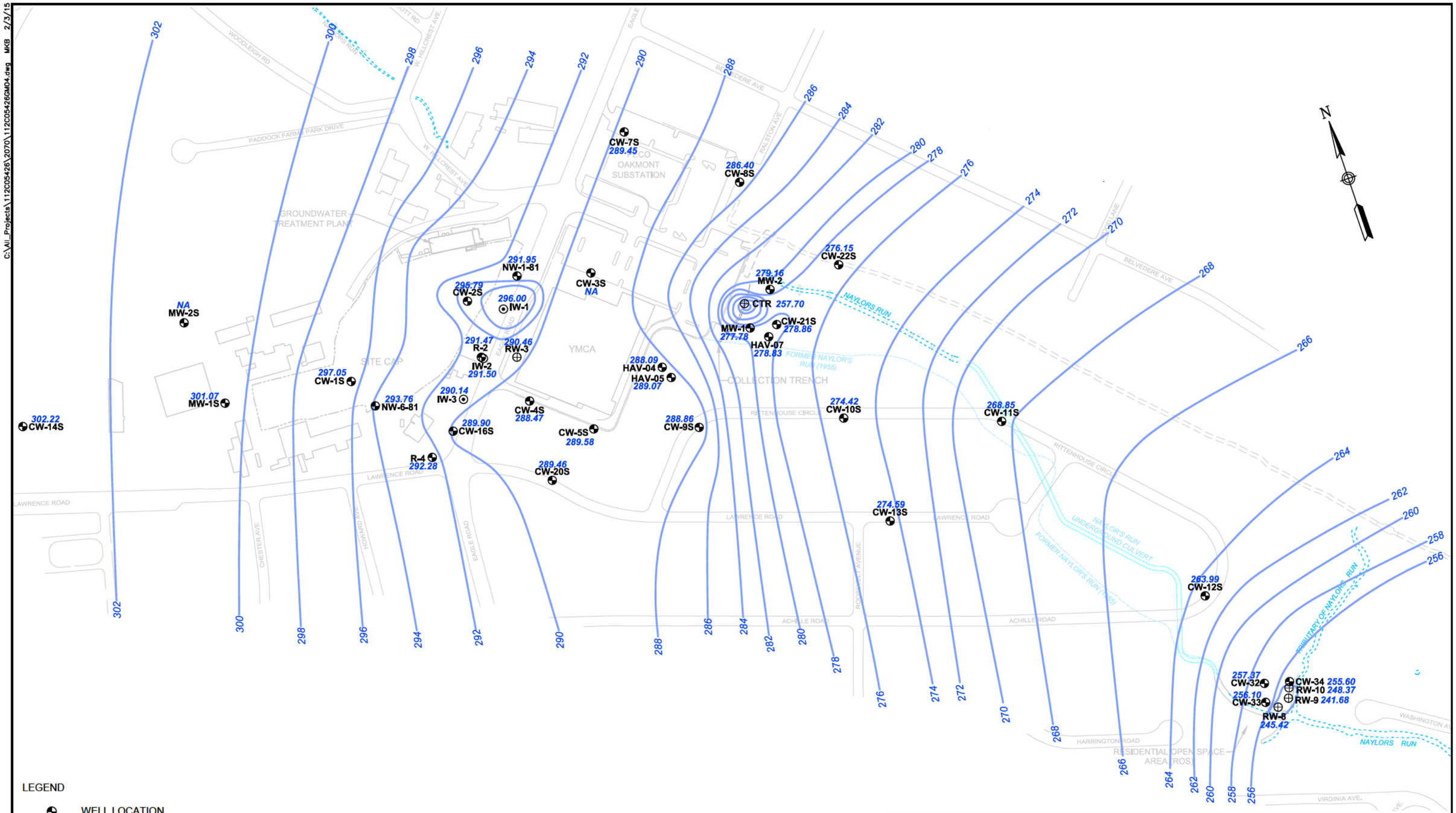
0 250 500
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM05.dwg	AS NOTED
FIGURE NUMBER 1	REV 0 / DATE 1/20/15

WELLS SAMPLED IN DECEMBER 2014
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

C:\All_Projects\112C05426\2070\112C05426GM04.dwg MKB 2/3/15



LEGEND

- WELL LOCATION
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION
- 274.42 GROUNDWATER ELEVATION (FEET, MSL)
- 280 GROUNDWATER CONTOUR

NOTES:
1. GROUNDWATER LEVEL MEASUREMENTS WERE COLLECTED ON DECEMBER 31, 2014.
2. COLLECTION TRENCH (CTR) AND RECOVERY WELLS (RW-5, RW-6, RW-7, RW-8, AND RW-10) WERE ON-LINE.
3. INJECTION WELLS (IW-4 AND IW-5) WERE OFF-LINE.

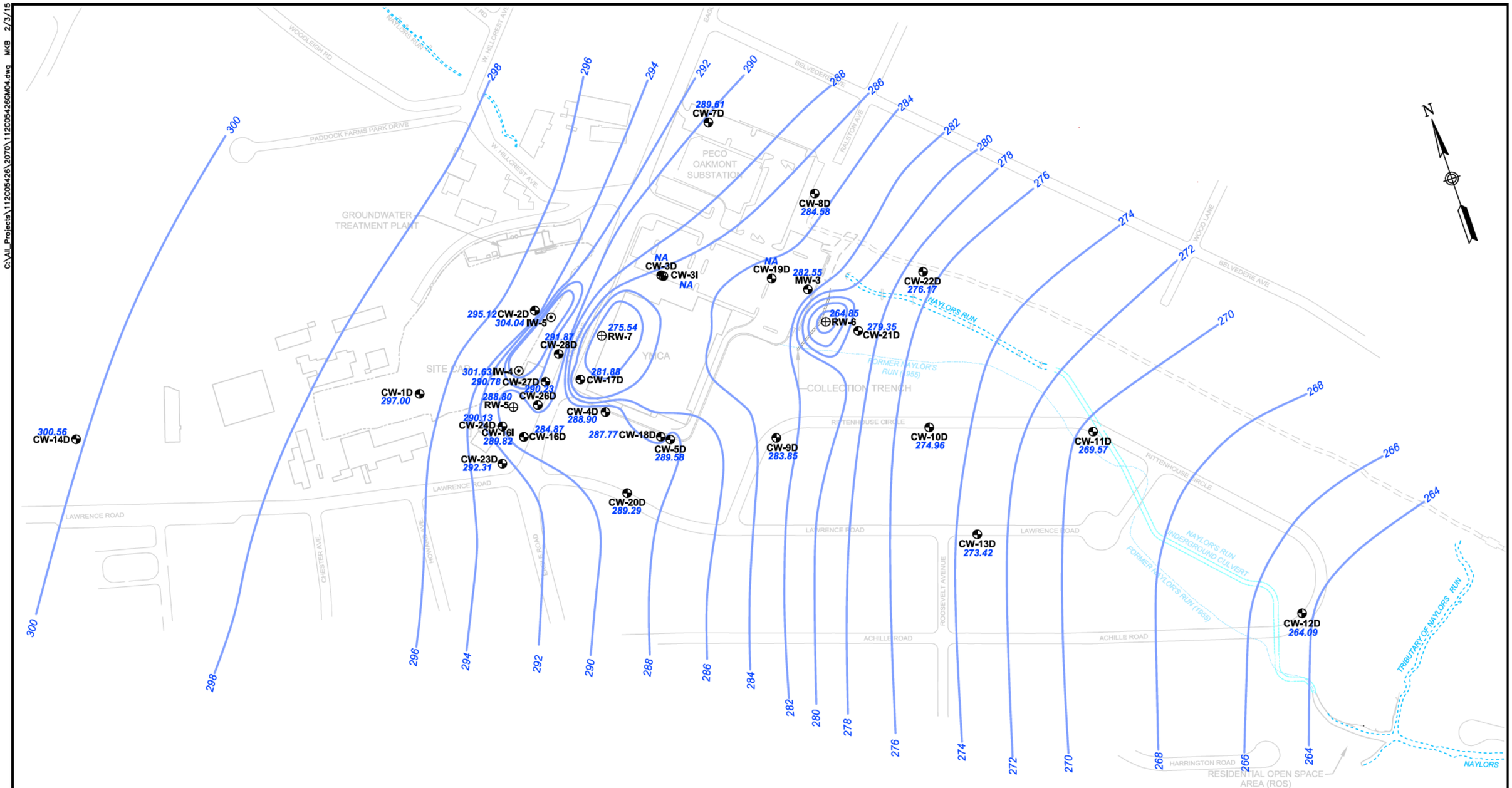
0 220 440
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM04.dwg	AS NOTED
FIGURE NUMBER 2	REV 0 / DATE 2/3/15

SHALLOW GROUNDWATER CONTOURS
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

C:\All_Projects\112C05426\2070\112C05426GM04.dwg MKB 2/3/15



LEGEND

- WELL LOCATION
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION
- 267.82 GROUNDWATER ELEVATION (FEET, MSL)
- 260 GROUNDWATER CONTOUR

NOTES:
1. GROUNDWATER LEVEL MEASUREMENTS WERE COLLECTED ON DECEMBER 31, 2014.
2. COLLECTION TRENCH (CTR) AND RECOVERY WELLS (RW-5, RW-6, RW-7, RW-8, AND RW-10) WERE ON-LINE.
3. INJECTION WELLS (IW-4 AND IW-5) WERE ON-LINE.

0 220 440
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM04.dwg	AS NOTED
FIGURE NUMBER 3	REV 0 / DATE 2/3/15

DEEP GROUNDWATER CONTOURS
HAVERTOWN PCP SUPERFUND SITE
DELAWARE COUNTY
HAVERTOWN, PENNSYLVANIA

DATA SUMMARY OF ANALYTICAL RESULTS
DECEMBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells						CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-RW8**		**HAV-LTR-RW9**		**HAV-LTR-RW10**		**HAV-LTR-CW21D**		**HAV-LTR-CW21S**		**HAV-LTR-CW22D**		**HAV-LTR-DUP01**		**HAV-LTR-CW22S**	
Sample Date:	**Goal**	**12/30/2014**		**12/30/2014**		**12/30/2014**		**12/29/2014**		**12/29/2014**		**12/29/2014**		**12/29/2014**		**12/29/2014**	
Duplicate of:	**Objective**													**HAV-LTR-CW22D**			
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2,3,4,6-Tetrachlorophenol		7.5	U	8.1	U	7.7	U	28.6		31.1		7.6	U	7.5	U	7.8	U
2,4,5-Trichlorophenol		7.5	U	8.1	U	7.7	U	20.5		18		7.6	U	7.5	U	7.8	U
2,4,6-Trichlorophenol		7.5	U	8.1	U	7.7	U	1.4	J	1.6	J	7.6	U	7.5	U	7.8	U
2,4-Dichlorophenol		7.5	U	8.1	U	7.7	U	9.1	U	8.3	U	7.6	U	7.5	U	7.8	U
2-Chloronaphthalene		2.8	U	3	U	2.9	U	7.5		3.5		2.8	U	2.8	U	2.9	U
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	8.1	U	7.7	U	9.1	U	8.3	U	7.6	U	7.5	U	7.8	U
2-Methylnaphthalene	2	1.4	U	1 5	U	1.4	U	1.7	U	1.6	U	1.4	U	1.4	U	1.5	U
Acenaphthene		1.4	U	1 5	U	1.4	U	0.46	J	1.6	U	1.4	U	1.4	U	1.5	U
Anthracene		1.4	U	1 5	U	1.4	U	1.7	U	1.6	U	1.4	U	1.4	U	1.5	U
Benzo(a)pyrene	0.2	1.4	U	1 5	U	1.4	U	1.7	U	1.6	U	1.4	U	1.4	U	1.5	U
Biphenyl		7.5	U	8.1	U	7.7	U	2.5	J	2.4	J	7.6	U	7.5	U	7.8	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	3	U	2.9	U	3.4	U	3.1	U	2.8	U	2.8	U	2.9	U
Dibenzofuran	4	2.8	U	3	U	2.9	U	1	J	1.1	J	2.8	U	2.8	U	2.9	U
Diethylphthalate		7.5	U	8.1	U	7.7	U	9.1	U	8.3	U	0.47	J	7.5	U	7.8	U
Fluoranthene		1.4	U	1 5	U	1.4	U	1.7	U	1.6	U	1.4	U	1.4	U	1.5	U
Fluorene		1.4	U	1 5	U	1.4	U	3		3.1		1.4	U	1.4	U	1.5	U
Naphthalene	3	1.4	U	1 5	U	1.4	U	1	J	1.6	U	1.4	U	1.4	U	1.5	U
Pentachlorophenol	1	15.1	U	16 2	U	2.4	J	864		883		15.2	U	15.1	U	15.6	U
Phenanthrene	41	1.4	U	1 5	U	1.4	U	0.46	J	1.6	U	1.4	U	1.4	U	1.5	U
Phenol		7.5	U	8.1	U	7.7	U	9.1	U	8.3	U	7.6	U	7.5	U	7.8	U
Pyrene		1.4	U	1 5	U	1.4	U	1.7	U	1.6	U	1.4	U	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2-Dichloroethene (cis)		1	U	1	U	1	U	2.3		2.7		0.41	J	1	U	1	U
Acetone		10	U	10	U	7.6	J	10	U	10	U	10	U	10	U	10	U
Benzene	5	1	U	1	U	1	U	2.2		2.1		1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1	U	1	U	1	U	1	U	1	U	1	U	0.44	J	1	U
Chloromethane		0.32	J	0.49	J	0.48	J	0.37	J	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	0.61	J	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	2.2		1.9		1	U	1	U	1	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	0.93	J	2.6		0 82	J	1	U	0.6	J
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene	10000	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene	10000	1	U	1	U	1	U	2.4		1	U	1	U	1	U	1	U
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1.3		1 2		1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

DATA SUMMARY OF ANALYTICAL RESULTS
DECEMBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		CTR Wells												Other Wells			
Sample ID:	**Remedial**	**HAV-LTR-MW1**		**HAV-LTR-MW2**		**HAV-LTR-CW32**		**HAV-LTR-CW33**		**HAV-LTR-CW34**		**HAV-LTR-HAV05**		**HAV-LTR-HAV07**	
Sample Date:	**Goal**	**12/29/2014**		**12/29/2014**		**12/30/2014**		**12/30/2014**		**12/30/2014**		**12/30/2014**		**12/29/2014**	
Duplicate of:	**Objective**														
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2,3,4,6-Tetrachlorophenol		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	241		7 5	U
2,4,5-Trichlorophenol		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	12.7		7 5	U
2,4,6-Trichlorophenol		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	4.4	J	7 5	U
2,4-Dichlorophenol		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	0.93	J	7 5	U
2-Chloronaphthalene		3	U	2.8	U	3.2	U	3 3	U	3	U	2.9	U	2 8	U
2-Methyl-4,6-dinitrophenol	1.7	8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	7.7	U	7 5	U
2-Methylnaphthalene	2	1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	42.4		1.4	U
Acenaphthene		1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	5.6		1.4	U
Anthracene		1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	1.3	J	1.4	U
Benzo(a)pyrene	0.2	1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	1.4	U	1.4	U
Biphenyl		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	8.4		7 5	U
Bis(2-ethylhexyl)phthalate	6	3	U	2.8	U	3.2	U	3 3	U	3	U	2.9	U	2 8	U
Dibenzofuran	4	3	U	2.8	U	3.2	U	3 3	U	3	U	3.7		2 8	U
Diethylphthalate		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	7.7	U	7 5	U
Fluoranthene		1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	0.33	J	1.4	U
Fluorene		1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	8.5		1.4	U
Naphthalene	3	1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	280		1.4	U
Pentachlorophenol	1	16.2	U	15.1	U	16.8	U	17 8	U	16.2	U	3920		15.1	U
Phenanthrene	41	1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	8.6		1.4	U
Phenol		8.1	U	7.5	U	8.4	U	8 9	U	8.1	U	0.26	J	7 5	U
Pyrene		1.5	U	1.4	U	1.6	U	1.7	U	1.5	U	0.51	J	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	0.57	J	1	U
Acetone		10	U	10	U	10	U	10	U	10	U	8.1	J	10	U
Benzene	5	1	U	1	U	1	U	1	U	1	U	6.9		1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	0.3	J	1	U
Chloroform		0.45	J	1	U	1	U	1	U	1	U	9.7		0.53	J
Chloromethane		1	U	1	U	0.32	J	0.37	J	0.34	J	0.93	J	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	15.2		1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	7.2		1	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1.4		1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	0.51	J	1	U
Mp-xylene	10000	2	U	2	U	2	U	2	U	2	U	9.3		2	U
O-xylene	10000	1	U	1	U	1	U	1	U	1	U	61.8		1	U
Styrene		1	U	1	U	1	U	1	U	1	U	0.53	J	1	U
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1.5		1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	4		1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U

DATA SUMMARY OF ANALYTICAL RESULTS
DECEMBER 2014 QUARTERLY GROUNDWATER SAMPLING
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

U -- Value is a non-detected result as reported by the laboratory.

NA -- No result is available/applicable for this parameter in this sample.

Database source file: H:\HAVERTOWN\DATA SUMMARIES\012015\HAV1214.DBF data retrieved on: 02/02/15

A-3 APRIL/MAY 2015 GROUNDWATER DATA

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CTR		HAV-LTR-CW-1S		HAV-LTR-CW-1D		HAV-LTR-CW-2I		HAV-LTR-CW-2D		HAV-LTR-DUP02		HAV-LTR-CW-3D		HAV-LTR-CW-3S	
Sample Date:	**Goals for**	**4/27/2015**		**4/22/2015**		**4/22/2015**		**4/23/2015**		**4/23/2015**		**4/23/2015**		**4/29/2015**		**4/29/2015**	
Duplicate of:	**Groundwater**											**HAV-LTR-CW-2D**					
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	43	J	89	U	89	U	89	U	32	J	220	
Antimony		NA		NA		NA		NA		NA		NA		NA		NA	
Arsenic	10	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		NA	
Beryllium		NA		NA		NA		NA		NA		NA		NA		NA	
Cadmium		NA		NA		NA		NA		NA		NA		NA		NA	
Calcium		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium		NA		NA		NA		NA		NA		NA		NA		NA	
Cobalt		0.019		100		40		5.6	U	58		66		30		2.3	J
Copper		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	300	5400		14800		64100		110		170		170		1500		2300	
Lead		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	1.7	J
Magnesium		NA		NA		NA		NA		NA		NA		NA		NA	
Manganese	50	5100		5400		6100		330		3000		3400		5100		1100	
Mercury		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel		NA		NA		NA		NA		NA		NA		NA		NA	
Potassium		NA		NA		NA		NA		NA		NA		NA		NA	
Selenium		NA		NA		NA		NA		NA		NA		NA		NA	
Silver		NA		NA		NA		NA		NA		NA		NA		NA	
Sodium		NA		NA		NA		NA		NA		NA		NA		NA	
Thallium		NA		NA		NA		NA		NA		NA		NA		NA	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		NA	
Zinc		NA		NA		NA		NA		NA		NA		NA		NA	
DIOXIN/FURAN		**pg/L**															
Toxicity Equivalent Quotient (TEQ)	30	5.65		NA		NA		NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
1,4-Dioxane		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
2,3,4,6-Tetrachlorophenol		16.2		5.5	J	20.5		6.6	J	124		126		5.4	J	7.7	U
2,4,5-Trichlorophenol		1.2	J	0.62	J	0 95	J	7.8	U	0.49	J	0.57	J	0.97	J	7.7	U
2,4,6-Trichlorophenol		0.68	J	0.56	J	12.3		7.8	U	7.6	U	7.7	U	0.65	J	7.7	U
2,4-Dichlorophenol		7.5	U	7.6	U	3.7	J	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2,4-Dimethylphenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2,4-Dinitrophenol		15.1	U	15.2	U	15.5	U	15.7	U	15.2	U	15.4	U	14 9	U	15.5	U
2,4-Dinitrotoluene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
2,6-Dinitrotoluene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
2-Chloronaphthalene		0 35	J	2.8	U	2.9	U	2.9	U	2.3	J	2.6	J	2.8	U	2.9	U
2-Chlorophenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
2-Methylphenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
2-Nitroaniline		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
2-Nitrophenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
3,3-Dichlorobenzidine		15.1	U	15.2	U	15.5	U	15.7	U	15.2	U	15.4	U	14 9	U	15.5	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CTR		HAV-LTR-CW-1S		HAV-LTR-CW-1D		HAV-LTR-CW-2I		HAV-LTR-CW-2D		HAV-LTR-DUP02		HAV-LTR-CW-3D		HAV-LTR-CW-3S	
Sample Date:	**Goals for**	**4/27/2015**		**4/22/2015**		**4/22/2015**		**4/23/2015**		**4/23/2015**		**4/23/2015**		**4/29/2015**		**4/29/2015**	
Duplicate of:	**Groundwater**											**HAV-LTR-CW-2D**					
3-Nitroaniline		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
4-Bromophenyl Phenyl Ether		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
4-Chloro-3-methylphenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
4-Chloroaniline		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
4-Chlorophenyl Phenyl Ether		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
4-Nitroaniline		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
4-Nitrophenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Acenaphthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Acenaphthylene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Acetophenone		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Anthracene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Atrazine		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzaldehyde		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Biphenyl		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Bis(2-chloroethoxy)methane		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Bis(2-chloroethyl)ether		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Butylbenzylphthalate		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Caprolactam		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Carbazole		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Chrysene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Di-n-butylphthalate		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Di-n-octylphthalate		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Dibenzofuran	4	2.8	U	0.43	J	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Diethylphthalate		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Dimethylphthalate		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Fluorene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Hexachlorobenzene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Hexachlorobutadiene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Hexachlorocyclopentadiene		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
Hexachloroethane		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Isophorone		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Mp-cresol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U
N-Nitroso-di-n-propylamine		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
N-Nitrosodiphenylamine		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Nitrobenzene		2.8	U	2.8	U	2.9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
Pentachlorophenol	1	255		97		7.3	J	327		2470		2880		209		15.5	U
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Phenol		7.5	U	7.6	U	7.7	U	7.8	U	7.6	U	7.7	U	7.4	U	7.7	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CTR		HAV-LTR-CW-1S		HAV-LTR-CW-1D		HAV-LTR-CW-2I		HAV-LTR-CW-2D		HAV-LTR-DUP02		HAV-LTR-CW-3D		HAV-LTR-CW-3S	
Sample Date:	**Goals for**	**4/27/2015**		**4/22/2015**		**4/22/2015**		**4/23/2015**		**4/23/2015**		**4/23/2015**		**4/29/2015**		**4/29/2015**	
Duplicate of:	**Groundwater**											**HAV-LTR-CW-2D**					
Pyrene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	0 92	J	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		0.6	J	1	U	48.1		1	U	4.2		4		1	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	0.8	J	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	3.3	J	10	U	10	U	3.1	J	10	U	10	U
Benzene	5	0 38	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	8.1		4.2		3.7		1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	0.55	J	0.62	J	0.59	J	0.45	J	1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	4.6		2.3		1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		0 57	J	1	U	1	U	193		65.6		58.4		2.3		1.5	
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	0.45	J	0.55	J	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		0.46	J	1	U	1	U	1	U	0.88	J	1.3		1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		0 53	J	4.2		0 54	J	1	U	2.7		2.3		1	U	1	U
Methylene Chloride		1	U	1	U	1	U	9.4		1	U	2.6		1	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	0.88	J	1.1	J	2	U	2	U
O-xylene		0.47	J	1	U	1	U	1	U	4.5		6		1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CTR		HAV-LTR-CW-1S		HAV-LTR-CW-1D		HAV-LTR-CW-2I		HAV-LTR-CW-2D		HAV-LTR-DUP02		HAV-LTR-CW-3D		HAV-LTR-CW-3S	
Sample Date:	**Goals for**	**4/27/2015**		**4/22/2015**		**4/22/2015**		**4/23/2015**		**4/23/2015**		**4/23/2015**		**4/29/2015**		**4/29/2015**	
Duplicate of:	**Groundwater**											**HAV-LTR-CW-2D**					
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	0.44	J	0.4	J	1	U	1	U
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	3.6		1	U	3.9		3.4		1	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	7.9		1	U	0.43	J	0.38	J	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-4D		HAV-LTR-DUP4		HAV-LTR-CW-4I		HAV-LTR-CW-4S		HAV-LTR-CW-5D		HAV-LTR-CW-5S		HAV-LTR-CW7D		HAV-LTR-CW7S	
Sample Date:	**Goals for**	**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**			**HAV-LTR-CW-4D**													
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	5900		89	U	140		89	U	39	J	89	U
Antimony		NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
Arsenic	10	6.6		6.8		32		3	U	4.2		4.1		3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		91		410	
Beryllium		NA		NA		NA		NA		NA		NA		1	U	1	U
Cadmium		NA		NA		NA		NA		NA		NA		1.1	U	0.4	J
Calcium		NA		NA		NA		NA		NA		NA		27200		41000	
Chromium		NA		NA		NA		NA		NA		NA		1.3	J	0.85	J
Cobalt		25		25		79		14		16		50		5.6	U	3.3	J
Copper		NA		NA		NA		NA		NA		NA		10		5.6	U
Iron	300	29900		30300		33000		56		12300		7200		410		56	U
Lead		2.2	U	2.2	U	5.1		2.2	U	1	J	2.2	U	1.2	J	2.2	U
Magnesium		NA		NA		NA		NA		NA		NA		8000		19000	
Manganese	50	11700		12400		11600		5100		2500		7600		18		260	
Mercury		NA		NA		NA		NA		NA		NA		0.5	U	0.5	U
Nickel		NA		NA		NA		NA		NA		NA		5.6	U	12	
Potassium		NA		NA		NA		NA		NA		NA		52900		4800	
Selenium		NA		NA		NA		NA		NA		NA		5.6	U	5.6	U
Silver		NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
Sodium		NA		NA		NA		NA		NA		NA		44000		61800	
Thallium		NA		NA		NA		NA		NA		NA		1	U	1	U
Vanadium	3.1	NA		NA		NA		NA		NA		NA		0 82	J	2.2	U
Zinc		NA		NA		NA		NA		NA		NA		0.026		0.0084	
DIOXIN/FURAN																	
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
1,4-Dioxane		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2,2'-Oxybis(1-chloropropane)		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2,3,4,6-Tetrachlorophenol		87.1		98.3		104		26.8		4	J	23.1		7.9	U	7.4	U
2,4,5-Trichlorophenol		4.1	J	5.2	J	6.4	J	0.78	J	0.31	J	1.5	J	7.9	U	7.4	U
2,4,6-Trichlorophenol		18.7		21.8		12.7		0.9	J	3.9	J	8		7.9	U	7.4	U
2,4-Dichlorophenol		3.6	J	4	J	2.1	J	7.5	U	1.2	J	1.6	J	7.9	U	7.4	U
2,4-Dimethylphenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
2,4-Dinitrophenol		15.2	U	15	U	15 3	U	15.1	U	15 2	U	15.2	U	15.8	U	14.9	U
2,4-Dinitrotoluene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2,6-Dinitrotoluene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2-Chloronaphthalene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2-Chlorophenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
2-Methylphenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
2-Nitroaniline		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
2-Nitrophenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
3,3-Dichlorobenzidine		15.2	U	15	U	15 3	U	15.1	U	15 2	U	15.2	U	15.8	U	14.9	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-4D		HAV-LTR-DUP4		HAV-LTR-CW-4I		HAV-LTR-CW-4S		HAV-LTR-CW-5D		HAV-LTR-CW-5S		HAV-LTR-CW7D		HAV-LTR-CW7S	
Sample Date:	**Goals for**	**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**			**HAV-LTR-CW-4D**													
3-Nitroaniline		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
4-Bromophenyl Phenyl Ether		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
4-Chloro-3-methylphenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
4-Chloroaniline		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
4-Chlorophenyl Phenyl Ether		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
4-Nitroaniline		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
4-Nitrophenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Acenaphthene		2		2.6		0.97	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acenaphthylene		0.49	J	0.64	J	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acetophenone		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Anthracene		0.48	J	0.6	J	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Atrazine		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzaldehyde		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Biphenyl		6.8	J	8.7		1.8	J	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Bis(2-chloroethoxy)methane		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Bis(2-chloroethyl)ether		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	0.46	J	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Butylbenzylphthalate		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Caprolactam		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Carbazole		2.8	U	0.38	J	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Chrysene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Di-n-butylphthalate		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Di-n-octylphthalate		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Dibenzofuran	4	1.9	J	2.2	J	0.75	J	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Diethylphthalate		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Dimethylphthalate		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Fluoranthene		1.4	U	1.4	U	0.3	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Fluorene		4.1		5.1		1.5		1.4	U	1.4	U	0.37	J	1.5	U	1.4	U
Hexachlorobenzene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Hexachlorobutadiene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Hexachlorocyclopentadiene		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
Hexachloroethane		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Isophorone		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Mp-cresol		7.6	U	7.5	U	0.69	J	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U
N-Nitroso-di-n-propylamine		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
N-Nitrosodiphenylamine		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Naphthalene	3	3.9		2.8		1.5		4.2		1.4	U	1.4	U	1.5	U	1.4	U
Nitrobenzene		2.8	U	2.8	U	2.9	U	2.8	U	2.9	U	2.8	U	3	U	2.8	U
Pentachlorophenol	1	1330		1190		1660		528		6	J	108		15.8	U	14.9	U
Phenanthrene	41	2.1		2.8		0.83	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Phenol		7.6	U	7.5	U	7.7	U	7.5	U	7.6	U	7.6	U	7.9	U	7.4	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-4D		HAV-LTR-DUP4		HAV-LTR-CW-4I		HAV-LTR-CW-4S		HAV-LTR-CW-5D		HAV-LTR-CW-5S		HAV-LTR-CW7D		HAV-LTR-CW7S	
Sample Date:	**Goals for**	**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**			**HAV-LTR-CW-4D**													
Pyrene		1.4	U	1.4	U	0.49	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		0.76	J	0.73	J	0.9	J	1	U	1	U	1	U	0 33	J	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	7.2	J	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	5	8.9		8.8		9.8		1.5		2.3		1.2		1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1.6		1.7		2.8		6.1		1	U	1	U	1	U	1	U
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		2.7		2.7		1.1		1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	111		109		45 3		1	U	1	U	1	U	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		17.3		17.2		11 2		0.25	J	0.31	J	0.74	J	1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		3.5		3.5		0.85	J	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	1	U	9.9	
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene		78.9		77.6		26 3		2	U	2	U	2	U	2	U	2	U
O-xylene		90.3		89.5		41.6		1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-4D		HAV-LTR-DUP4		HAV-LTR-CW-4I		HAV-LTR-CW-4S		HAV-LTR-CW-5D		HAV-LTR-CW-5S		HAV-LTR-CW7D		HAV-LTR-CW7S	
Sample Date:	**Goals for**	**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**4/28/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**			**HAV-LTR-CW-4D**													
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	2		2.1		1.3		1	U	0.44	J	1	U	1	U	1	U
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1.4		1.3		1.7		0.68	J	1	U	1	U	1	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-8D		HAV-LTR-CW-8S		HAV-LTR-CW-9D		HAV-LTR-CW-10D		HAV-LTR-CW-11D		HAV-LTR-CW-12D		HAV-LTR-DUP-1		HAV-LTR-CW-12S	
Sample Date:	**Goals for**	**4/24/2015**		**4/24/2015**		**4/22/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-CW-12D**			
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	200	34	J	650		0.7		89	U	65	J	70	J	100		130	
Antimony		NA		NA		NA		NA		NA		NA		NA		NA	
Arsenic	10	3	U	3	U	0.0017	J	3	U	3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		NA	
Beryllium		NA		NA		NA		NA		NA		NA		NA		NA	
Cadmium		NA		NA		NA		NA		NA		NA		NA		NA	
Calcium		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium		NA		NA		NA		NA		NA		NA		NA		NA	
Cobalt		5.6	U	5.6	U	0.0056	U	2.5	J	5.6	U	5.6	U	5.6	U	5.6	U
Copper		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	300	83		800		1.2		56	U	520		970		940		74	
Lead		2.2	U	2.1	J	0.0081		2.2	U	2.2	U	2.2	U	2.2	U	1.5	J
Magnesium		NA		NA		NA		NA		NA		NA		NA		NA	
Manganese	50	38		100		0.02		100		34		52		55		11	
Mercury		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel		NA		NA		NA		NA		NA		NA		NA		NA	
Potassium		NA		NA		NA		NA		NA		NA		NA		NA	
Selenium		NA		NA		NA		NA		NA		NA		NA		NA	
Silver		NA		NA		NA		NA		NA		NA		NA		NA	
Sodium		NA		NA		NA		NA		NA		NA		NA		NA	
Thallium		NA		NA		NA		NA		NA		NA		NA		NA	
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		NA	
Zinc		NA		NA		NA		NA		NA		NA		NA		NA	
DIOXIN/FURAN								**pg/L**									
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		0.0786		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
1,4-Dioxane		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2,3,4,6-Tetrachlorophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2,4,5-Trichlorophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2,4,6-Trichlorophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2,4-Dichlorophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2,4-Dimethylphenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2,4-Dinitrophenol		15.4	U	15 5	U	15	U	15.2	U	16.3	U	16.8	U	15.1	U	15.5	U
2,4-Dinitrotoluene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2,6-Dinitrotoluene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2-Chloronaphthalene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2-Chlorophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2-Methyl-4,6-dinitrophenol	1.7	7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
2-Methylphenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
2-Nitroaniline		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
2-Nitrophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
3,3-Dichlorobenzidine		15.4	U	15 5	U	15	U	15.2	U	16.3	U	16.8	U	15.1	U	15.5	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-8D		HAV-LTR-CW-8S		HAV-LTR-CW-9D		HAV-LTR-CW-10D		HAV-LTR-CW-11D		HAV-LTR-CW-12D		HAV-LTR-DUP-1		HAV-LTR-CW-12S	
Sample Date:	Goals for	4/24/2015		4/24/2015		4/22/2015		4/21/2015		4/21/2015		4/21/2015		4/21/2015		4/21/2015	
Duplicate of:	Groundwater													HAV-LTR-CW-12D			
3-Nitroaniline		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
4-Bromophenyl Phenyl Ether		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
4-Chloro-3-methylphenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
4-Chloroaniline		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
4-Chlorophenyl Phenyl Ether		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
4-Nitroaniline		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
4-Nitrophenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Acenaphthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Acenaphthylene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Acetophenone		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Atrazine		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Benzaldehyde		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Biphenyl		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Bis(2-chloroethoxy)methane		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Bis(2-chloroethyl)ether		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	0 85	J
Butylbenzylphthalate		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	1.1	J
Caprolactam		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Carbazole		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Chrysene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Di-n-butylphthalate		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Di-n-octylphthalate		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Dibenzofuran	4	2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Diethylphthalate		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Dimethylphthalate		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Fluorene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Hexachlorobenzene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Hexachlorobutadiene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Hexachlorocyclopentadiene		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
Hexachloroethane		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Isophorone		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Mp-cresol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U
N-Nitroso-di-n-propylamine		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
N-Nitrosodiphenylamine		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Nitrobenzene		2.9	U	2 9	U	2.8	U	2.9	U	3.1	U	3.2	U	2.8	U	2.9	U
Pentachlorophenol	1	15.4	U	15 5	U	15	U	15.2	U	16.3	U	16.8	U	15.1	U	15.5	U
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
Phenol		7.7	U	7.7	U	7.5	U	7.6	U	8.2	U	8.4	U	7.5	U	7.7	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-8D		HAV-LTR-CW-8S		HAV-LTR-CW-9D		HAV-LTR-CW-10D		HAV-LTR-CW-11D		HAV-LTR-CW-12D		HAV-LTR-DUP-1		HAV-LTR-CW-12S	
Sample Date:	**Goals for**	**4/24/2015**		**4/24/2015**		**4/22/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-CW-12D**			
Pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.6	U	1.4	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0 2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	6.6		0 87	J	0.74	J	0.68	J	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	4.7	J	10	U	10	U	10	U	10	U	10	U
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	0.53	J	1	U	1	U	0.41	J	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		0.28	J	1	U	1	U	0.4	J	1	U	1	U	1	U	2.2	
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		0.71	J	0.49	J	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-8D		HAV-LTR-CW-8S		HAV-LTR-CW-9D		HAV-LTR-CW-10D		HAV-LTR-CW-11D		HAV-LTR-CW-12D		HAV-LTR-DUP-1		HAV-LTR-CW-12S	
Sample Date:	**Goals for**	**4/24/2015**		**4/24/2015**		**4/22/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**		**4/21/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-CW-12D**			
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	2.9		0.79	J	1	U	1	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-13D		HAV-LTR-CW-13S		HAV-LTR-CW16D		HAV-LTR-CW16S		HAV-LTR-CW17D		HAV-LTR-CW-18D		HAV-LTR-CW19D		HAV-LTR-CW-20D	
Sample Date:	**Goals for**	**4/21/2015**		**4/21/2015**		**5/4/2015**		**5/5/2015**		**5/5/2015**		**4/28/2015**		**5/4/2015**		**4/24/2015**	
Duplicate of:	**Groundwater**																
INORGANICS		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	200		44	J	110		73	J	89	U	89	U	89	U	89	U
Antimony		NA		NA		2.2	U	2.2	U	2 2	U	NA		2.2	U	NA	
Arsenic	10	3	U	3	U	1.6	J	3	U	1.4	J	1 9	J	3	U	3	U
Barium	2000	NA		NA		160		16		61		NA		57		NA	
Beryllium		NA		NA		1	U	1	U	1	U	NA		0.43	J	NA	
Cadmium		NA		NA		0.46	J	1.1	U	1.1	U	NA		0.49	J	NA	
Calcium		NA		NA		27700		7400		45600		NA		53900		NA	
Chromium		NA		NA		10		0.87	J	0.98	J	NA		0 95	J	NA	
Cobalt		5.6	U	5.6	U	3.4	J	5.6	U	47		4 5	J	5.6	U	5.6	U
Copper		NA		NA		2.7	J	3	J	5.6	U	NA		5.6	U	NA	
Iron	300	250		36	J	7200		9000		1200		18200		18500		28	J
Lead		2 2	U	2.2	U	2.2	U	1.9	J	2.2	U	2 2	U	2.2	U	2.2	U
Magnesium		NA		NA		10100		1600		19300		NA		16300		NA	
Manganese	50	87		24		630		140		4700		2200		1700		5.3	J
Mercury		NA		NA		0.5	U	0.5	U	0 5	U	NA		0.5	U	NA	
Nickel		NA		NA		13		5.6	U	37		NA		5.6	U	NA	
Potassium		NA		NA		4700		1600		9100		NA		9900		NA	
Selenium		NA		NA		5.6	U	5.6	U	5.6	U	NA		5.6	U	NA	
Silver		NA		NA		2.2	U	2.2	U	2 2	U	NA		2.2	U	NA	
Sodium		NA		NA		44500		116000		83800		NA		63300		NA	
Thallium		NA		NA		1	U	1	U	1	U	NA		1	U	NA	
Vanadium	3.1	NA		NA		2.2	U	0.76	J	2 2	U	NA		2.2	U	NA	
Zinc		NA		NA		0.083		0 012		0.0082		NA		0.0036	J	NA	
DIOXIN/FURAN								**pg/L**									
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		3.1		NA		NA		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
1,4-Dioxane		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2,2'-Oxybis(1-chloropropane)		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2,3,4,6-Tetrachlorophenol		8	U	8.1	U	7.5	U	7.8	U	51.6		8 2		24.5		7.8	U
2,4,5-Trichlorophenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	0.76	J	5.4	J	7.8	U
2,4,6-Trichlorophenol		8	U	8.1	U	7.5	U	7.8	U	1	J	4 3	J	4.6	J	7.8	U
2,4-Dichlorophenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	0.81	J	0.49	J	7.8	U
2,4-Dimethylphenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
2,4-Dinitrophenol		16.1	U	16.2	U	15.1	U	15.5	U	14 9	U	15.4	U	15.2	U	15.5	U
2,4-Dinitrotoluene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2,6-Dinitrotoluene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2-Chloronaphthalene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2-Chlorophenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
2-Methyl-4,6-dinitrophenol	1.7	8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
2-Methylnaphthalene	2	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
2-Methylphenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
2-Nitroaniline		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
2-Nitrophenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
3,3-Dichlorobenzidine		16.1	U	16.2	U	15.1	U	15.5	U	14 9	U	15.4	U	15.2	U	15.5	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-13D		HAV-LTR-CW-13S		HAV-LTR-CW16D		HAV-LTR-CW16S		HAV-LTR-CW17D		HAV-LTR-CW-18D		HAV-LTR-CW19D		HAV-LTR-CW-20D	
Sample Date:	**Goals for**	**4/21/2015**		**4/21/2015**		**5/4/2015**		**5/5/2015**		**5/5/2015**		**4/28/2015**		**5/4/2015**		**4/24/2015**	
Duplicate of:	**Groundwater**																
3-Nitroaniline		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
4-Bromophenyl Phenyl Ether		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
4-Chloro-3-methylphenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
4-Chloroaniline		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
4-Chlorophenyl Phenyl Ether		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
4-Nitroaniline		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
4-Nitrophenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Acenaphthene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Acenaphthylene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Acetophenone		8	U	8.1	U	7.5	U	0.39	J	7.4	U	7.7	U	7.6	U	7.8	U
Anthracene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Atrazine		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Benz(a)anthracene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzaldehyde		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Benzo(a)pyrene	0.2	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(b)fluoranthene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(g,h,i)perylene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(k)fluoranthene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Biphenyl		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	1.5	J	7.8	U
Bis(2-chloroethoxy)methane		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Bis(2-chloroethyl)ether		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	3	U	3	U	0.79	J	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Butylbenzylphthalate		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Caprolactam		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Carbazole		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Chrysene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Di-n-butylphthalate		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Di-n-octylphthalate		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Dibenz(a,h)anthracene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Dibenzofuran	4	3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	0.9	J	2.9	U
Diethylphthalate		8	U	0.41	J	1.6	J	0.37	J	7.4	U	7.7	U	7.6	U	7.8	U
Dimethylphthalate		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Fluoranthene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Fluorene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	0.58	J	2.5		1.5	U
Hexachlorobenzene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Hexachlorobutadiene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Hexachlorocyclopentadiene		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U
Hexachloroethane		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Indeno(1,2,3-cd)pyrene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Isophorone		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Mp-cresol		8	U	8.1	U	7.5	U	0.45	J	7.4	U	7.7	U	7.6	U	7.8	U
N-Nitroso-di-n-propylamine		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
N-Nitrosodiphenylamine		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Naphthalene	3	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Nitrobenzene		3	U	3	U	2.8	U	2.9	U	2 8	U	2 9	U	2.8	U	2.9	U
Pentachlorophenol	1	16.1	U	16.2	U	3.7	J	8.4	J	1300		59 8		554		15.5	U
Phenanthrene	41	1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
Phenol		8	U	8.1	U	7.5	U	7.8	U	7.4	U	7.7	U	7.6	U	7.8	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-13D		HAV-LTR-CW-13S		HAV-LTR-CW16D		HAV-LTR-CW16S		HAV-LTR-CW17D		HAV-LTR-CW-18D		HAV-LTR-CW19D		HAV-LTR-CW-20D	
Sample Date:	**Goals for**	**4/21/2015**		**4/21/2015**		**5/4/2015**		**5/5/2015**		**5/5/2015**		**4/28/2015**		**5/4/2015**		**4/24/2015**	
Duplicate of:	**Groundwater**																
Pyrene		1 5	U	1.5	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0 2	U	0.2	U	0.2	U	0.2	U	0.2	U	0 2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		10.1		1	U	1	U	1	U	0.77	J	0.58	J	0 56	J	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	6	J	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	10	U	49.7		10	U	10	U	10	U	10	U
Benzene	5	1	U	1	U	1	U	0.78	J	1 3		0.52	J	1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1 3		0.21	J	1	U	1	U	3.8		1	U	1	U	2.3	
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1.2		1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1.1		0.28	J	0 35	J	1	U
Methyl Acetate		2	U	2	U	2	U	0.36	J	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	0 51	J	1	U
Methylene Chloride		1	U	1	U	1	U	1	U	3 5		1	U	1	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	**Remediation**	**HAV-LTR-CW-13D**		**HAV-LTR-CW-13S**		**HAV-LTR-CW16D**		**HAV-LTR-CW16S**		**HAV-LTR-CW17D**		**HAV-LTR-CW-18D**		**HAV-LTR-CW19D**		**HAV-LTR-CW-20D**	
Sample Date:	**Goals for**	**4/21/2015**		**4/21/2015**		**5/4/2015**		**5/5/2015**		**5/5/2015**		**4/28/2015**		**5/4/2015**		**4/24/2015**	
Duplicate of:	**Groundwater**																
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	2.8		0.59	J	1.2		1	U	1	U	1	U
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	3 8		1	U	1	U	1	U	1 8		1	U	0.61	J	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-20S		HAV-LTR-CW-21D		HAV-LTR-CW-21S		HAV-LTR-CW-22D		HAV-LTR-CW-22S		HAV-LTR-CW-23D		HAV-LTR-CW24D		HAV-LTR-CW26D	
Sample Date:	**Goals for**	**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/23/2015**		**4/23/2015**		**4/28/2015**		**5/4/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**																
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	37	J	89	U	89	U	88	J	130		74	J	89	U	89	U
Antimony		NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
Arsenic	10	3	U	3	U	3	U	3	U	3	U	3	U	7.6		3.2	
Barium	2000	NA		NA		NA		NA		NA		NA		220		11	
Beryllium		NA		NA		NA		NA		NA		NA		1	U	1	U
Cadmium		NA		NA		NA		NA		NA		NA		1.1	U	1.1	U
Calcium		NA		NA		NA		NA		NA		NA		40900		6400	
Chromium		NA		NA		NA		NA		NA		NA		2.2		1.5	J
Cobalt		20		5.6	U	5.6	U	5.6	U	5.6	U	5.6	U	9.8		5.6	U
Copper		NA		NA		NA		NA		NA		NA		5.6	U	2.3	J
Iron	300	23000		18000		20500		56	U	56	U	1500		33200		8500	
Lead		2 2	U	2 2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
Magnesium		NA		NA		NA		NA		NA		NA		25300		3900	
Manganese	50	4900		930		920		110		87		160		11300		320	
Mercury		NA		NA		NA		NA		NA		NA		0.5	U	0.5	U
Nickel		NA		NA		NA		NA		NA		NA		4.5	J	1.9	J
Potassium		NA		NA		NA		NA		NA		NA		8100		16900	
Selenium		NA		NA		NA		NA		NA		NA		5.6	U	5.6	U
Silver		NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
Sodium		NA		NA		NA		NA		NA		NA		54900		24900	
Thallium		NA		NA		NA		NA		NA		NA		1	U	1	U
Vanadium	3.1	NA		NA		NA		NA		NA		NA		2.2	U	2.2	U
Zinc		NA		NA		NA		NA		NA		NA		0 017		0.021	
DIOXIN/FURAN														**pg/L**			
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		NA		1.47		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
1,4-Dioxane		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2,3,4,6-Tetrachlorophenol		7 8	U	37		38.5		7.6	U	7.8	U	7.4	U	64.5		3.3	J
2,4,5-Trichlorophenol		7 8	U	20.1		18.4		7.6	U	7.8	U	7.4	U	7.5	U	5.8	J
2,4,6-Trichlorophenol		7 8	U	1.7	J	1.8	J	7.6	U	7.8	U	7.4	U	55.7		1.8	J
2,4-Dichlorophenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	1.1	J	2.7	J
2,4-Dimethylphenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
2,4-Dinitrophenol		15.7	U	15 2	U	15.4	U	15.2	U	15.5	U	14.8	U	15	U	15.6	U
2,4-Dinitrotoluene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2,6-Dinitrotoluene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2-Chloronaphthalene		2 9	U	8.1		3.5		2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2-Chlorophenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
2-Methyl-4,6-dinitrophenol	1.7	7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
2-Methylnaphthalene	2	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	57.2		1.5	U
2-Methylphenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
2-Nitroaniline		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
2-Nitrophenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
3,3-Dichlorobenzidine		15.7	U	15 2	U	15.4	U	15.2	U	15.5	U	14.8	U	15	U	15.6	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-20S		HAV-LTR-CW-21D		HAV-LTR-CW-21S		HAV-LTR-CW-22D		HAV-LTR-CW-22S		HAV-LTR-CW-23D		HAV-LTR-CW24D		HAV-LTR-CW26D	
Sample Date:	Goals for	4/24/2015		4/27/2015		4/27/2015		4/23/2015		4/23/2015		4/28/2015		5/4/2015		5/4/2015	
Duplicate of:	Groundwater																
3-Nitroaniline		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
4-Bromophenyl Phenyl Ether		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
4-Chloro-3-methylphenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
4-Chloroaniline		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
4-Chlorophenyl Phenyl Ether		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
4-Nitroaniline		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
4-Nitrophenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Acenaphthene		0.67	J	0.47	J	1.4	U	1.4	U	1.5	U	1.4	U	14.6		1.5	U
Acenaphthylene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Acetophenone		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Anthracene		0.54	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	2.8		1.5	U
Atrazine		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Benz(a)anthracene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Benzaldehyde		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Benzo(a)pyrene	0.2	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Benzo(b)fluoranthene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Benzo(g,h,i)perylene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Benzo(k)fluoranthene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Biphenyl		0.84	J	2 3	J	2.9	J	7.6	U	7.8	U	7.4	U	22.9		7.8	U
Bis(2-chloroethoxy)methane		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Bis(2-chloroethyl)ether		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2 9	U	2 9	U	2.9	U	1.5	J	2.9	U	2.8	U	2.8	U	2.9	U
Butylbenzylphthalate		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Caprolactam		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Carbazole		2 9	U	2 9	U	0.34	J	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Chrysene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Di-n-butylphthalate		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Di-n-octylphthalate		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Dibenz(a,h)anthracene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Dibenzofuran	4	0.61	J	1.1	J	1.3	J	2.9	U	2.9	U	2.8	U	7.5		2.9	U
Diethylphthalate		7 8	U	0.64	J	7.7	U	0.52	J	7.8	U	7.4	U	0.72	J	7.8	U
Dimethylphthalate		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Fluoranthene		0.32	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	0.44	J	1.5	U
Fluorene		1.6		2 9		3.5		1.4	U	1.5	U	1.4	U	16.1		1.5	U
Hexachlorobenzene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Hexachlorobutadiene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Hexachlorocyclopentadiene		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
Hexachloroethane		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Indeno(1,2,3-cd)pyrene		1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Isophorone		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	0.44	J
Mp-cresol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U
N-Nitroso-di-n-propylamine		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
N-Nitrosodiphenylamine		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Naphthalene	3	1 5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	193		1.5	U
Nitrobenzene		2 9	U	2 9	U	2.9	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U
Pentachlorophenol	1	2.1	J	1030		892		15.2	U	15.5	U	14.8	U	1920		4.1	J
Phenanthrene	41	1 5	U	0.58	J	1.4	U	1.4	U	1.5	U	1.4	U	22.4		1.5	U
Phenol		7 8	U	7.6	U	7.7	U	7.6	U	7.8	U	7.4	U	7.5	U	7.8	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-20S		HAV-LTR-CW-21D		HAV-LTR-CW-21S		HAV-LTR-CW-22D		HAV-LTR-CW-22S		HAV-LTR-CW-23D		HAV-LTR-CW24D		HAV-LTR-CW26D	
Sample Date:	**Goals for**	**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/23/2015**		**4/23/2015**		**4/28/2015**		**5/4/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**																
Pyrene		0.46	J	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	0.62	J	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,1,2,2-Tetrachloroethane		0 2	U	0 2	U	0.2	U	0.2	U	0.2	U	0.2	U	1	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	10	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	10	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	35	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,2-Dichloroethene (cis)		1	U	2.4		2.8		1	U	1	U	1	U	5	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	1600	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	50	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	25	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	25	U	5	U
Acetone		10	U	10	U	10	U	10	U	10	U	10	U	16.9	J	4.1	J
Benzene	5	1	U	2.1		2		1	U	1	U	1	U	18.7		1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Bromomethane		0.46	J	1	U	1	U	0.53	J	1	U	1	U	5	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Chloroform		1	U	1	U	1	U	0.5	J	0.45	J	1.9		3.6	J	1	U
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	6.9		1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Ethylbenzene	700	1	U	0.56	J	1	U	1	U	1	U	1	U	7.5		1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Isopropylbenzene		1.1		1 8		2.2		1	U	1	U	1	U	3.2	J	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	10	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1.6	J	1	U
Methyl T-butyl Ether		1	U	1 2		2.5		0.48	J	0.61	J	1	U	5	U	1	U
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	2	U	2	U	11.5		2	U
O-xylene		1	U	2 5		1	U	1	U	1	U	1	U	22.3		1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW-20S		HAV-LTR-CW-21D		HAV-LTR-CW-21S		HAV-LTR-CW-22D		HAV-LTR-CW-22S		HAV-LTR-CW-23D		HAV-LTR-CW24D		HAV-LTR-CW26D	
Sample Date:	**Goals for**	**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/23/2015**		**4/23/2015**		**4/28/2015**		**5/4/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**																
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Toluene	1000	1	U	5.6		1	U	1	U	1	U	1	U	5.5		1.2	
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Trichloroethene	5	1	U	1.4		1.5		1	U	1	U	1	U	5	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW27D		HAV-LTR-CW28D		HAV-LTR-CW-32		HAV-LTR-CW-33		HAV-LTR-CW-34		HAV-LTR-RW3		HAV-LTR-RW5		HAV-LTR-RW6		HAV-LTR-RW7	
Sample Date:	**Goals for**	**5/4/2015**		**5/5/2015**		**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**																		
INORGANICS		**mg/L**		**mg/L**		**ug/L**		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	69	J	89	U	31	J	190		89	U	89	U	89	U
Antimony		2.2	U	2 2	U	NA		NA		NA		2 2	U	2.2	U	2.2	U	2.2	U
Arsenic	10	7.1		5.6		3	U	3	U	3	U	4.4		7.8		3	U	1.1	J
Barium	2000	48		34		NA		NA		NA		49		64		97		50	
Beryllium		1	U	1	U	NA		NA		NA		1	U	1	U	1	U	1	U
Cadmium		1.1	U	1.1	U	NA		NA		NA		1.1	U	1.1	U	1.1	U	1.1	U
Calcium		28700		23100		NA		NA		NA		26000		28600		42500		42400	
Chromium		2.2		1 2	J	NA		NA		NA		1 9	J	1.5	J	0.76	J	0.96	J
Cobalt		160		48		5.6	U	5.6	U	5.6	U	24		26		12		13	
Copper		5.6	U	5.6	U	NA		NA		NA		5.6	U	5.6	U	5.6	U	5.6	U
Iron	300	22200		5400		56	U	34	J	45	J	8800		19100		2400		15300	
Lead		2.2	U	2 2	U	2.2	U	2.2	U	2.2	U	2 2	U	2.2	U	2.2	U	2.2	U
Magnesium		16600		14100		NA		NA		NA		14600		16400		15200		15300	
Manganese	50	5400		6600		51		7.2		45		7100		10100		2200		5100	
Mercury		0.5	U	0 5	U	NA		NA		NA		0 5	U	0.5	U	0.5	U	0.5	U
Nickel		44		8 8		NA		NA		NA		5.1	J	5.6	U	6		6.6	
Potassium		7800		6600		NA		NA		NA		8000		7500		6200		8600	
Selenium		5.6	U	5.6	U	NA		NA		NA		5.6	U	5.6	U	5.6	U	5.6	U
Silver		2.2	U	2 2	U	NA		NA		NA		2 2	U	2.2	U	2.2	U	2.2	U
Sodium		184000		182000		NA		NA		NA		188000		104000		32700		88200	
Thallium		1	U	1	U	NA		NA		NA		1	U	1	U	1	U	1	U
Vanadium	3.1	2.2	U	1	J	NA		NA		NA		1.6	J	2.2	U	0.8	J	0.81	J
Zinc		0.02		0.021		NA		NA		NA		0.0053	J	0.0056	U	0.0041	J	0.012	
DIOXIN/FURAN												**pg/L**		**pg/L**				**pg/L**	
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		23		0 089		NA		0.045	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
1,4-Dioxane		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2,3,4,6-Tetrachlorophenol		158		188		7.6	U	7.9	U	7.9	U	287		225		18.4		91.1	
2,4,5-Trichlorophenol		2.9	J	7 5	U	7.6	U	7.9	U	7.9	U	0.48	J	5.2	J	2.3	J	10.5	
2,4,6-Trichlorophenol		14.7		1 2	J	7.6	U	7.9	U	7.9	U	4 2	J	6	J	0 94	J	2.7	J
2,4-Dichlorophenol		1.4	J	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	1.5	J	7.4	U	7.8	U
2,4-Dimethylphenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
2,4-Dinitrophenol		15.6	U	15	U	15.2	U	15.8	U	15.8	U	15.7	U	15.2	U	14.8	U	15.7	U
2,4-Dinitrotoluene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2,6-Dinitrotoluene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2-Chloronaphthalene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2-Chlorophenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
2-Methyl-4,6-dinitrophenol	1.7	7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
2-Methylnaphthalene	2	1.5	U	21 9		1.4	U	1.5	U	1.5	U	1 5	U	7.3		1.4	U	20.5	
2-Methylphenol		0.44	J	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	0.66	J	7.4	U	7.8	U
2-Nitroaniline		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
2-Nitrophenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
3,3-Dichlorobenzidine		15.6	U	15	U	15.2	U	15.8	U	15.8	U	15.7	U	15.2	U	14.8	U	15.7	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW27D		HAV-LTR-CW28D		HAV-LTR-CW-32		HAV-LTR-CW-33		HAV-LTR-CW-34		HAV-LTR-RW3		HAV-LTR-RW5		HAV-LTR-RW6		HAV-LTR-RW7	
Sample Date:	**Goals for**	**5/4/2015**		**5/5/2015**		**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**																		
3-Nitroaniline		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
4-Bromophenyl Phenyl Ether		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
4-Chloro-3-methylphenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
4-Chloroaniline		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
4-Chlorophenyl Phenyl Ether		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
4-Nitroaniline		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
4-Nitrophenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
Acenaphthene		1.4	J	1 9		1.4	U	1.5	U	1.5	U	3 2		5.6		1.4	U	2.9	
Acenaphthylene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	0.61	J
Acetophenone		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	8.8		7.4	U	7.8	U
Anthracene		0.5	J	0.36	J	1.4	U	1.5	U	1.5	U	0.48	J	1.4	J	1.4	U	1.5	U
Atrazine		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Benz(a)anthracene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzaldehyde		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
Benzo(a)pyrene	0.2	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzo(b)fluoranthene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzo(g,h,i)perylene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzo(k)fluoranthene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Biphenyl		2.7	J	2 2	J	7.6	U	7.9	U	7.9	U	0.88	J	16		0 57	J	6.2	J
Bis(2-chloroethoxy)methane		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Bis(2-chloroethyl)ether		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Butylbenzylphthalate		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Caprolactam		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
Carbazole		0.66	J	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Chrysene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Di-n-butylphthalate		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Di-n-octylphthalate		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
Dibenz(a,h)anthracene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Dibenzofuran	4	1.5	J	0.83	J	2.8	U	3	U	3	U	0.45	J	4.6		0.69	J	3.1	
Diethylphthalate		2.2	J	5 2	J	7.6	U	7.9	U	7.9	U	5 8	J	7.6	U	7.4	U	7.8	U
Dimethylphthalate		7.8	U	0.4	J	7.6	U	7.9	U	7.9	U	0.39	J	7.6	U	7.4	U	7.8	U
Fluoranthene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	0.38	J	1.4	U	1.5	U
Fluorene		3.7		1.6		1.4	U	1.5	U	1.5	U	2 2		10.1		1.1	J	7.1	
Hexachlorobenzene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Hexachlorobutadiene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Hexachlorocyclopentadiene		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U
Hexachloroethane		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Indeno(1,2,3-cd)pyrene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	1 5	U	1.4	U	1.4	U	1.5	U
Isophorone		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Mp-cresol		7.8	U	0.42	J	7.6	U	7.9	U	7.9	U	1 3	J	1.3	J	7.4	U	7.8	U
N-Nitroso-di-n-propylamine		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
N-Nitrosodiphenylamine		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Naphthalene	3	1.4	J	127		1.4	U	1.5	U	1.5	U	1.7		60.7		1.4	U	78.6	
Nitrobenzene		2.9	U	2 8	U	2.8	U	3	U	3	U	2 9	U	2.8	U	2.8	U	2.9	U
Pentachlorophenol	1	1950		3230		15.2	U	15.8	U	15.8	U	4160		3820		498		2110	
Phenanthrene	41	1.3	J	1 2	J	1.4	U	1.5	U	1.5	U	1	J	12.3		1.4	U	5.9	
Phenol		7.8	U	7 5	U	7.6	U	7.9	U	7.9	U	7 8	U	7.6	U	7.4	U	7.8	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-CW27D		HAV-LTR-CW28D		HAV-LTR-CW-32		HAV-LTR-CW-33		HAV-LTR-CW-34		HAV-LTR-RW3		HAV-LTR-RW5		HAV-LTR-RW6		HAV-LTR-RW7	
Sample Date:	**Goals for**	**5/4/2015**		**5/5/2015**		**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**																		
Pyrene		1.5	U	1.4	U	1.4	U	1.5	U	1.5	U	0.42	J	0.44	J	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		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
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	0 5	J	1	U	1	U	1	U	0.68	J	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	0.54	J	1	U	1	U
1,2-Dichloroethene (cis)		0.94	J	1	U	1	U	1	U	1	U	0.32	J	8.2		3		7.1	
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	3.7	J
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	7 2	J	10	U	10	U	10	U	6.4	J	3.8	J	10	U	3.4	J
Benzene	5	9.8		0.32	J	1	U	1	U	1	U	0.46	J	33.6		1		2	
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	2 9		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	0 56	J	0.55	J	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide		0.36	J	0.48	J	1	U	1	U	1	U	0.38	J	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1	U	102		1	U	1	U	0.77	J	50 3		4.6		0.3	J	10.2	
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1.5		1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	2		8 9		1	U	1	U	1	U	11 5		18		1	U	3.1	
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1.7		4 8		1	U	1	U	1	U	6 2		4.9		0.68	J	4.6	
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	0.98	J	3.7		0.8	J
Methylene Chloride		1	U	4.4		1	U	1	U	1	U	4.6		1	U	1	U	1.1	
Mp-xylene		1	J	17.1		2	U	2	U	2	U	21.7		17.7		2	U	3.3	
O-xylene		6		39		1	U	1	U	1	U	55.7		38.8		1	U	16.6	

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Sample ID:	Remediation	HAV-LTR-CW27D		HAV-LTR-CW28D		HAV-LTR-CW-32		HAV-LTR-CW-33		HAV-LTR-CW-34		HAV-LTR-RW3		HAV-LTR-RW5		HAV-LTR-RW6		HAV-LTR-RW7	
Sample Date:	**Goals for**	**5/4/2015**		**5/5/2015**		**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**																		
Styrene		1	U	0.45	J	1	U	1	U	1	U	0.47	J	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	2.6		5 3		1	U	1	U	1	U	5.4		5.4		1	U	1.1	
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	2.2		0.6	J	1	U	1	U	1	U	1 2		7.6		1.1		3.8	
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	0.47	J	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-RW-8		HAV-LTR-RW-9		HAV-LTR-RW-10		HAV-LTR-IW1		HAV-LTR-IW-2		HAV-LTR-IW4		HAV-LTR-DUP-5		HAV-LTR-IW5		HAV-LTR-HAV-04	
Sample Date:	**Goals for**	**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/4/2015**		**5/5/2015**		**5/4/2015**		**5/4/2015**		**5/4/2015**		**4/27/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-IW4**					
INORGANICS		**ug/L**		**ug/L**		**ug/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	590		180		89	U	89	U	89	U	89	U	50	J	480	
Antimony		NA		NA		NA		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	NA	
Arsenic	10	3	U	3	U	3	U	3	U	7.1		3	U	3	U	3	U	3	U
Barium	2000	NA		NA		NA		14		86		37		37		38		NA	
Beryllium		NA		NA		NA		1	U	1	U	1	U	1	U	1	U	NA	
Cadmium		NA		NA		NA		1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	NA	
Calcium		NA		NA		NA		34400		34700		44700		44500		44400		NA	
Chromium		NA		NA		NA		350		1.8	J	20		26		2.3		NA	
Cobalt		5.6	U	5.6	U	5.6	U	9.1		57		5.6	U	5.6	U	5.6	U	210	
Copper		NA		NA		NA		11		5.6	U	5.8		5.3	J	3.7	J	NA	
Iron	300	52	J	220		540		2000		26500		5000		5200		5400		1300	
Lead		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	1	J
Magnesium		NA		NA		NA		17500		19100		19400		19300		19700		NA	
Manganese	50	4.8	J	35		480		1500		9500		640		640		700		28500	
Mercury		NA		NA		NA		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	NA	
Nickel		NA		NA		NA		620		7.9		3.8	J	2.9	J	5.6	U	NA	
Potassium		NA		NA		NA		6400		8400		8200		8200		7700		NA	
Selenium		NA		NA		NA		5.6	U	5.6	U	5.6	U	5.6	U	5.6	U	NA	
Silver		NA		NA		NA		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	NA	
Sodium		NA		NA		NA		182000		149000		215000		199000		271000		NA	
Thallium		NA		NA		NA		1	U	1	U	1	U	1	U	1	U	NA	
Vanadium	3.1	NA		NA		NA		11	U	1.3	J	2.2	U	2.2	U	2.2	U	NA	
Zinc		NA		NA		NA		0.0064		0 006		0.0067		0.0039	J	0.0044	J	NA	
DIOXIN/FURAN												**pg/L**		**pg/L**					
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA		NA		NA		0.28		0 33		NA		NA	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
1,4-Dioxane		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2,3,4,6-Tetrachlorophenol		7.6	U	7.4	U	7.6	U	33.1		411		13.3		14.5		1.9	J	436	J
2,4,5-Trichlorophenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2,4,6-Trichlorophenol		7.6	U	7.4	U	7.6	U	7.8	U	1.4	J	1.7	J	2	J	7.7	U	7.7	U
2,4-Dichlorophenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2,4-Dimethylphenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2,4-Dinitrophenol		15.2	U	14.9	U	15.2	U	15.6	U	15.5	U	15.1	U	15.1	U	15.4	U	15.5	U
2,4-Dinitrotoluene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2,6-Dinitrotoluene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2-Chloronaphthalene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2-Chlorophenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	9.8	
2-Methylphenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	4.2	J
2-Nitroaniline		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
2-Nitrophenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
3,3-Dichlorobenzidine		15.2	U	14.9	U	15.2	U	15.6	U	15.5	U	15.1	U	15.1	U	15.4	U	15.5	U

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Sample ID:	Remediation	HAV-LTR-RW-8		HAV-LTR-RW-9		HAV-LTR-RW-10		HAV-LTR-IW1		HAV-LTR-IW-2		HAV-LTR-IW4		HAV-LTR-DUP-5		HAV-LTR-IW5		HAV-LTR-HAV-04	
Sample Date:	**Goals for**	**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/4/2015**		**5/5/2015**		**5/4/2015**		**5/4/2015**		**5/4/2015**		**4/27/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-IW4**					
3-Nitroaniline		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
4-Bromophenyl Phenyl Ether		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
4-Chloro-3-methylphenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
4-Chloroaniline		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
4-Chlorophenyl Phenyl Ether		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
4-Nitroaniline		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
4-Nitrophenol		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Acenaphthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Acenaphthylene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Acetophenone		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Anthracene		1.4	U	1.4	U	1.4	U	1.5	U	0.43	J	1.4	U	1.4	U	1.4	U	1.4	U
Atrazine		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzaldehyde		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Biphenyl		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	2.4	J
Bis(2-chloroethoxy)methane		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Bis(2-chloroethyl)ether		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Butylbenzylphthalate		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Caprolactam		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Carbazole		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Chrysene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Di-n-butylphthalate		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Di-n-octylphthalate		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Dibenzofuran	4	2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Diethylphthalate		7.6	U	7.4	U	7.6	U	7.8	U	2.7	J	7.5	U	7.5	U	7.7	U	7.7	U
Dimethylphthalate		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Fluoranthene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	0.79	J
Fluorene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Hexachlorobenzene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Hexachlorobutadiene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Hexachlorocyclopentadiene		7.6	U	7.4	U	7.6	U	7.8	U	7.7	U	7.5	U	7.5	U	7.7	U	7.7	U
Hexachloroethane		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Isophorone		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Mp-cresol		7.6	U	7.4	U	7.6	U	7.8	U	4.7	J	7.5	U	7.5	U	7.7	U	3.4	J
N-Nitroso-di-n-propylamine		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
N-Nitrosodiphenylamine		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.5	U	3.5		1.4	U	1.4	U	1.4	U	12.4	
Nitrobenzene		2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Pentachlorophenol	1	15.2	U	14.9	U	15.2	U	981		4920		92.2		102		37.5		4180	
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	3.1	
Phenol		7.6	U	7.4	U	7.6	U	7.8	U	0.27	J	7.5	U	7.5	U	7.7	U	7.7	U

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Sample Date:	**Goals for**	**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/4/2015**		**5/5/2015**		**5/4/2015**		**5/4/2015**		**5/4/2015**		**4/27/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-IW4**					
Pyrene		1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	2.2	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		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
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.2	
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	0.56	J	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	2.6	J	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	10	U	3.1	J	13.2		4	J	10	U	10	U	5.2	J
Benzene	5	1	U	1	U	1	U	1	U	0.39	J	1	U	1	U	1	U	2.3	
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	0 53	J	1	U	3		2.9		6.9		1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		0.58	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.49	J
Carbon Disulfide		1	U	1	U	1	U	1	U	0.24	J	1	U	1	U	1	U	0.27	J
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.2		1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1	U	1	U	0.24	J	18.6		34		80.3		85.6		156		2.6	
Chloromethane		1	U	1	U	1	U	1.6		0.35	J	1.1		1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.81	J
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	6.1	
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	3.7	
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	0.72	J	1	U	1	U	1	U	1	
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		1	U	1	U	1	U	4.4		5.9		1	U	1	U	1	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	16		2	U	2	U	2	U	13.1	
O-xylene		1	U	1	U	1	U	0.63	J	50.1		1	U	1	U	1	U	90.5	

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-RW-8		HAV-LTR-RW-9		HAV-LTR-RW-10		HAV-LTR-IW1		HAV-LTR-IW-2		HAV-LTR-IW4		HAV-LTR-DUP-5		HAV-LTR-IW5		HAV-LTR-HAV-04	
Sample Date:	**Goals for**	**4/20/2015**		**4/20/2015**		**4/20/2015**		**5/4/2015**		**5/5/2015**		**5/4/2015**		**5/4/2015**		**5/4/2015**		**4/27/2015**	
Duplicate of:	**Groundwater**													**HAV-LTR-IW4**					
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	1	U	1	U	1	U	1	U	6.5		1.1		1.1		0.34	J	1	
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	0.92	J	1	U	1	U	1	U	7.2	
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-HAV-05		HAV-LTR-HAV-07		HAV-LTR-DUP03		HAV-LTR-MW-1		HAV-LTR-MW-2		HAV-LTR-MW-3		HAV-LTR-NW-6		HAV-LTR-NW-1	
Sample Date:	**Goals for**	**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/22/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**					**HAV-LTR-HAV-07**											
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
Aluminum	200	89	U	89	U	89	U	41	J	250		89	U	89	U	89	U
Antimony		NA		NA		NA		NA		NA		NA		NA		2.2	U
Arsenic	10	1.5	J	3	U	3	U	3	U	1 9	J	3	U	1.2	J	3	U
Barium	2000	NA		NA		NA		NA		NA		NA		NA		46	
Beryllium		NA		NA		NA		NA		NA		NA		NA		1	U
Cadmium		NA		NA		NA		NA		NA		NA		NA		1.1	U
Calcium		NA		NA		NA		NA		NA		NA		NA		25900	
Chromium		NA		NA		NA		NA		NA		NA		NA		2.2	U
Cobalt		33		5.6	U	5.6	U	5.6	U	2 2	J	5.6	U	20		5.6	U
Copper		NA		NA		NA		NA		NA		NA		NA		2.4	J
Iron	300	17800		23	J	56	U	86		1100		21000		1200		53	J
Lead		2.2	U	2.2	U	2.2	U	2.2	U	2 2	U	2.2	U	2.2	U	2.3	
Magnesium		NA		NA		NA		NA		NA		NA		NA		8400	
Manganese	50	13700		11		5.1	J	93		220		1300		4100		22	
Mercury		NA		NA		NA		NA		NA		NA		NA		0.5	U
Nickel		NA		NA		NA		NA		NA		NA		NA		5.6	U
Potassium		NA		NA		NA		NA		NA		NA		NA		3500	
Selenium		NA		NA		NA		NA		NA		NA		NA		5.6	U
Silver		NA		NA		NA		NA		NA		NA		NA		2.2	U
Sodium		NA		NA		NA		NA		NA		NA		NA		47800	
Thallium		NA		NA		NA		NA		NA		NA		NA		1	U
Vanadium	3.1	NA		NA		NA		NA		NA		NA		NA		2.2	U
Zinc		NA		NA		NA		NA		NA		NA		NA		0 0062	
DIOXIN/FURAN		**pg/L**														**pg/L**	
Toxicity Equivalent Quotient (TEQ)	30	28		NA		NA		NA		NA		NA		NA		35	
SEMIVOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
1,4-Dioxane		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
2,2'-Oxybis(1-chloropropane)		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
2,3,4,6-Tetrachlorophenol		178		7.7	U	7.5	U	7.7	U	7 5	U	22.7		30.1		7.6	U
2,4,5-Trichlorophenol		9.3		7.7	U	7.5	U	7.7	U	7 5	U	3.7	J	7.8	U	7.6	U
2,4,6-Trichlorophenol		4.2	J	7.7	U	7.5	U	7.7	U	7 5	U	2	J	0.66	J	7.6	U
2,4-Dichlorophenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2,4-Dimethylphenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2,4-Dinitrophenol		15.1	U	15 3	U	15.1	U	15.4	U	15	U	15.2	U	15 5	U	15.2	U
2,4-Dinitrotoluene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
2,6-Dinitrotoluene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
2-Chloronaphthalene		7.5		2.9	U	2.8	U	2.9	U	2 8	U	4.7		2.9	U	2.9	U
2-Chlorophenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2-Methylnaphthalene	2	51 5		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
2-Methylphenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
2-Nitroaniline		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
2-Nitrophenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
3,3-Dichlorobenzidine		15.1	U	15 3	U	15.1	U	15.4	U	15	U	15.2	U	15 5	U	15.2	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-HAV-05		HAV-LTR-HAV-07		HAV-LTR-DUP03		HAV-LTR-MW-1		HAV-LTR-MW-2		HAV-LTR-MW-3		HAV-LTR-NW-6		HAV-LTR-NW-1	
Sample Date:	**Goals for**	**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/22/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**					**HAV-LTR-HAV-07**											
3-Nitroaniline		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
4-Bromophenyl Phenyl Ether		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
4-Chloro-3-methylphenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
4-Chloroaniline		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
4-Chlorophenyl Phenyl Ether		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
4-Nitroaniline		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
4-Nitrophenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Acenaphthene		5.9		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acenaphthylene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Acetophenone		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Anthracene		1	J	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Atrazine		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzaldehyde		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Biphenyl		9.2		7.7	U	7.5	U	7.7	U	7 5	U	2.4	J	7.8	U	7.6	U
Bis(2-chloroethoxy)methane		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Bis(2-chloroethyl)ether		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	0.39	J	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Butylbenzylphthalate		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Caprolactam		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Carbazole		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Chrysene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Di-n-butylphthalate		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Di-n-octylphthalate		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Dibenzofuran	4	3.9		2.9	U	2.8	U	2.9	U	2 8	U	1.1	J	2.9	U	2.9	U
Diethylphthalate		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Dimethylphthalate		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Fluoranthene		0.34	J	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Fluorene		8.5		1.4	U	1.4	U	1.4	U	1.4	U	2.3		1.5	U	1.4	U
Hexachlorobenzene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Hexachlorobutadiene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Hexachlorocyclopentadiene		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
Hexachloroethane		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Isophorone		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Mp-cresol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U
N-Nitroso-di-n-propylamine		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
N-Nitrosodiphenylamine		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Naphthalene	3	310		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Nitrobenzene		2.8	U	2.9	U	2.8	U	2.9	U	2 8	U	2.8	U	2.9	U	2.9	U
Pentachlorophenol	1	3490		15 3	U	15.1	U	15.4	U	2 8	J	599		471		15.2	U
Phenanthrene	41	8.5		1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
Phenol		7.5	U	7.7	U	7.5	U	7.7	U	7 5	U	7.6	U	7.8	U	7.6	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-HAV-05		HAV-LTR-HAV-07		HAV-LTR-DUP03		HAV-LTR-MW-1		HAV-LTR-MW-2		HAV-LTR-MW-3		HAV-LTR-NW-6		HAV-LTR-NW-1	
Sample Date:	**Goals for**	**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/22/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**					**HAV-LTR-HAV-07**											
Pyrene		0.58	J	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U	0 2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1.4		1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	2.9		1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		0.4	J	1	U	1	U	1	U	1	U	2.8		10	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	6.4		1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		5.3	J	10	U	10	U	10	U	10	U	10	U	4.3	J	3.7	J
Benzene	5	5.6		1	U	1	U	1	U	1	U	0.71	J	0.41	J	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	5.7	
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	1	U	1	U	0.4	J	0.39	J	0.39	J	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		5.1		0.9	J	2.3		0 96	J	0.25	J	1	U	1	U	28	
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1.2		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.87	J
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	22		1	U	1	U	1	U	1	U	0.7	J	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		11 9		1	U	1	U	1	U	1	U	0.78	J	0.24	J	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1.7		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1.6		1.7		1	U
Methylene Chloride		1	U	1	U	0.5	J	1	U	1	U	1	U	1	U	1	U
Mp-xylene		14.1		2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene		70.4		1	U	1	U	1	U	1	U	1.8		1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-HAV-05		HAV-LTR-HAV-07		HAV-LTR-DUP03		HAV-LTR-MW-1		HAV-LTR-MW-2		HAV-LTR-MW-3		HAV-LTR-NW-6		HAV-LTR-NW-1	
Sample Date:	**Goals for**	**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/27/2015**		**4/27/2015**		**4/24/2015**		**4/22/2015**		**5/5/2015**	
Duplicate of:	**Groundwater**					**HAV-LTR-HAV-07**											
Styrene		0.47	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	0.59	J	1	U
Toluene	1000	1.3		1	U	1	U	1	U	1	U	0.41	J	1	U	0.52	J
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	3.1		1	U	1	U	1	U	1	U	0.99	J	10	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	30.4		1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-FB05		HAV-LTR-RB-1		HAV-LTR-TB01	HAV-LTR-TB02	HAV-LTR-TB03	HAV-LTR-TB04	HAV-LTR-TB05
Sample Date:	**Goals for**	**5/4/2015**		**4/21/2015**		**4/20/2015**	**4/22/2015**	**4/24/2015**	**4/28/2015**	**5/4/2015**
Duplicate of:	**Groundwater**									
INORGANICS		**mg/L**		**ug/L**						
Aluminum	200	89	U	89	U	NA	NA	NA	NA	NA
Antimony		2.2	U	NA		NA	NA	NA	NA	NA
Arsenic	10	3	U	3	U	NA	NA	NA	NA	NA
Barium	2000	5.6	U	NA		NA	NA	NA	NA	NA
Beryllium		1	U	NA		NA	NA	NA	NA	NA
Cadmium		1.1	U	NA		NA	NA	NA	NA	NA
Calcium		110	U	NA		NA	NA	NA	NA	NA
Chromium		3.5		NA		NA	NA	NA	NA	NA
Cobalt		5.6	U	5.6	U	NA	NA	NA	NA	NA
Copper		5.6	U	NA		NA	NA	NA	NA	NA
Iron	300	220		56	U	NA	NA	NA	NA	NA
Lead		2.2	U	2.2	U	NA	NA	NA	NA	NA
Magnesium		110	U	NA		NA	NA	NA	NA	NA
Manganese	50	3.2	J	5.6	U	NA	NA	NA	NA	NA
Mercury		0.5	U	NA		NA	NA	NA	NA	NA
Nickel		5.6	U	NA		NA	NA	NA	NA	NA
Potassium		110	U	NA		NA	NA	NA	NA	NA
Selenium		5.6	U	NA		NA	NA	NA	NA	NA
Silver		2.2	U	NA		NA	NA	NA	NA	NA
Sodium		260		NA		NA	NA	NA	NA	NA
Thallium		1	U	NA		NA	NA	NA	NA	NA
Vanadium	3.1	2.2	U	NA		NA	NA	NA	NA	NA
Zinc		0.0024	J	NA		NA	NA	NA	NA	NA
DIOXIN/FURAN										
Toxicity Equivalent Quotient (TEQ)	30	NA		NA		NA	NA	NA	NA	NA
SEMIVOLATILES		**ug/L**		**ug/L**						
1,2,4,5-Tetrachlorobenzene		3	U	3	U	NA	NA	NA	NA	NA
1,4-Dioxane		3	U	3	U	NA	NA	NA	NA	NA
2,2'-Oxybis(1-chloropropane)		3	U	3	U	NA	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2,4-Dichlorophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2,4-Dimethylphenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2,4-Dinitrophenol		15.8	U	15.8	U	NA	NA	NA	NA	NA
2,4-Dinitrotoluene		3	U	3	U	NA	NA	NA	NA	NA
2,6-Dinitrotoluene		3	U	3	U	NA	NA	NA	NA	NA
2-Chloronaphthalene		3	U	3	U	NA	NA	NA	NA	NA
2-Chlorophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2-Methyl-4,6-dinitrophenol	1.7	7.9	U	7.9	U	NA	NA	NA	NA	NA
2-Methylnaphthalene	2	1.5	U	1.5	U	NA	NA	NA	NA	NA
2-Methylphenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
2-Nitroaniline		3	U	3	U	NA	NA	NA	NA	NA
2-Nitrophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine		15.8	U	15.8	U	NA	NA	NA	NA	NA

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-FB05		HAV-LTR-RB-1		HAV-LTR-TB01	HAV-LTR-TB02	HAV-LTR-TB03	HAV-LTR-TB04	HAV-LTR-TB05
Sample Date:	**Goals for**	**5/4/2015**		**4/21/2015**		**4/20/2015**	**4/22/2015**	**4/24/2015**	**4/28/2015**	**5/4/2015**
Duplicate of:	**Groundwater**									
3-Nitroaniline		3	U	3	U	NA	NA	NA	NA	NA
4-Bromophenyl Phenyl Ether		3	U	3	U	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
4-Chloroaniline		3	U	3	U	NA	NA	NA	NA	NA
4-Chlorophenyl Phenyl Ether		3	U	3	U	NA	NA	NA	NA	NA
4-Nitroaniline		3	U	3	U	NA	NA	NA	NA	NA
4-Nitrophenol		7.9	U	7.9	U	NA	NA	NA	NA	NA
Acenaphthene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Acenaphthylene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Acetophenone		7.9	U	0.42	J	NA	NA	NA	NA	NA
Anthracene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Atrazine		3	U	3	U	NA	NA	NA	NA	NA
Benz(a)anthracene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Benzaldehyde		7.9	U	7.9	U	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	1.5	U	1.5	U	NA	NA	NA	NA	NA
Benzo(b)fluoranthene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Benzo(k)fluoranthene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Biphenyl		7.9	U	7.9	U	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane		3	U	3	U	NA	NA	NA	NA	NA
Bis(2-chloroethyl)ether		3	U	3	U	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	6	3	U	3	U	NA	NA	NA	NA	NA
Butylbenzylphthalate		3	U	3	U	NA	NA	NA	NA	NA
Caprolactam		7.9	U	7.9	U	NA	NA	NA	NA	NA
Carbazole		3	U	3	U	NA	NA	NA	NA	NA
Chrysene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Di-n-butylphthalate		3	U	3	U	NA	NA	NA	NA	NA
Di-n-octylphthalate		7.9	U	7.9	U	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Dibenzofuran	4	3	U	3	U	NA	NA	NA	NA	NA
Diethylphthalate		7.9	U	7.9	U	NA	NA	NA	NA	NA
Dimethylphthalate		7.9	U	7.9	U	NA	NA	NA	NA	NA
Fluoranthene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Fluorene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Hexachlorobenzene		3	U	3	U	NA	NA	NA	NA	NA
Hexachlorobutadiene		3	U	3	U	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene		7.9	U	7.9	U	NA	NA	NA	NA	NA
Hexachloroethane		3	U	3	U	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene		1.5	U	1.5	U	NA	NA	NA	NA	NA
Isophorone		3	U	3	U	NA	NA	NA	NA	NA
Mp-cresol		7.9	U	7.9	U	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine		3	U	3	U	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine		3	U	3	U	NA	NA	NA	NA	NA
Naphthalene	3	1.5	U	1.5	U	NA	NA	NA	NA	NA
Nitrobenzene		3	U	3	U	NA	NA	NA	NA	NA
Pentachlorophenol	1	15.8	U	15.8	U	NA	NA	NA	NA	NA
Phenanthrene	41	1.5	U	1.5	U	NA	NA	NA	NA	NA
Phenol		7.9	U	7.9	U	NA	NA	NA	NA	NA

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Sample ID:	Remediation	HAV-LTR-FB05		HAV-LTR-RB-1		HAV-LTR-TB01		HAV-LTR-TB02		HAV-LTR-TB03		HAV-LTR-TB04		HAV-LTR-TB05	
Sample Date:	**Goals for**	**5/4/2015**		**4/21/2015**		**4/20/2015**		**4/22/2015**		**4/24/2015**		**4/28/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**														
Pyrene		1.5	U	1.5	U	NA		NA		NA		NA		NA	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	2	J	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone		8.9	J	8.8	J	12.9		13.2		9.8	J	8.6	J	8.1	J
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		0.42	J	0.41	J	0.48	J	0 53	J	0.44	J	1	U	1	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene		2	U	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene		1	U	1	U	1	U	1	U	1	U	1	U	1	U

SUMMARY OF 2015 ANNUAL SAMPLING EVENT ANALYTICAL RESULTS
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

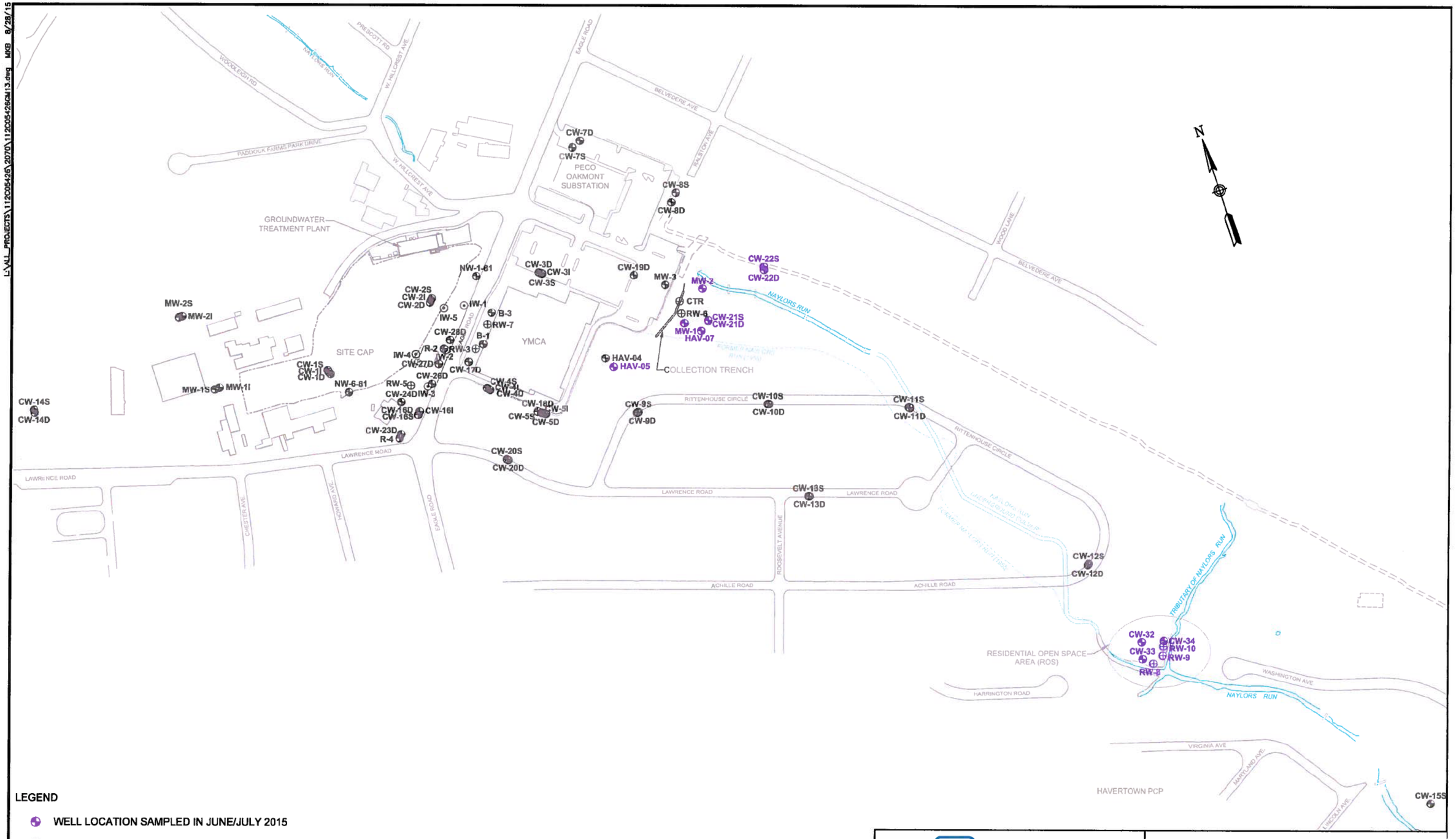
Sample ID:	**Remediation**	**HAV-LTR-FB05**		**HAV-LTR-RB-1**		**HAV-LTR-TB01**		**HAV-LTR-TB02**		**HAV-LTR-TB03**		**HAV-LTR-TB04**		**HAV-LTR-TB05**	
Sample Date:	**Goals for**	**5/4/2015**		**4/21/2015**		**4/20/2015**		**4/22/2015**		**4/24/2015**		**4/28/2015**		**5/4/2015**	
Duplicate of:	**Groundwater**														
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	0.58	J	0.65	J	0.69	J	0.66	J	0.66	J	0.68	J	0.58	J
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: H:\HAVERTOWN\DATA SUMMARIES\052015 - ANNUAL WELLS\HAVMAY15.DBF data retrieved on: 07/28/15

A-4 JUNE/JULY 2015 GROUNDWATER DATA

L:\ALL_PROJECTS\112C05426\2070\112C05426GM13.dwg MKB 8/28/15



LEGEND

- WELL LOCATION SAMPLED IN JUNE/JULY 2015
- OTHER WELL LOCATION
- RECOVERY WELL LOCATION SAMPLED IN JUNE/JULY 2015
- RECOVERY WELL LOCATION
- INJECTION WELL LOCATION

0 250 500
SCALE IN FEET

TETRA TECH

FILE	SCALE
112C05426GM13.dwg	AS NOTED
FIGURE NUMBER	REV / DATE
1	0 / 8/28/15

WELLS SAMPLED IN JUNE/JULY 2015 HAVERTOWN PCP SUPERFUND SITE DELAWARE COUNTY HAVERTOWN, PENNSYLVANIA

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells															
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-DUP02**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW32**		**HAV-LTR-CW33**		**HAV-LTR-CW-34**		**HAV-LTR-CW-21S**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**6/30/2015**		**6/30/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**			**HAV-LTR-RW-8**													
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
1,4-Dioxane		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
2,3,4,6-Tetrachlorophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	18.2	
2,4,5-Trichlorophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	8.8	
2,4,6-Trichlorophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	0 97	J
2,4-Dichlorophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
2,4-Dimethylphenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
2,4-Dinitrophenol		15	U	15.5	U	15.2	U	14.9	U	15 5	U	15.2	U	15.5	U	15.8	U
2,4-Dinitrotoluene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
2,6-Dinitrotoluene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
2-Chloronaphthalene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
2-Chlorophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
2-Methyl-4,6-dinitrophenol	1.7	7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
2-Methylnaphthalene	2	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
2-Methylphenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
2-Nitroaniline		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
2-Nitrophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
3,3-Dichlorobenzidine		15	U	15.5	U	15.2	U	14.9	U	15 5	U	15.2	U	15.5	U	15.8	U
3-Nitroaniline		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
4-Bromophenyl Phenyl Ether		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
4-Chloro-3-methylphenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
4-Chloroaniline		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
4-Chlorophenyl-phenylether		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
4-Nitroaniline		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
4-Nitrophenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Acenaphthene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Acenaphthylene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Acetophenone		7.5	U	7.7	U	7.6	U	7.4	U	7 8	U	7.6	U	7.7	U	7.9	U
Anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Atrazine		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzaldehyde		7.5	U	7.7	U	7.6	U	7.4	U	7 8	U	7.6	U	7.7	U	7.9	U
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Biphenyl		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	1.9	J
Bis(2-chloroethoxy)methane		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
Bis(2-chloroethyl)ether		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
Bis(2-chloroisopropyl)ether		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Bis(2-ethylhexyl)phthalate	6	2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Butylbenzylphthalate		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Caprolactam		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells																			
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-DUP02**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW32**		**HAV-LTR-CW33**		**HAV-LTR-CW-34**		**HAV-LTR-CW-21S**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**6/30/2015**		**6/30/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**			**HAV-LTR-RW-8**													
Carbazole		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Chrysene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Di-n-butylphthalate		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Di-n-octylphthalate		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Dibenzofuran	4	2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	0.79	J
Diethylphthalate		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Dimethylphthalate		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Fluoranthene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Fluorene		1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	2	
Hexachlorobenzene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Hexachlorobutadiene		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Hexachlorocyclopentadiene		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Hexachloroethane		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Isophorone		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Mp-cresol		7.5	U	7.7	U	7.6	U	7.4	U	7 8	U	7.6	U	7.7	U	7.9	U
N-Nitroso-di-n-propylamine		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
N-Nitrosodiphenylamine		2.8	U	2.9	U	2.8	U	2 8	U	2.9	U	2.8	U	2.9	U	3	U
Naphthalene	3	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U
Nitrobenzene		2.8	U	2.9	U	2.8	U	2 8	U	2 9	U	2.8	U	2.9	U	3	U
Pentachlorophenol	1	15	U	15.5	U	15.2	U	14.9	U	15 5	U	15.2	U	15.5	U	475	
Phenanthrene	41	1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
Phenol		7.5	U	7.7	U	7.6	U	7.4	U	7.8	U	7.6	U	7.7	U	7.9	U
Pyrene		1.4	U	1.4	U	1.4	U	1.4	U	1 5	U	1.4	U	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0 2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.1	
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U	320	U	320	U

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells																			
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-DUP02**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW32**		**HAV-LTR-CW33**		**HAV-LTR-CW-34**		**HAV-LTR-CW-21S**			
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**6/30/2015**		**6/30/2015**		**7/1/2015**		**7/1/2015**			
Duplicate of:	**Objective**			**HAV-LTR-RW-8**															
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U		
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U		
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Acetone		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U		
Benzene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.2			
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Bromomethane		0.54	J	0.46	J	1	U	0.51	J	1	U	1	U	0.56	J	0.45	J		
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Chloroform		0.22	J	1	U	1	U	1	U	1	U	1	U	0.51	J	1	U		
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1			
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U		
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Methyl T-butyl Ether		1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.9			
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Mp-xylene	10000	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U		
O-xylene	10000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Styrene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Toluene	1000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1			
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
HERBICIDES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**					
2,4,5-T		0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	NA			
2,4,5-TP		0.28	U	0.28	U	0.29	U	0.28	U	0.28	U	0.28	U	0.28	U	NA			
2,4-D		0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	NA			
2,4-DB		0.28	U	0.28	U	0.29	U	0.28	U	0.28	U	0.28	U	0.28	U	NA			
Dalapon		0.086	J	0.93	U	0.95	U	0.091	J	0.93	U	0.94	U	0.93	U	NA			
Dicamba		0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	NA			
Dichloroprop		0.47	U	0.46	U	0.48	U	0.47	U	0.46	U	0.47	U	0.47	U	NA			

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		ROS Wells																							
Sample ID:	**Remedial**	**HAV-LTR-RW-8**		**HAV-LTR-DUP02**		**HAV-LTR-RW-9**		**HAV-LTR-RW-10**		**HAV-LTR-CW32**		**HAV-LTR-CW33**		**HAV-LTR-CW-34**		**HAV-LTR-CW-21S**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**6/30/2015**		**6/30/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**			**HAV-LTR-RW-8**													
Dinoseb		4.7	U	4.6	U	4.8	U	4.7	U	4.6	U	4.7	U	4.7	U	NA	
MCPA		37.7	U	37	U	38.1	U	37.6	U	37	U	37.7	U	37.2	U	NA	
MCPP		37.7	U	37	U	38.1	U	37.6	U	37	U	37.7	U	37.2	U	NA	
Pentachlorophenol	1	0.056	J	0.19	U	0.076	J	0.062	J	0.19	U	0.19	U	0.1	J	NA	

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-CW-22D**		**HAV-LTR-CW-22S**		**HAV-LTR-DUP01**		**HAV-LTR-MW-1**		**HAV-LTR-MW-2**		**HAV-LTR-MW-21D**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**					**HAV-LTR-CW-22S**							
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,2,4,5-Tetrachlorobenzene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
1,4-Dioxane		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
2,3,4,6-Tetrachlorophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	18.8	
2,4,5-Trichlorophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	11	
2,4,6-Trichlorophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	0.91	J
2,4-Dichlorophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
2,4-Dimethylphenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
2,4-Dinitrophenol		15.8	U	15	U	15	U	15	U	14 9	U	16	U
2,4-Dinitrotoluene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
2,6-Dinitrotoluene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
2-Chloronaphthalene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
2-Chlorophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
2-Methyl-4,6-dinitrophenol	1.7	7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
2-Methylnaphthalene	2	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
2-Methylphenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
2-Nitroaniline		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
2-Nitrophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
3,3-Dichlorobenzidine		15.8	U	15	U	15	U	15	U	14 9	U	16	U
3-Nitroaniline		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
4-Bromophenyl Phenyl Ether		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
4-Chloro-3-methylphenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
4-Chloroaniline		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
4-Chlorophenyl-phenylether		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
4-Nitroaniline		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
4-Nitrophenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Acenaphthene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	0.36	J
Acenaphthylene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Acetophenone		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Anthracene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Atrazine		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Benz(a)anthracene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzaldehyde		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Benzo(a)pyrene	0 2	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(b)fluoranthene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(g,h,i)perylene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Benzo(k)fluoranthene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Biphenyl		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	1.9	J
Bis(2-chloroethoxy)methane		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Bis(2-chloroethyl)ether		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Bis(2-chloroisopropyl)ether		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Bis(2-ethylhexyl)phthalate	6	3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Butylbenzylphthalate		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Caprolactam		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-CW-22D**		**HAV-LTR-CW-22S**		**HAV-LTR-DUP01**		**HAV-LTR-MW-1**		**HAV-LTR-MW-2**		**HAV-LTR-MW-21D**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**					**HAV-LTR-CW-22S**							
Carbazole		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Chrysene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Di-n-butylphthalate		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Di-n-octylphthalate		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Dibenz(a,h)anthracene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Dibenzofuran	4	3	U	2.8	U	2.8	U	2.8	U	2 8	U	0.81	J
Diethylphthalate		0.75	J	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Dimethylphthalate		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Fluoranthene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Fluorene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	2.1	
Hexachlorobenzene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Hexachlorobutadiene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Hexachlorocyclopentadiene		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Hexachloroethane		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Indeno(1,2,3-cd)pyrene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Isophorone		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Mp-cresol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
N-Nitroso-di-n-propylamine		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
N-Nitrosodiphenylamine		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Naphthalene	3	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Nitrobenzene		3	U	2.8	U	2.8	U	2.8	U	2 8	U	3	U
Pentachlorophenol	1	15.8	U	15	U	2.3	J	15	U	14 9	U	496	
Phenanthrene	41	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
Phenol		7.9	U	7.5	U	7.5	U	7.5	U	7.4	U	8	U
Pyrene		1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U	0 2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U	1	U	2.1	
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U	320	U	320	U

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		CTR Wells											
Sample ID:	**Remedial**	**HAV-LTR-CW-22D**		**HAV-LTR-CW-22S**		**HAV-LTR-DUP01**		**HAV-LTR-MW-1**		**HAV-LTR-MW-2**		**HAV-LTR-MW-21D**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**					**HAV-LTR-CW-22S**							
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Benzene	5	1	U	1	U	1	U	1	U	1	U	1.4	
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		0.67	J	0.64	J	1	U	0.42	J	0.48	J	0.46	J
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		0.42	J	0 37	J	0.35	J	0 87	J	0.64	J	1	U
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	1	U	1	U	1	U	1	U	1	U	0.44	J
Freon 113		1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene		1	U	1	U	1	U	1	U	1	U	1.2	
Methyl Acetate		2	U	2	U	2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U	1	U	1	U
Methyl T-butyl Ether		0.45	J	0 59	J	0.54	J	1	U	1	U	1.8	
Methylene Chloride		1	U	1	U	1	U	1	U	1	U	1	U
Mp-xylene	10000	2	U	2	U	2	U	2	U	2	U	2	U
O-xylene	10000	1	U	1	U	1	U	1	U	1	U	1.6	
Styrene		1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1000	0.43	J	1	U	1	U	1	U	1	U	3.4	
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1.1	
Trichlorofluoromethane		1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U
HERBICIDES													
2,4,5-T		NA		NA		NA		NA		NA		NA	
2,4,5-TP		NA		NA		NA		NA		NA		NA	
2,4-D		NA		NA		NA		NA		NA		NA	
2,4-DB		NA		NA		NA		NA		NA		NA	
Dalapon		NA		NA		NA		NA		NA		NA	
Dicamba		NA		NA		NA		NA		NA		NA	
Dichloroprop		NA		NA		NA		NA		NA		NA	

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		CTR Wells					
Sample ID:	**Remedial**	**HAV-LTR-CW-22D**	**HAV-LTR-CW-22S**	**HAV-LTR-DUP01**	**HAV-LTR-MW-1**	**HAV-LTR-MW-2**	**HAV-LTR-MW-21D**
Sample Date:	**Goal**	**7/1/2015**	**7/1/2015**	**7/1/2015**	**7/1/2015**	**7/1/2015**	**7/1/2015**
Duplicate of:	**Objective**			**HAV-LTR-CW-22S**			
Dinoseb		NA	NA	NA	NA	NA	NA
MCPA		NA	NA	NA	NA	NA	NA
MCPP		NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	NA	NA	NA	NA	NA	NA

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells				QC Blanks			
Sample ID:	**Remedial**	**HAV-LTR-HAV-05**		**HAV-LTR-HAV-07**		**HAV-LTR-FB**		**HAV-LTR-TB**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**								
SEMIVOLATILES	**ug/L**	**ug/L**		**ug/L**		**ug/L**			
1,2,4,5-Tetrachlorobenzene		2.9	U	2.8	U	2.9	U	NA	
1,4-Dioxane		2.9	U	2.8	U	2.9	U	NA	
2,3,4,6-Tetrachlorophenol		135		7.4	U	7.7	U	NA	
2,4,5-Trichlorophenol		8.2		7.4	U	7.7	U	NA	
2,4,6-Trichlorophenol		6.3	J	7.4	U	7.7	U	NA	
2,4-Dichlorophenol		1.5	J	7.4	U	7.7	U	NA	
2,4-Dimethylphenol		7.6	U	7.4	U	7.7	U	NA	
2,4-Dinitrophenol		15.2	U	14.9	U	15.3	U	NA	
2,4-Dinitrotoluene		2.9	U	2.8	U	2.9	U	NA	
2,6-Dinitrotoluene		2.9	U	2.8	U	2.9	U	NA	
2-Chloronaphthalene		2.9	U	2.8	U	2.9	U	NA	
2-Chlorophenol		7.6	U	7.4	U	7.7	U	NA	
2-Methyl-4,6-dinitrophenol	1.7	7.6	U	7.4	U	7.7	U	NA	
2-Methylnaphthalene	2	23.9		1.4	U	1.4	U	NA	
2-Methylphenol		7.6	U	7.4	U	7.7	U	NA	
2-Nitroaniline		2.9	U	2.8	U	2.9	U	NA	
2-Nitrophenol		7.6	U	7.4	U	7.7	U	NA	
3,3-Dichlorobenzidine		15.2	U	14.9	U	15.3	U	NA	
3-Nitroaniline		2.9	U	2.8	U	2.9	U	NA	
4-Bromophenyl Phenyl Ether		2.9	U	2.8	U	2.9	U	NA	
4-Chloro-3-methylphenol		7.6	U	7.4	U	7.7	U	NA	
4-Chloroaniline		2.9	U	2.8	U	2.9	U	NA	
4-Chlorophenyl-phenylether		2.9	U	2.8	U	2.9	U	NA	
4-Nitroaniline		2.9	U	2.8	U	2.9	U	NA	
4-Nitrophenol		7.6	U	7.4	U	7.7	U	NA	
Acenaphthene		5.9		1.4	U	1.4	U	NA	
Acenaphthylene		0.9	J	1.4	U	1.4	U	NA	
Acetophenone		7.6	U	7.4	U	7.7	U	NA	
Anthracene		0.98	J	1.4	U	1.4	U	NA	
Atrazine		2.9	U	2.8	U	2.9	U	NA	
Benz(a)anthracene		1.4	U	1.4	U	1.4	U	NA	
Benzaldehyde		7.6	U	7.4	U	7.7	U	NA	
Benzo(a)pyrene	0.2	1.4	U	1.4	U	1.4	U	NA	
Benzo(b)fluoranthene		1.4	U	1.4	U	1.4	U	NA	
Benzo(g,h,i)perylene		1.4	U	1.4	U	1.4	U	NA	
Benzo(k)fluoranthene		1.4	U	1.4	U	1.4	U	NA	
Biphenyl		4.1	J	7.4	U	7.7	U	NA	
Bis(2-chloroethoxy)methane		2.9	U	2.8	U	2.9	U	NA	
Bis(2-chloroethyl)ether		2.9	U	2.8	U	2.9	U	NA	
Bis(2-chloroisopropyl)ether		2.9	U	2.8	U	2.9	U	NA	
Bis(2-ethylhexyl)phthalate	6	2.9	U	2.8	U	2.9	U	NA	
Butylbenzylphthalate		2.9	U	2.8	U	2.9	U	NA	
Caprolactam		7.6	U	7.4	U	7.7	U	NA	

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells				QC Blanks			
Sample ID:	**Remedial**	**HAV-LTR-HAV-05**		**HAV-LTR-HAV-07**		**HAV-LTR-FB**		**HAV-LTR-TB**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**								
Carbazole		2.9	U	2.8	U	2.9	U	NA	
Chrysene		1.4	U	1.4	U	1.4	U	NA	
Di-n-butylphthalate		2.9	U	2.8	U	2.9	U	NA	
Di-n-octylphthalate		7.6	U	7.4	U	7.7	U	NA	
Dibenz(a,h)anthracene		1.4	U	1.4	U	1.4	U	NA	
Dibenzofuran	4	3.4		2.8	U	2.9	U	NA	
Diethylphthalate		7.6	U	7.4	U	7.7	U	NA	
Dimethylphthalate		7.6	U	7.4	U	7.7	U	NA	
Fluoranthene		0.34	J	1.4	U	1.4	U	NA	
Fluorene		8.1		1.4	U	1.4	U	NA	
Hexachlorobenzene		2.9	U	2.8	U	2.9	U	NA	
Hexachlorobutadiene		2.9	U	2.8	U	2.9	U	NA	
Hexachlorocyclopentadiene		7.6	U	7.4	U	7.7	U	NA	
Hexachloroethane		2.9	U	2.8	U	2.9	U	NA	
Indeno(1,2,3-cd)pyrene		1.4	U	1.4	U	1.4	U	NA	
Isophorone		2.9	U	2.8	U	2.9	U	NA	
Mp-cresol		7.6	U	7.4	U	7.7	U	NA	
N-Nitroso-di-n-propylamine		2.9	U	2.8	U	2.9	U	NA	
N-Nitrosodiphenylamine		2.9	U	2.8	U	2.9	U	NA	
Naphthalene	3	159		1.4	U	1.4	U	NA	
Nitrobenzene		2.9	U	2.8	U	2.9	U	NA	
Pentachlorophenol	1	2150		14.9	U	15.3	U	NA	
Phenanthrene	41	5.3		1.4	U	1.4	U	NA	
Phenol		7.6	U	7.4	U	7.7	U	NA	
Pyrene		0.6	J	1.4	U	1.4	U	NA	
VOLATILES		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane		0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene		2	U	2	U	2	U	2	U
1,2,4-Trichlorobenzene		2	U	2	U	2	U	2	U
1,2-Dibromo-3-chloropropane		7	U	7	U	7	U	7	U
1,2-Dibromoethane		1	U	1	U	1	U	1	U
1,2-Dichlorobenzene		1	U	1	U	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)		1	U	1	U	1	U	1	U
1,2-Dichloroethene (trans)		1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U
1,3-Dichlorobenzene		1	U	1	U	1	U	1	U
1,4-Dichlorobenzene		1	U	1	U	1	U	1	U
1,4-Dioxane		320	U	320	U	320	U	320	U

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells				QC Blanks			
Sample ID:	**Remedial**	**HAV-LTR-HAV-05**		**HAV-LTR-HAV-07**		**HAV-LTR-FB**		**HAV-LTR-TB**	
Sample Date:	**Goal**	**7/1/2015**		**7/1/2015**		**7/1/2015**		**7/1/2015**	
Duplicate of:	**Objective**								
2-Butanone		10	U	10	U	10	U	10	U
2-Hexanone		5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U
Acetone		4.8	J	10	U	10	U	10	U
Benzene	5	5.8		1	U	1	U	1	U
Bromochloromethane		1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U
Bromomethane		0.43	J	0.42	J	0.46	J	0.44	J
Carbon Disulfide		1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U
Chlorobenzene		1	U	1	U	0.26	J	1	U
Chloroethane		1	U	1	U	1	U	1	U
Chloroform		2		0.55	J	1	U	1	U
Chloromethane		1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U
Cyclohexane		0.99	J	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U
Dichlorodifluoromethane		1	U	1	U	1	U	1	U
Ethylbenzene	700	20.7		1	U	1	U	1	U
Freon 113		1	U	1	U	1	U	1	U
Isopropylbenzene		10.1		1	U	1	U	1	U
Methyl Acetate		2	U	2	U	2	U	2	U
Methyl Cyclohexane		1	U	1	U	1	U	1	U
Methyl T-butyl Ether		1	U	1	U	1	U	1	U
Methylene Chloride		1	U	1	U	1	U	1	U
Mp-xylene	10000	11		2	U	2	U	2	U
O-xylene	10000	51.9		1	U	1	U	1	U
Styrene		0.43	J	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U
Toluene	1000	0.87	J	1	U	1	U	1	U
trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U
Trichloroethene	5	2.1		1	U	1	U	1	U
Trichlorofluoromethane		1	U	1	U	1	U	1	U
Vinyl Chloride	5	1	U	1	U	1	U	1	U
HERBICIDES									
2,4,5-T		NA		NA		NA		NA	
2,4,5-TP		NA		NA		NA		NA	
2,4-D		NA		NA		NA		NA	
2,4-DB		NA		NA		NA		NA	
Dalapon		NA		NA		NA		NA	
Dicamba		NA		NA		NA		NA	
Dichloroprop		NA		NA		NA		NA	

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

		Other Wells		QC Blanks	
Sample ID:	**Remedial**	**HAV-LTR-HAV-05**	**HAV-LTR-HAV-07**	**HAV-LTR-FB**	**HAV-LTR-TB**
Sample Date:	**Goal**	**7/1/2015**	**7/1/2015**	**7/1/2015**	**7/1/2015**
Duplicate of:	**Objective**				
Dinoseb		NA	NA	NA	NA
MCPA		NA	NA	NA	NA
MCPP		NA	NA	NA	NA
Pentachlorophenol	1	NA	NA	NA	NA

DATA SUMMARY OF ANALYTICAL RESULTS
JUNE/JULY 2015
HAVERTOWN PCP SITE, HAVERTOWN, PENNSYLVANIA

Data Qualifiers:

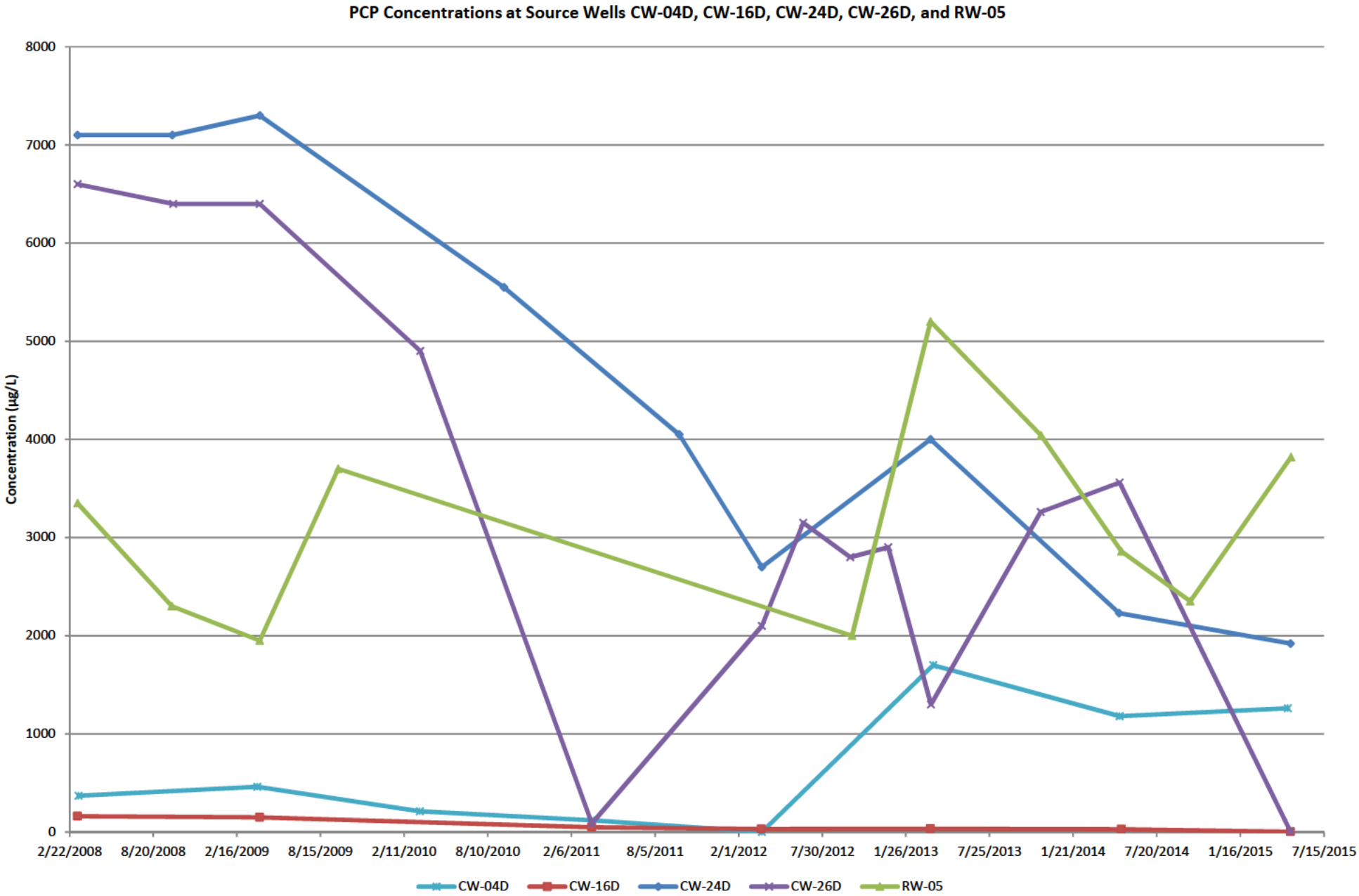
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

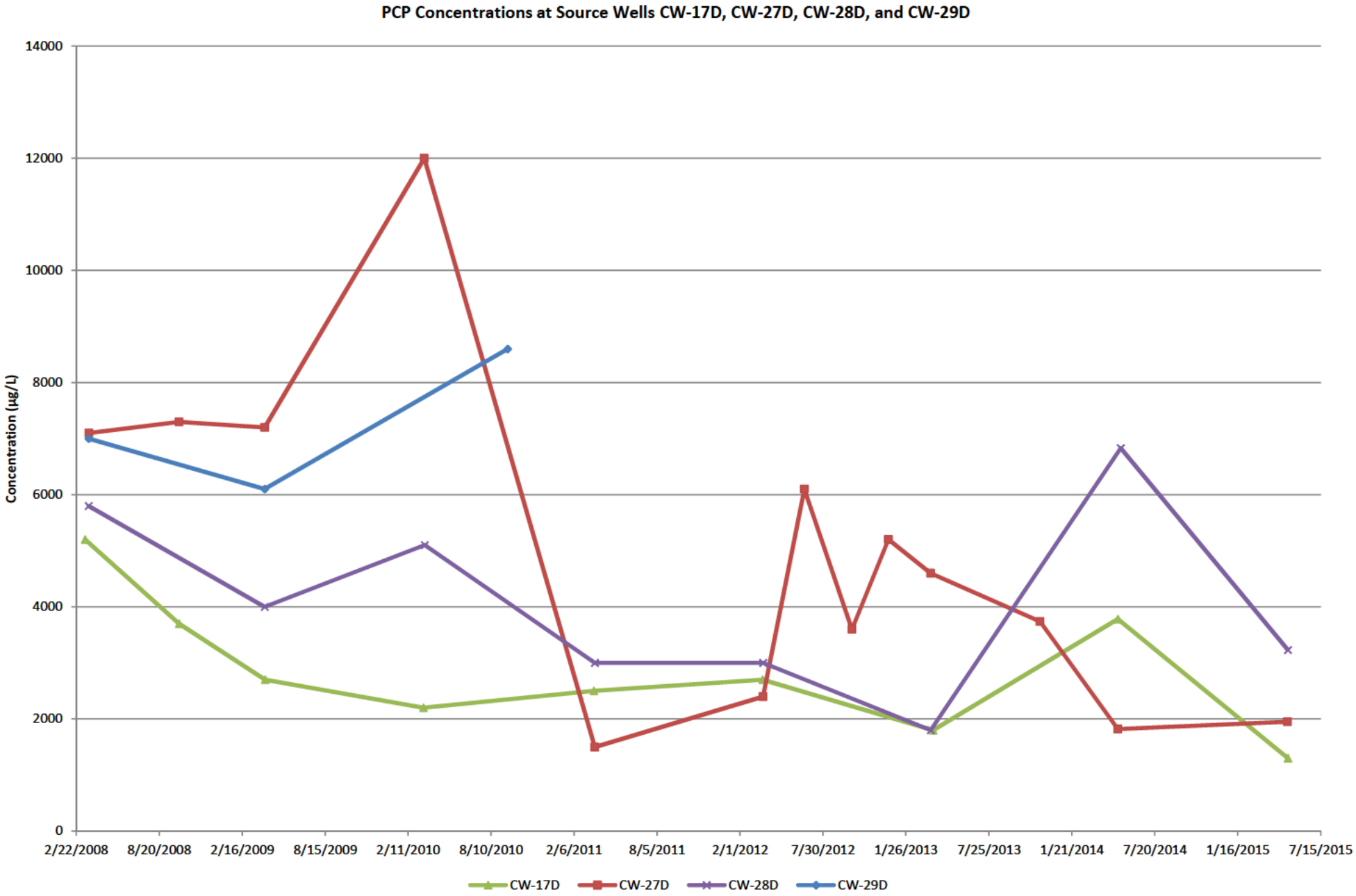
U -- Value is a non-detected result as reported by the laboratory.

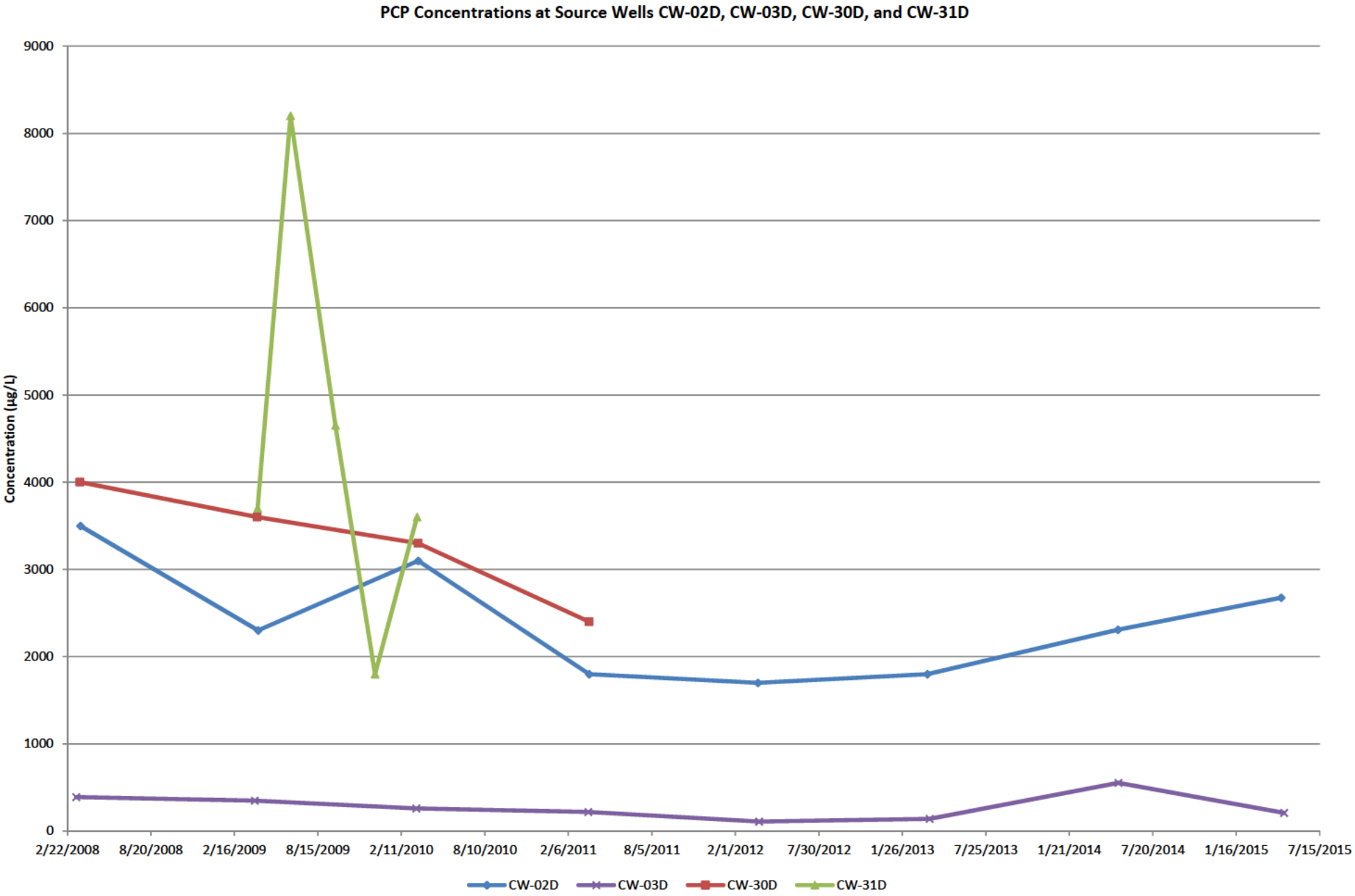
NA -- No result is available/applicable for this parameter in this sample.

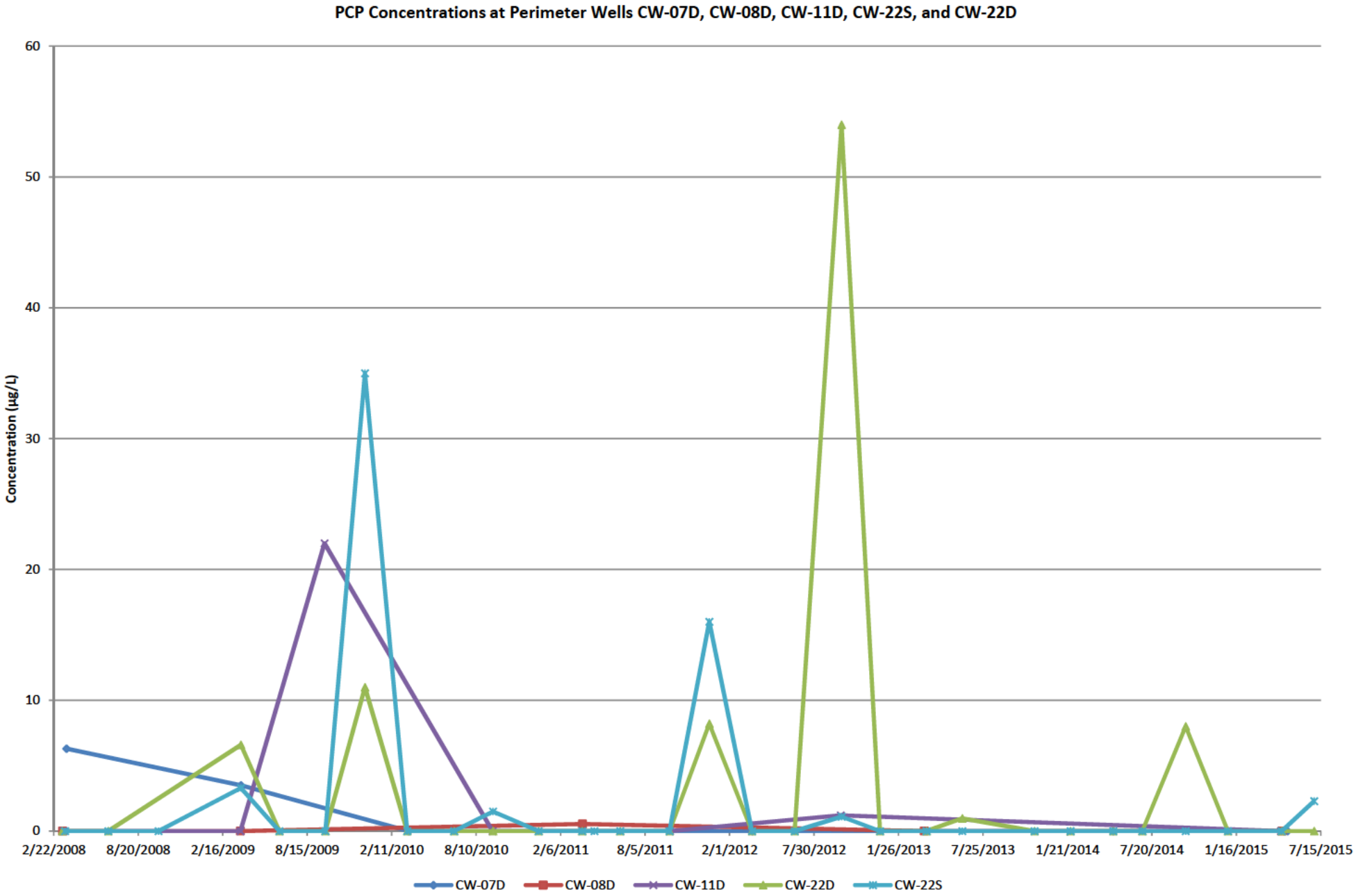
APPENDIX B

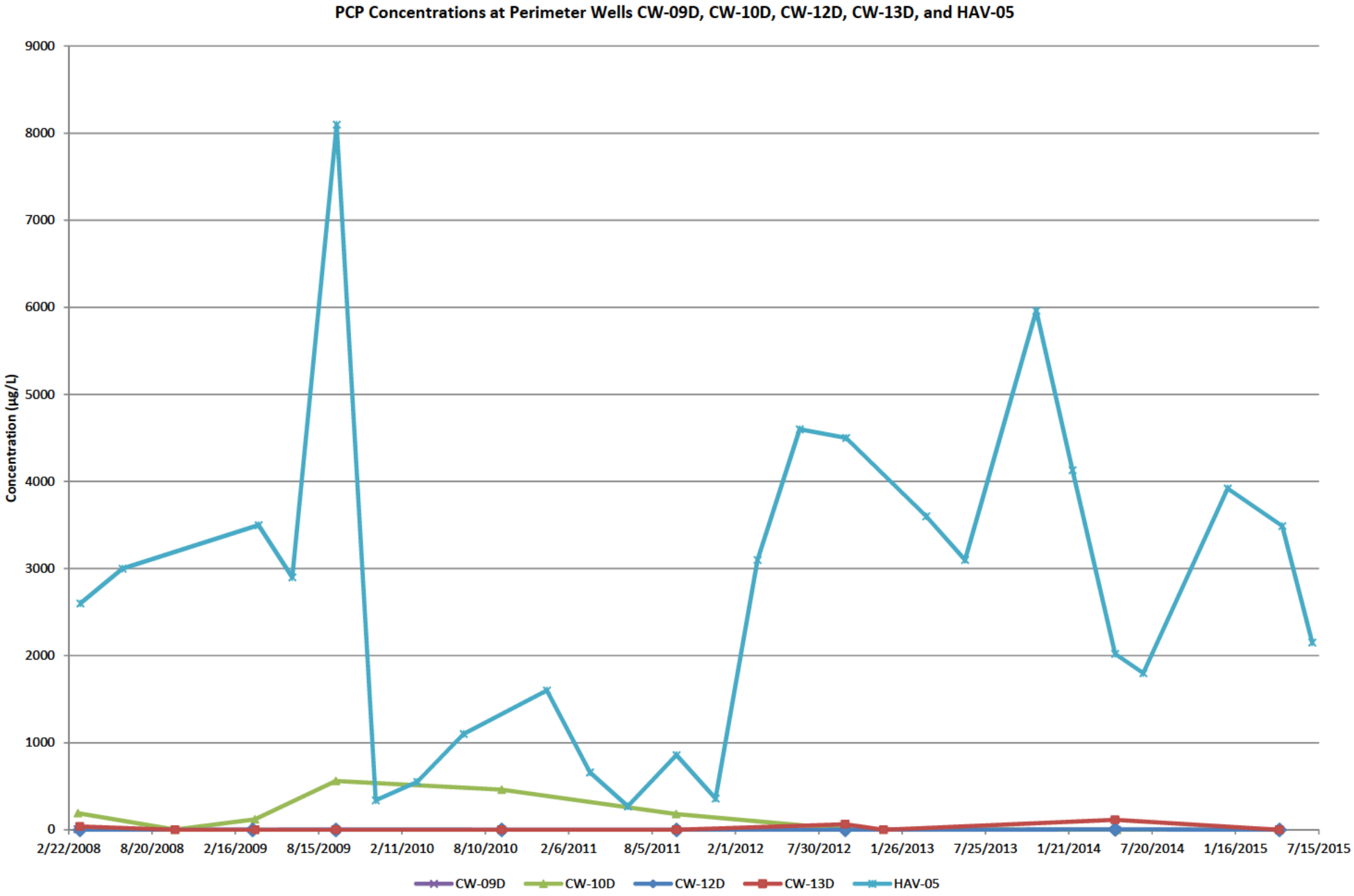
GRAPHS OF HISTORICAL CONTAMINANT CONCENTRATIONS IN MONITORING WELLS

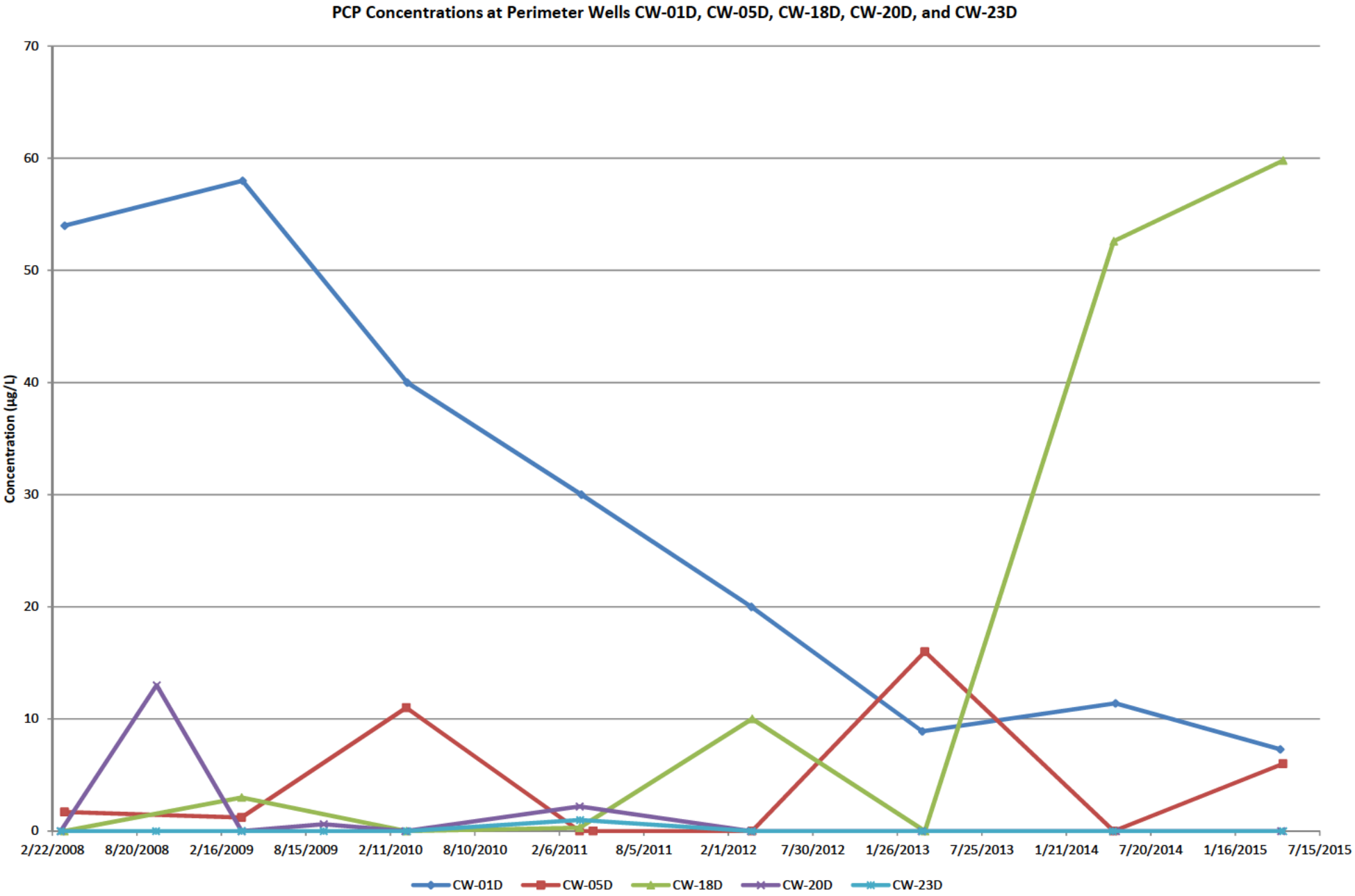

PCP Concentrations at Source Wells CW-04D, CW-16D, CW-24D, CW-26D, and RW-05
Concentration (µg/L)
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-04D
CW-16D
CW-24D
CW-26D
RW-05

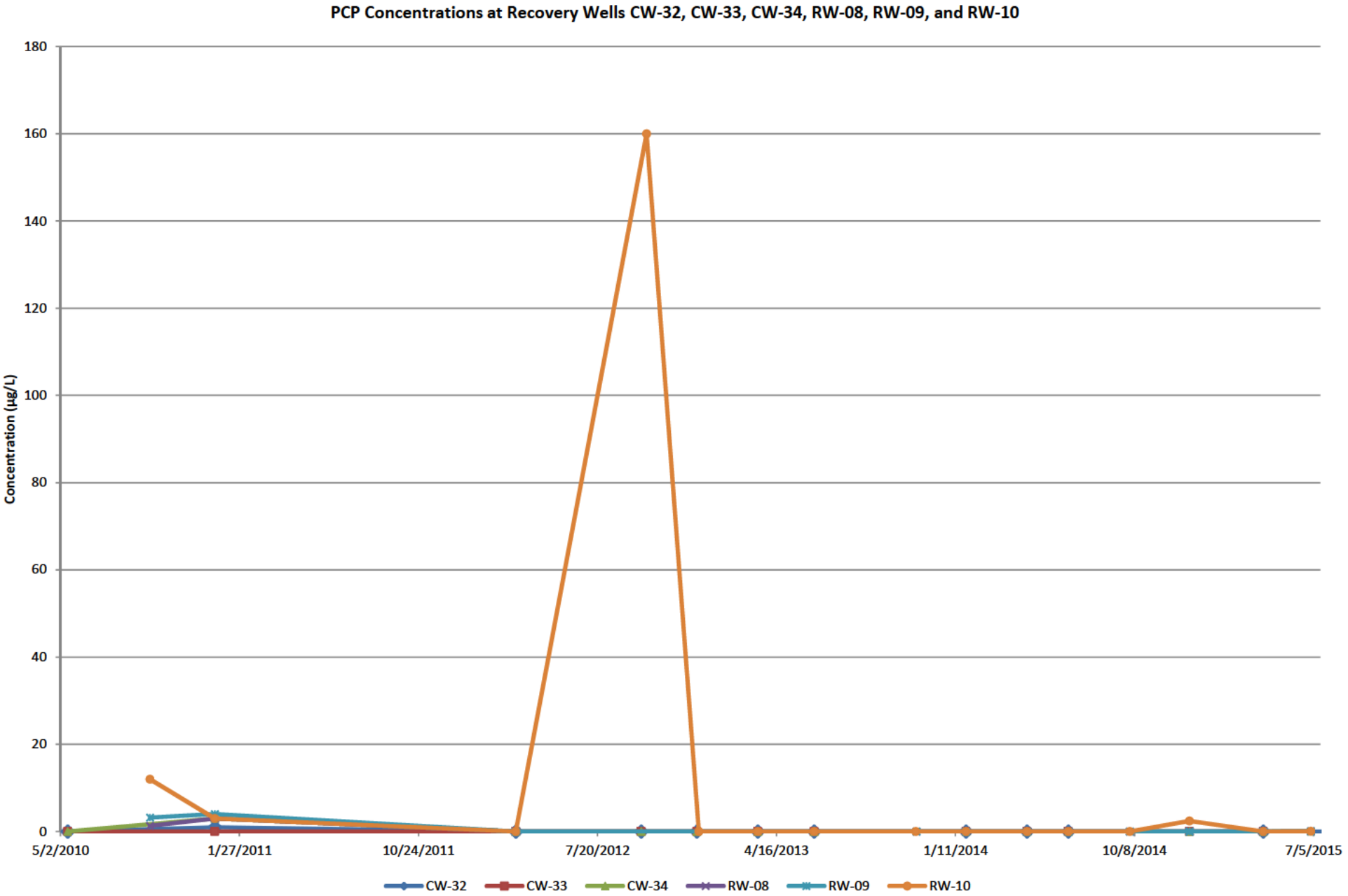

PCP Concentrations at Source Wells CW-17D, CW-27D, CW-28D, and CW-29D
Concentration (µg/L)
14000
12000
10000
8000
6000
4000
2000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-17D
CW-27D
CW-28D
CW-29D

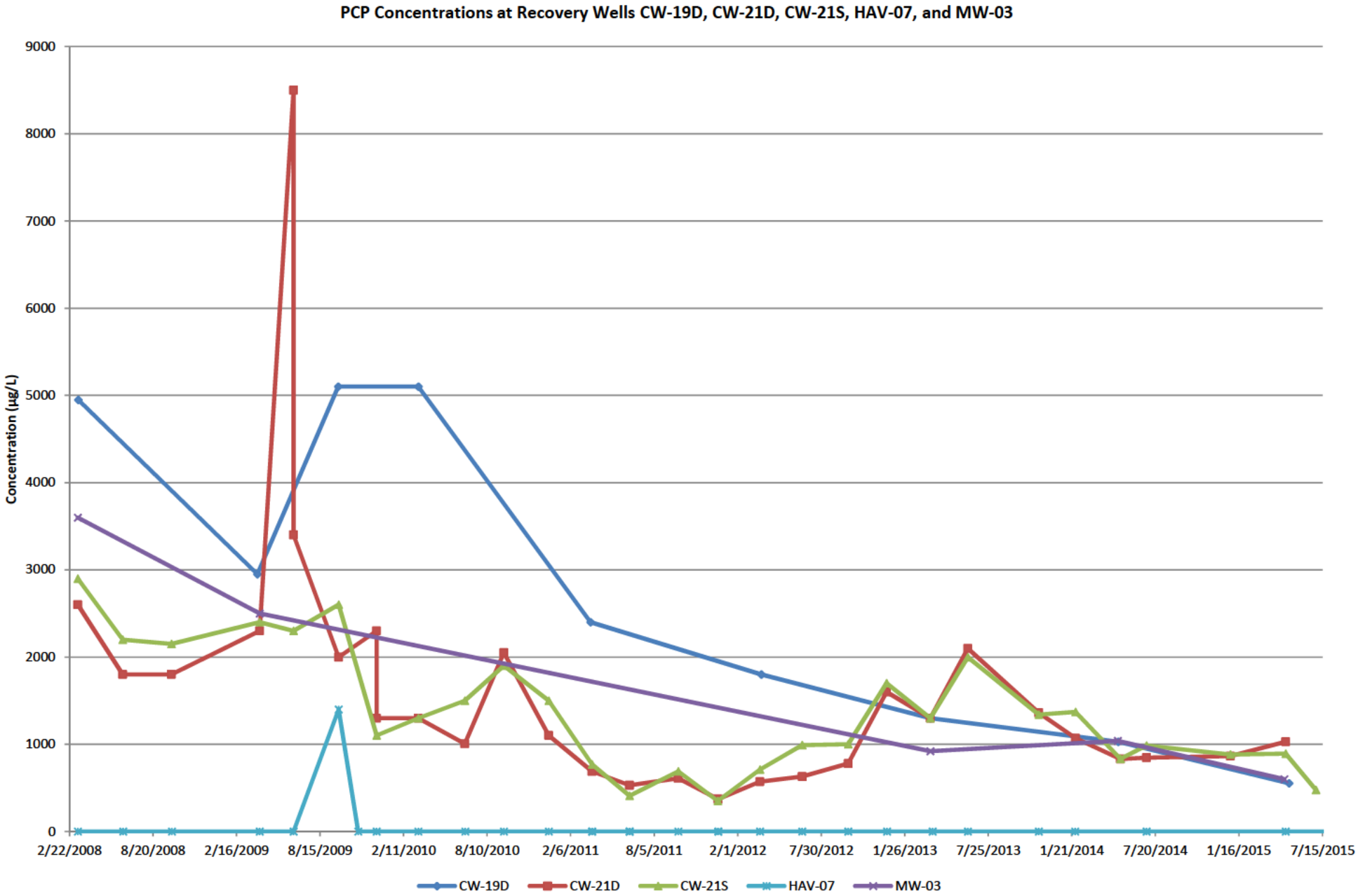

PCP Concentrations at Source Wells CW-02D, CW-03D, CW-30D, and CW-31D
Concentration (µg/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-02D
CW-03D
CW-30D
CW-31D

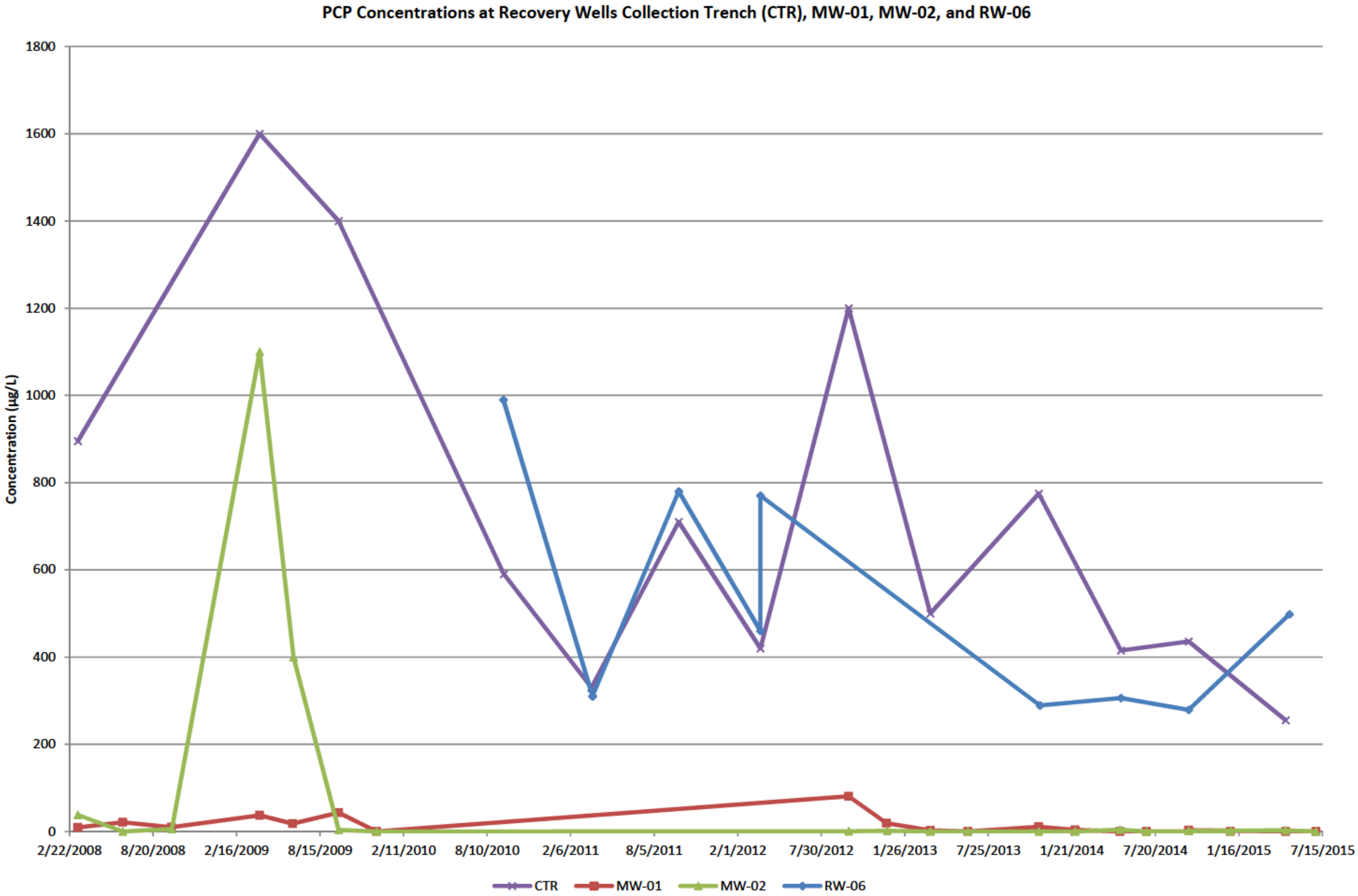

PCP Concentrations at Perimeter Wells CW-07D, CW-08D, CW-11D, CW-22S, and CW-22D
Concentration (µg/L)
60
50
40
30
20
10
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-07D
CW-08D
CW-11D
CW-22D
CW-22S

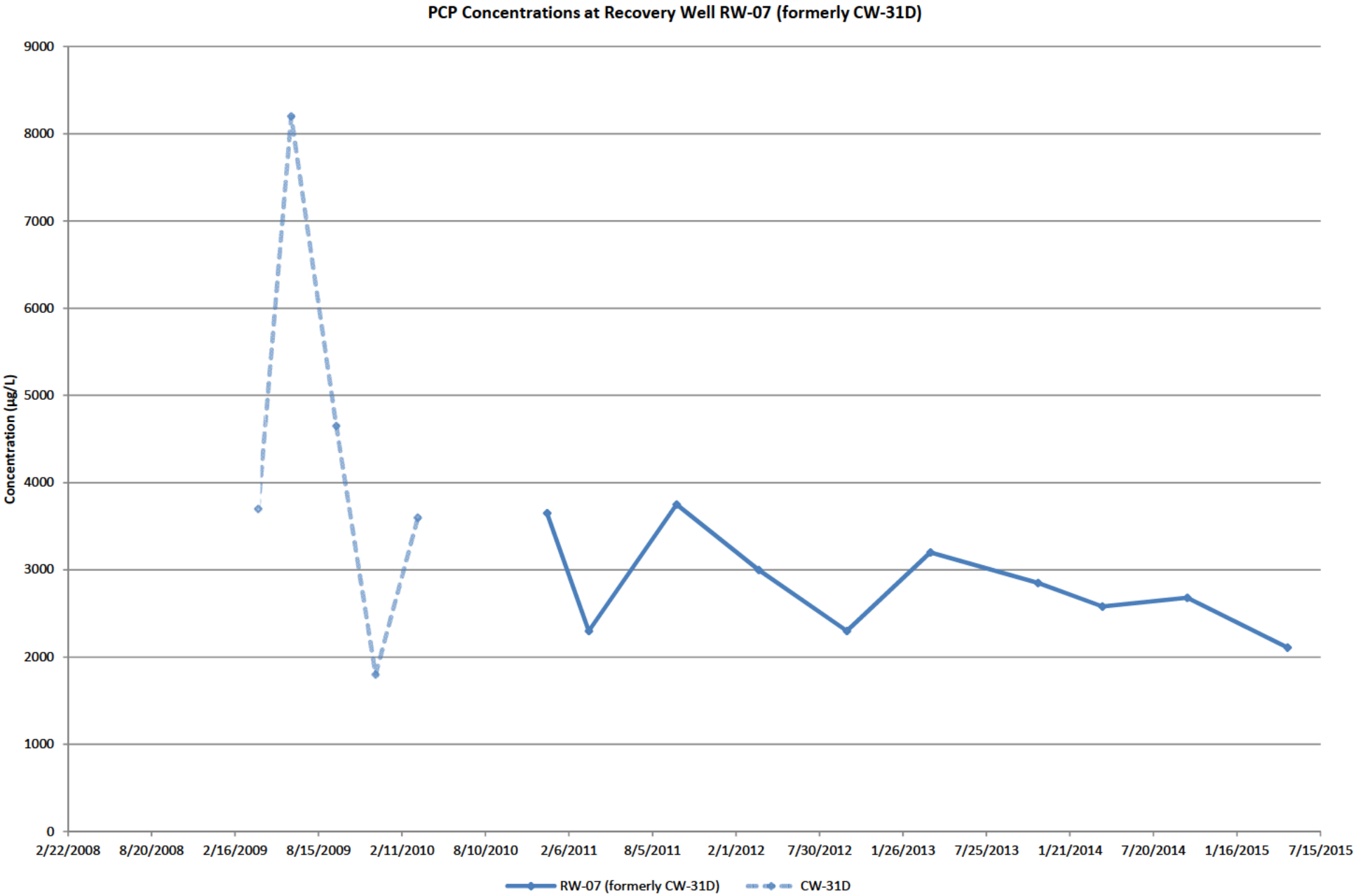

PCP Concentrations at Perimeter Wells CW-09D, CW-10D, CW-12D, CW-13D, and HAV-05
Concentration (µg/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-09D
CW-10D
CW-12D
CW-13D
HAV-05

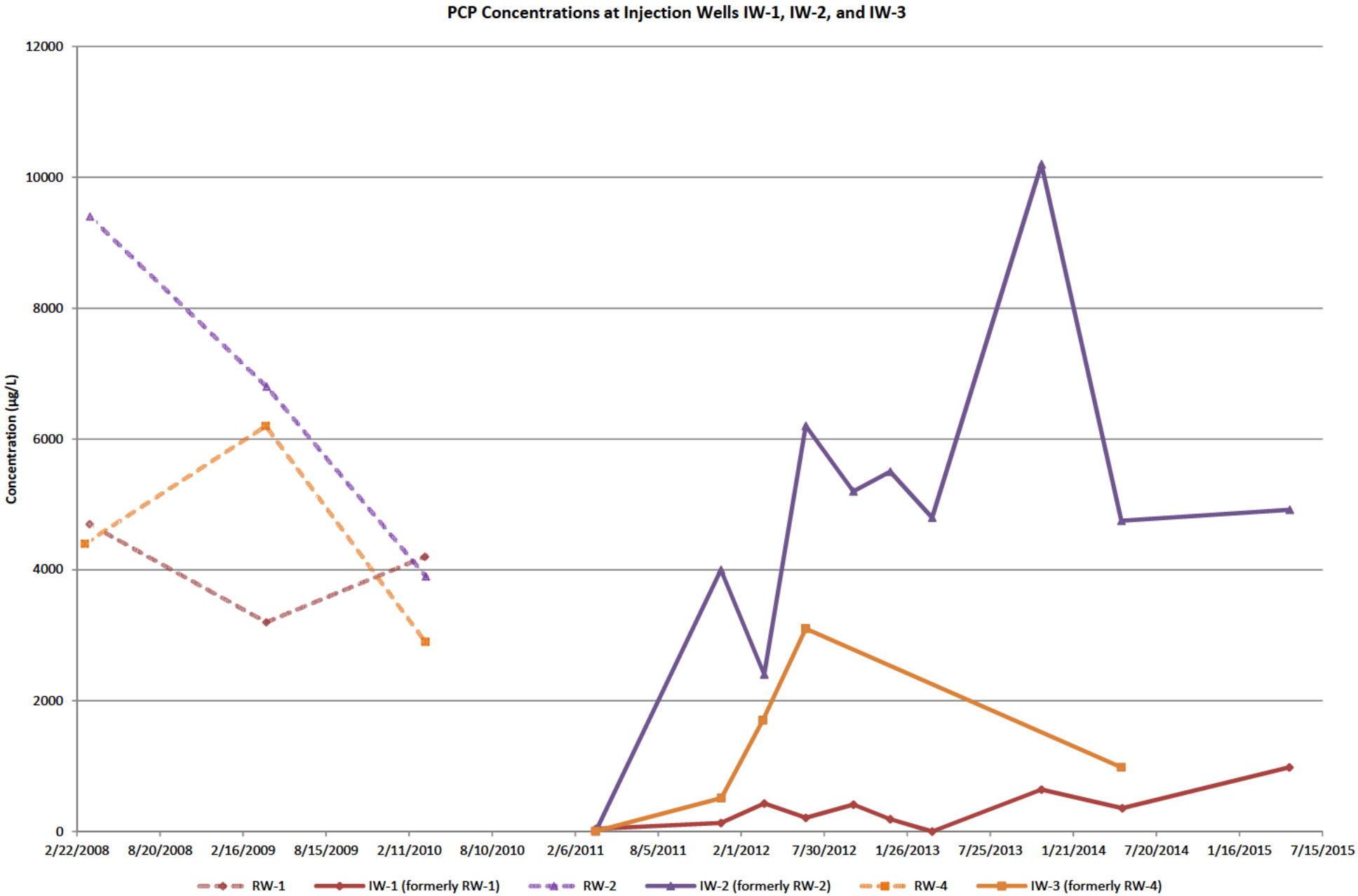

PCP Concentrations at Perimeter Wells CW-01D, CW-05D, CW-18D, CW-20D, and CW-23D
Concentration (µg/L)
70
60
50
40
30
20
10
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-01D
CW-05D
CW-18D
CW-20D
CW-23D

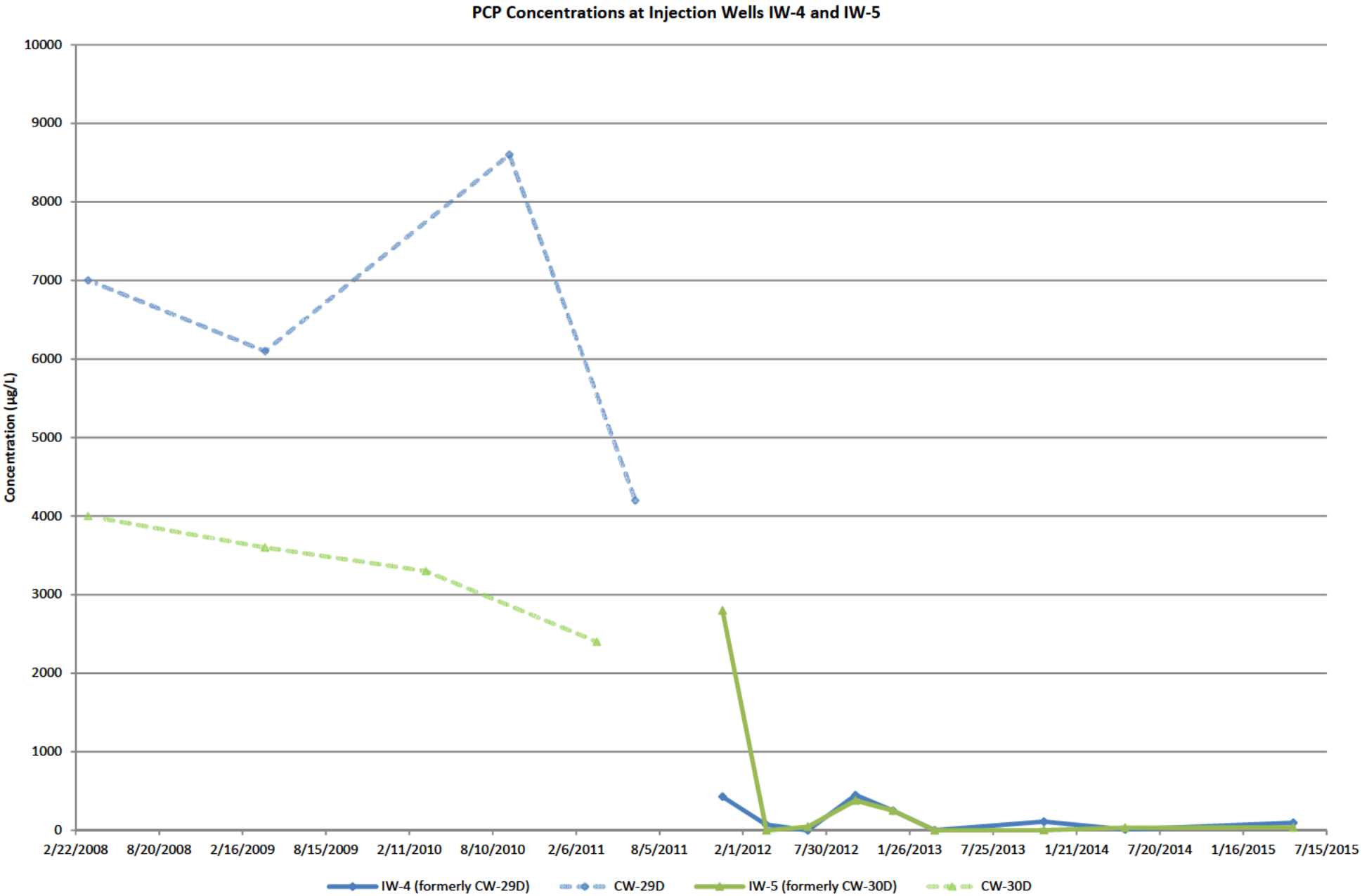

PCP Concentrations at Recovery Wells CW-32, CW-33, CW-34, RW-08, RW-09, and RW-10
Concentration (µg/L)
180
160
140
120
100
80
60
40
20
0
5/2/2010
1/27/2011
10/24/2011
7/20/2012
4/16/2013
1/11/2014
10/8/2014
7/5/2015
CW-32
CW-33
CW-34
RW-08
RW-09
RW-10


PCP Concentrations at Recovery Wells CW-19D, CW-21D, CW-21S, HAV-07, and MW-03
Concentration (µg/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CW-19D
CW-21D
CW-21S
HAV-07
MW-03


PCP Concentrations at Recovery Wells Collection Trench (CTR), MW-01, MW-02, and RW-06
Concentration (µg/L)
1800
1600
1400
1200
1000
800
600
400
200
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
CTR
MW-01
MW-02
RW-06


PCP Concentrations at Recovery Well RW-07 (formerly CW-31D)
Concentration (µg/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
RW-07 (formerly CW-31D)
CW-31D


PCP Concentrations at Injection Wells IW-1, IW-2, and IW-3
Concentration (µg/L)
12000
10000
8000
6000
4000
2000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
RW-1
IW-1 (formerly RW-1)
RW-2
IW-2 (formerly RW-2)
RW-4
IW-3 (formerly RW-4)


PCP Concentrations at Injection Wells IW-4 and IW-5
Concentration (µg/L)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2/22/2008
8/20/2008
2/16/2009
8/15/2009
2/11/2010
8/10/2010
2/6/2011
8/5/2011
2/1/2012
7/30/2012
1/26/2013
7/25/2013
1/21/2014
7/20/2014
1/16/2015
7/15/2015
IW-4 (formerly CW-29D)
CW-29D
IW-5 (formerly CW-30D)
CW-30D