

September 22, 2014

Mr. F. Lee Mangan
Borough Manager
Worcester Township
1721 Valley Forge Road
PO Box 767
Worcester, PA 19490

**RE: Phase II Soil and Groundwater Investigation Summary
US Army Reserve Center (PA139)
1625 Berks Road, Worcester Township
Norristown, Pennsylvania**

Dear Mr. Mangan:

Environmental Standards, Inc. (Environmental Standards) has completed a Phase II environmental investigation associated with the US Army Reserve Center (PA139) located in Worcester Township, Pennsylvania. This work was completed based on the results of our Phase I Site investigation report, the approved Worcester Township (Township) Scope-of-Work dated May 7, 2014, and subsequent project correspondence among you, your counsel, and the Environmental Standards project team.

Our Phase II activities included surficial and subsurface soil sampling, the installation of four groundwater monitoring wells at the Site, and two rounds of groundwater characterization sampling.

Background

As presented in the April 17, 2014, *Phase I Environmental Site Assessment Report North Penn United States Army Reserve Center* (Phase I ESA) prepared by Environmental Standards on behalf of Worcester Township, 14 areas of concern (AOCs) warranting additional investigation were identified at the former North Penn US Army Reserve Center (PA139) located at 1625 Berks Road, Worcester Township, Norristown, Pennsylvania (Figure1; Site or Property).

The AOCs identified during the 2014 Phase I ESA are identified on the following table. These AOCs were confirmed through discussions with the Township and your legal counsel, and subsequently, Environmental Standards developed a Phase II Scope of Work on the basis of various project team discussions.

Area of Concern	Description
Soil Investigation	
B	On-site spoils area
E	No. 2 fuel oil spill next to potable well
O9	UST pump house
G	Oil-like substance in drainage ditch
T	Second drainage ditch located directly in front of admin. building
K	Oil-water separator (OWS) and organization maintenance shop (OMS) building
L	Nike missile launch area/fire training burn site
M	Nike missile base - building area
O1	Former 5,000-gallon diesel underground storage tank (UST)
U	Vanadium in on-site soils above the PA DEP direct contact soil standards
Groundwater Investigation	
A	Transicoil/North Penn Superfund Site (upgradient of the Site)
H	Former Nike missile silos
J	Groundwater supply well
N	Property-wide groundwater impacts

Initially, Environmental Standards submitted a combined Phase I and Phase II Soil and Groundwater Investigation Proposal on November 13, 2013. Based on the Phase I ESA findings, however, Environmental Standards submitted to Worcester Township, and you approved on May 7, 2014, a Revised Phase II Soil and Groundwater Investigation Proposal and Cost Estimate (Proposal) to assess current Site soil and groundwater quality.

Site Investigation Summary

The focus of the Phase II Site investigation was to further evaluate the Phase I findings using intrusive environmental sampling techniques. The investigation included field screening, surficial and subsurface soil sampling, installation of four groundwater monitoring wells, and two rounds of groundwater quality characterization monitoring.

The soil and groundwater investigation data were compared to Pennsylvania Department of Environmental Protection (PA DEP) Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) as established under Pennsylvania's Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2). Based on an evaluation of the soil and groundwater sample analytical results, concentrations of several regulated substances were identified in soil at concentrations above the current PA DEP Act 2 residential direct contact MSCs. These substances include benzo(a)pyrene, benzo(b)fluoranthene, and arsenic. Vanadium concentrations were also identified above the proposed revised PA DEP Act 2 residential direct contact MSC in multiple soil samples. In addition, a lead concentration slightly above the current PA DEP Act 2 residential, used aquifer MSC was reported in the water sample collected from the potable well in July 2014. Results of a reanalysis of this same groundwater sample, however, were below the residential, used aquifer MSC. Regulated substances were not identified in groundwater samples collected from the Site monitoring wells

during the June or July 2014 sampling events. Based on the analytical results of the Phase II Site investigation, very limited soil impacts were identified when analytical results are compared to the current PA DEP SHS Act 2 MSCs. In general, Site groundwater is not impacted with the possible exception of the potable well. Certain limited additional characterization and modest soil remediation work, however, may be warranted at the Property.

The remainder of this letter report presents a summary of the investigation activities, a detailed evaluation of the resulting data, a comparison to PA DEP MSCs, conclusions, and path-forward recommendations.

Focused Phase II Soil Investigation

On May 22, 2014, Environmental Standards utilized a properly decontaminated, 2-inch, stainless steel hand auger to collect 7 surface soil samples from three AOCs. On May 27, 2014, Environmental Standards oversaw the advancement of 15 direct-push soil borings in five AOCs and collected 22 soil samples for laboratory analysis. A Geoprobe Systems® 7730DT direct-push drill rig operated by Allied Well Drilling (a Pennsylvania-licensed drilling company—license number 4549); was contracted to advance the borings and collect the soil cores. Recovered soils were screened for volatile organic compounds (VOCs) with a portable MiniRaE 3000 photoionization detector (PID) and classified in the field by an Environmental Standards Geoscientist according to the Unified Soils Classification System (USCS). Subsurface utility lines were cleared by requesting a Pennsylvania One-Call® utility mark-out and clearance prior to conducting the soil boring program. Twenty-nine soil samples were collected and submitted to Pace Analytical Services, Inc. (Pace; PA DEP Laboratory Certification ID 65-00282) for analysis. Soil analytical data reports are included in Appendix A-1.

The locations of the AOCs are presented on Figure 2 and soil sampling locations are presented on Figure 3. Soil Boring Logs are presented in Appendix B. Additional information regarding the AOCs is available in the April 17, 2014, Phase I ESA report.

AOC B - On-Site Spoils Area

Sewage treatment plant spoils were reportedly disposed of at the Site (AOC B). In 2001, CH2M Hill, Inc. sampled the spoils area and no exceedances of PA DEP MSCs were reported. Based on Environmental Standards' review of the provided documents, however, it appears that soil sampling was not conducted in the actual spoils placement area, but rather around the sand mound area associated with the sewage treatment system (*i.e.*, the material of highest environmental risk was not characterized).

The area of the sewage treatment plant spoils was identified by Environmental Standards during Phase I document reviews to the west of the current sand mound across the access road. In order to evaluate AOC B, Environmental Standards collected three surface soil samples in this area (B SS01 @ 6"; B SS02 @ 6"; and B SS03 @ 6") to evaluate surficial soil quality. Samples were analyzed for the US Environmental Protection Agency's (US EPA's) Priority Pollutant List (PPL) VOCs, PPL semivolatile organic compounds (SVOCs), and PPL metals plus barium and vanadium.

AOC E and AOC O9 - No. 2 Fuel Oil Spill Next to Potable Well/UST Pump House

A No. 2 fuel oil spill reportedly occurred next to the potable well house in 1992 (AOC E). This spill was likely due to an overflow of the 275-gallon aboveground storage tank (AST) which had no secondary containment. There were no records of a soil investigation in the documents reviewed by Environmental Standards. The historic document review also indicated that a heating oil UST was located adjacent to the potable well house, however, no further information regarding this tank was identified (AOC O9). Soil samples were analyzed for the PA DEP No. 2 fuel oil short list of constituents. In addition, sample O 09 SS01 @ 6" was analyzed for vanadium.

Environmental Standards collected one surficial soil sample (O 09 SS01 @ 6") in the assumed spill location and one subsurface soil sample (E SB01 @ 10') near the assumed location of the heating oil UST to evaluate soil quality.

AOC G and AOC T - Oil-Like Substance in Drainage Ditch

Wash water from the boiler room enters an exterior drainage swale via piping. A 1992 Department of the Army report documented that a heating oil spill in the boiler room was the source of the oil that was observed in this drainage ditch (AOC G). Soil was excavated and replaced with clean fill only to have the oil-like substance reappear later. In 2010, one composite soil sample was collected by Bhate Associates, which consisted of four aliquots collected from a depth of 0 to 2 feet below ground surface (bgs). The reported sample results were below PA DEP MSCs. It was also noted that the oil-water separator (OWS) may be connected to this drainage ditch. A second drainage ditch is located southwest of the AOC G drainage ditch and was not previously investigated (AOC T).

Environmental Standards collected four surface soil samples from AOC G (G-SS01 @ 3" and G-SS02 @ 3") and AOC T (T-SS01 @ 3" and T-SS02 @ 3") to evaluate potential on-going impacts from these features. Due to the unknown discharge sources to these drainage ditches, the soil samples were analyzed for the combined PA DEP petroleum product short list constituents (leaded gasoline through mineral insulating oil).

AOC K - OWS and OMS building

The grease rack and wash rack located near the OMS building drained to an underground oil-water separator (OWS) that included a sand mound (AOC K). During a June 2009 meeting between PA DEP and Stell Environmental Enterprises, both parties agreed that the service pits were encased in concrete and, therefore, did not require sampling. Additional information regarding the OWS closure status was not identified during the Phase I ESA.

Due to the likely age of the OWS and the unknown integrity of the concrete lining, Environmental Standards collected four subsurface soil samples from four soil borings (K SB01 @ 4'; K SB02 @ 4'; K SB03 @ 4'; K SB04 @ 4') around the perimeter of the OWS. Soil samples were analyzed for the combined PA DEP fuel oil and lubricating oil short list constituents and vanadium.

AOC L - Nike Missile Launch Area/Fire Training Burn Site

The Nike missile launch area was used for warhead arming, maintenance, and fueling operations. It was later used as a fire fighting training area where various materials were likely ignited for training purposes (AOC L). The historic document review detailed the collection of soil samples in 1991, 2001, and 2010; however, discrepancies regarding the specific location of this AOC were noted. It is unclear if these historical samples were collected in the appropriate locations.

Environmental Standards advanced two soil borings and collected a total of four subsurface soil samples (L SB01 @ 1.5'; L SB01 @ 8'; L SB02 @ 1.5'; L SB02 @ 7'). Two soil samples were collected from each boring. One soil sample was collected from the ground surface to 2 feet bgs interval and a second soil sampling location was selected from between 2 and 8 feet bgs (boring terminus) or refusal, whichever occurred first. Soil samples were analyzed for constituents related to both the launch area and the fire training burn site in order to verify prior findings. Soil samples were analyzed for PPL SVOCs, PPL metals plus barium and vanadium; diesel-range organics (DRO); 1,4-dioxane; and perchlorate.

AOC M - Nike Missile Base – Building Area

This area historically included buildings related to missile assembly and handling (AOC M). Handling operations may have included fueling/defueling, assembly/disassembly, and warhead arming activities. Some reports identified crushed drums and debris in this area as well as a potential UST. This mounded area was covered with overgrown grass and vegetation during the 2014 Phase I ESA Site visit. There was a large manhole observed on the inside of the berm toward the southern corner. The purpose of this manhole is unclear. It was partially overgrown and buried; therefore, Environmental Standards could not remove the lid to further investigate during Phase I activities. During the soil sampling event on May 22, 2014, Environmental Standards was able to remove the manhole. Upon removing the manhole cover it was determined that a second barrier (heavy steel plate) was in place and without mechanical equipment additional investigation was not possible.

Environmental Standards collected eight soil samples from four soil borings (M SB01 @ 1.5'; M SB01 @ 9.5'; M SB02 @ 1.5'; M SB02 @ 9.5'; M SB03 @ 1.5'; M SB03 @ 9.0'; M SB04 @ 1.5'; M SB04 @ 1.5'; M SB04 @ 9.5') to a maximum depth of 10 feet bgs. Two soil samples were collected from each boring. One soil sample was collected from the ground surface to 2 feet bgs interval and a second from between 2 and 10 feet bgs (boring terminus) or refusal, whichever occurred first. Soil samples were analyzed for PPL SVOCs; PPL metals plus barium and vanadium; DRO; 1,4-dioxane; and perchlorate.

AOC O1 - Former 5,000-Gallon Diesel UST

A former 5,000-gallon diesel fuel UST (AOC O1) was removed in 1995; however, based on the documentation reviewed by Environmental Standards the exact UST location is uncertain. There was no disturbance or indication of a tank in the area sampled in July 2010; therefore, it is possible that the samples were not collected in the correct location.

As a result, Environmental Standards advanced four soil borings proximal to the second possible location of the former UST. Each soil boring was advanced to a maximum depth of 15 feet bgs or refusal, whichever was encountered first. A single soil sample was collected from each boring at 10 feet bgs (presumed UST invert and most likely depth to encounter impacted soils). Four soil samples were collected from four soil borings (O 01 SB01 @ 10'; O 01 SB02 @ 10'; O 01 SB03 @ 10'; O 01 SB04 @ 10'). Soil samples were analyzed for the PA DEP diesel fuel/No. 2 fuel oil short list constituents and vanadium.

AOC U - Vanadium in On-site Soils above Direct Contact Standards

Vanadium was detected in historical samples from the sewage treatment plant area, missile handling area, and the wash rack area above the PA DEP residential direct contact MSCs. To further assess soil quality and evaluate if vanadium in soil at the Site is naturally occurring or related to historical activities, laboratory analysis of vanadium was included for 24 soil samples collected from multiple AOCs. In order to generate a representative, statistically significant, site-wide data set, Environmental Standards analyzed 10 shallow (less than 2 feet bgs), four intermediate (approximately 4 feet bgs) and 10 deep (approximately 7 feet to 10 feet bgs) soil samples for vanadium.

Field Soil Screening

Each soil sample was described in the field according to color, texture, moisture content, staining, and noticeable odor, if present, and classified according to the USCS. In addition, collected soils were field-screened for the potential presence of VOCs using a PID. The PID was calibrated to a 100-parts per million (ppm) isobutylene gas standard prior to use. During soil screening and sample collection activities, relative VOC concentrations as measured with a PID, were not detected above background levels.

In general, a consistent soil profile was identified across the Site; from just beneath the surface organics to a maximum depth of 15 feet bgs was dark brown/red silty clay with some sand and fine gravel. Bedrock refusal (Brunswick Formation) was encountered in soil borings L SB01 (8 feet), L SB02 (7 feet), and M SB03 (9 feet). Soil Boring Logs are included in Appendix B.

Decontamination of Soil Sampling Equipment

Non-disposable sampling equipment used during soil sampling (*i.e.*, Geoprobe drive shoe and rods) were decontaminated prior to use and between samples to limit the potential for cross-contamination. Disposable materials, including hermetically-sealed, plastic sampling scoops and nitrile gloves were discarded following individual use at each sampling location.

Focused Phase II Groundwater Investigation

Due to leaking USTs, the Nike missile silos, the potential upgradient Superfund site groundwater issues, and the storm drain issues, the potential for groundwater quality degradation at the Site was identified during the Phase I ESA. To evaluate groundwater quality, Environmental Standards installed four new groundwater monitoring wells at the Site. Monitoring wells were specifically located to monitor both background groundwater conditions

and potential impacts from historical Site-related activities. One existing groundwater monitoring well (MW-5) located at the northwest corner of the Property was identified during the Phase I ESA and was incorporated into the Site groundwater monitoring well network, although specific well construction details for MW-5 are unknown. In addition, an existing groundwater supply well (*i.e.*, potable well) was also sampled as part of the Phase II groundwater investigation. Groundwater monitoring well and the potable well locations are depicted on Figure 3. Groundwater analytical data reports are included in Appendix A-2. Monitoring well construction logs are included in Appendix C.

The focused Phase II groundwater investigation was designed and implemented to evaluate the following AOCs:

AOC A - Superfund Site Transicoil/North Penn Located Upgradient of Site

The Site is located in an interpreted downgradient position relative to the Transicoil/North Penn Superfund Site. The Transicoil site has known groundwater concentrations of VOCs above US EPA and PA DEP safe drinking water standards.

To evaluate the potential for impacted groundwater to migrate beneath the Site, Environmental Standards utilized MW-5, the existing Site groundwater monitoring well located in the northwest corner of the Property. During the surface soil sampling conducted on May 22, 2014, it was determined that MW-5 has a total depth of approximately 100 feet and is assumed to be an open bedrock well with a 6-inch steel surface casing. Monitoring well MW-5 was redeveloped during monitoring well installation. Approximately, 25 gallons of groundwater (one well volume) were pumped from MW-5 during the redevelopment process.

Groundwater samples collected from MW-5 were analyzed for PPL VOCs, PPL SVOCs, PPL metals plus barium and vanadium, polychlorinated biphenyls (PCBs), and DRO.

AOC H - Former Nike Missile Silos

Between 1954 and 1968, the Site was used as part of the Nike Ajax missile system managed by the United States Government and was known as "Philadelphia Defense Area 91" (AOC H). Nike Ajax missile servicing involved the use of hazardous chemicals for cleaning, corrosion removal, maintenance, and the preparation of missile parts, fuel starters, and propellant mixtures. To operate the three missile silos, each contained an aboveground hydraulic oil tank, which potentially included PCB-containing hydraulic fluids. These hydraulic oil tanks have been drained and rendered unusable. In 2001, a soil investigation consisting of two subsurface soil samples was conducted with analytical results indicating that vanadium was the only monitored analyte that exceeded its PA DEP MSC. During the historic document review it was noted that some missile silos contained sumps at the bottom of the silo which could be used to dispose of various maintenance fluids. The bottoms of the silos were not observable during the Phase I Site visit and there was no further information regarding the existence of sumps.

During the initial Site visit, Environmental Standards was unable to access the interior of the fire protection pump house that was built on top of the center missile silo. However, during the surface soil sampling event on May 22, 2014, Environmental Standards was allowed access to

the pump house and visually inspected the area for recognized environmental conditions (RECs). No RECs were identified.

The primary concern associated with AOC H was the threat to Site groundwater quality associated with the chemicals used historically during operations. As such, the potential for groundwater impacts were evaluated as part of the property-wide Groundwater Investigation (AOC N).

AOC J - Groundwater Supply Well

The potable groundwater supply well located near the center of the Site is located approximately 30 feet northeast of the potable well pump house. The *former* potable well, which has been abandoned, was located within the pump house along with well piping, an electric panel, and a water softener system. Based on the historic document review, the *current* potable well is approximately 300 feet in depth. Since this well likely draws groundwater from a deeper aquifer than the other on-site monitoring wells, it was sampled to characterize and provide information regarding the quality of the deeper groundwater aquifer.

The potable well groundwater sample was analyzed for PPL VOCs, PPL SVOCs, and PPL metals plus barium and vanadium.

AOC N - Property-Wide Groundwater Impacts

Due to leaking USTs, the Nike missile silos, the potential upgradient groundwater issues, and the storm drain issues, the potential exists for groundwater quality degradation at the Site. To evaluate groundwater quality, Environmental Standards installed four groundwater monitoring wells; MW-1, MW-2, MW-3, and MW-4. Monitoring wells were located to monitor both background groundwater conditions and potential impacts from historical Site-related activities as discussed above.

Monitoring Well Installation

Between June 3 and 9, 2014, Environmental Standards oversaw the services of Allied Well Drilling, using a Sandvik Drilltech air rotary drill rig for the installation of four 2-inch diameter monitoring wells (MW-1, MW-2, MW-3, and MW-4). Monitoring well locations are shown on Figure 3. Prior to monitoring well installation, boring locations were cleared by requesting a Pennsylvania One-Call utility mark-out.

An Environmental Standards Geoscientist oversaw monitoring well drilling and installation activities. During installation, soil cuttings were screened with a PID and classified in the field by an Environmental Standards Geoscientist according to the USCS.

Red shale bedrock of the Brunswick Formation (northern portion of the Property; MW-1, MW-2, MW-4) and the Lockatong formation (southern portion of the Property; MW-3) were identified during monitoring well installation. Competent bedrock of the Brunswick Formation was encountered at 20 feet bgs (MW-2) to 29 feet bgs (MW-1). Competent bedrock of the Lockatong Formation was encountered at 68 feet bgs (MW-3).

Groundwater monitoring wells were installed in a manner consistent with US EPA protocols and in accordance with PA DEP's *Groundwater Monitoring Guidance Manual*. Site monitoring wells were constructed using appropriate lengths of clean, decontaminated threaded 2-inch schedule 40 polyvinyl chloride (PVC) screen (20-slot) and solid, threaded schedule 40 PVC riser to ensure that the groundwater table and free-product (if present) were intercepted within the screened portion of the monitoring well. Following installation of the well, the borehole annular space was filled with a sand filter pack (Morie #2 sand). The sand filter pack extends to approximately 2 feet above the top of the screen. An approximately 1 foot thick bentonite seal was placed on top of the filter pack to prevent the infiltration of surface water into the borehole. Each Site monitoring well is secured with an expandable, watertight locking cap and an approximately 2 feet by 2 feet concrete pad flush to grade. Monitoring wells MW-3 and MW-4 are finished flush to grade with a water-tight, 8-inch, bolt-down roadbox. To better locate monitoring wells MW-1 and MW-2 in the surrounding dense vegetation, 4-inch diameter steel protective casings and locking lid were installed. Monitoring well construction logs are included in Appendix C.

Site monitoring wells were developed by means of surging and pumping until development water was visually clear. Drill cuttings and water generated during monitoring well installation and development were containerized in 55-gallon United States Department of Transportation (US DOT)-approved drums. Following receipt of laboratory analytical results, drill cuttings were spread on the ground surface in the vicinity of the monitoring wells. In addition, sampling supplies and investigation-derived waste (IDW) were also containerized and properly disposed.

Monitoring well elevations were surveyed by Environmental Standards geoscientists and referenced to a relative Site datum (100-foot elevation) following installation. The horizontal well positions were located using a Garmin GPSMAP® 76CSx using global positioning systems technology.

Groundwater Monitoring

On June 19 and 20, 2014 and July 16 and 17, 2014, Environmental Standards completed groundwater sampling of the five Site monitoring wells and the potable water well. During each monitoring event, Environmental Standards personnel gauged the depth-to-water in each monitoring well with an optical interface probe capable of detecting water and free-product to 0.01 foot. The gauging data were recorded in the site-specific field logbook for subsequent calculation of groundwater elevations (Table 1).

Groundwater sampling was performed at each groundwater monitoring well by US EPA-approved low-flow (low-stress) sampling techniques. The low-flow sampling technique is designed to minimize stress (draw-down) to the aquifer and collect representative groundwater samples from the formation surrounding the screened interval. Disposable tubing was used at each well location to minimize potential cross-contamination. A submersible bladder pump was used to collect groundwater samples. The bladder pump was operated with compressed air. Depth-to-water was monitored during the purging process to minimize excessive draw-down (*i.e.*, greater than 0.3 feet). Due to low groundwater yield, draw-down greater than 0.3 feet did occur periodically. Also, groundwater quality indicator parameters (temperature, pH, specific conductance, dissolved oxygen [DO], oxidation-reduction potential [ORP], and turbidity) were monitored in the field to determine when groundwater representative of the formation was

obtained (Table 1). When the indicator parameters stabilized, groundwater was considered to be representative of aquifer conditions and samples were collected. Prior to preservation, groundwater samples for metals analysis were field-filtered through a 0.45 µm disposable filter.

The potable well was purged using the existing groundwater supply pump. The potable well was purged for approximately 10 to 15 minutes to thoroughly flush the pipes and the pressure tank contents. A garden hose was attached to a faucet within the pump house (prior to treatment or conditioners) and the supply pump was energized. Following purging and prior to sampling, groundwater quality indicator parameters were recorded. Following purging, the garden hose was disconnected and a groundwater sample was collected directly from the faucet.

Groundwater samples were placed in laboratory-supplied bottleware, labeled, and placed on ice in a cooler for shipment under proper Chain-of-Custody to the analytical laboratory. The June 2014 groundwater samples were submitted to Pace for analysis. Due to several performance-related issues with Pace, the July 2014 groundwater samples were submitted to Eurofins Lancaster Laboratories, Inc. (Eurofins; PA DEP Laboratory Certification ID 36-00037). Groundwater analytical data reports are included in Appendix A-2.

The collected groundwater samples were analyzed for the following parameters:

Monitoring Well	Analyses
MW-1	PPL VOCs, PPL SVOCs, PPL Metals plus Vanadium and Barium, PCBs, DRO
MW-2	Combined PA DEP Short List Parameters
MW-3	Combined PA DEP Short List Parameters for Oils
MW-4	PPL VOCs, PPL SVOCs, PPL Metals plus Vanadium and Barium
MW-5	PPL VOCs, PPL SVOCs, PPL Metals plus Vanadium and Barium, PCBs, DRO
Potable Well	PPL VOCs, PPL SVOCs, PPL Metals plus Vanadium and Barium

Purge water generated during groundwater sampling was containerized in US DOT-approved 55-gallon drums. The drums were properly labeled and stored in a secure location on-site. Following receipt of analytical data indicating that the water was not impacted above PA DEP residential MSCs, purge water was discharged to the ground surface in the immediate vicinity of the well from which it was collected. Sampling supplies and IDW were also containerized and properly disposed.

Results of the Focused Phase II Soil Investigation

Laboratory-reported concentrations of target compounds in soil samples were compared to the Act 2 SHS MSCs for residential soils overlying used aquifers with total dissolved solids of less than or equal to (\leq) 2,500 mg/L. If a PA DEP-published practical quantitation limit (PQL) exists and is higher than the MSC, the PQL becomes the comparative criteria. It is noteworthy that

proposed MSC revisions were presented during the PA DEP Environmental Quality Board's May 17, 2014, meeting as published in the PA Bulletin Volume 44, No. 20, pages 2980 - 3044. In at least one case for these investigations, the proposed changes have a meaningful impact on the comparative findings of our soil investigations.

Soil sample locations are depicted in Figure 3. Data are summarized on Tables 2 through 6 (separated by analytical lists and AOCs) and the soil analytical data reports are included in Appendix A-1. A summary of the reported soil sample concentration comparison to the potentially applicable comparative MSCs is provided below.

AOC B - On-Site Spoils Area

Three surface soil samples were analyzed for PPL SVOCs, PPL VOCs, and PPL metals plus barium and vanadium.

No target VOC compounds were detected above the analytical method detection limit (MDL); however, the laboratory MDLs for acrolein (5.8 µg/kg [B-SS03 @ 6"] to 6.3 µg/kg [B-SS01 @ 6"]) slightly exceed the current soil to groundwater Act 2 MSC for residential soils overlying a used aquifer MSC of 4.2 µg/kg, but are below the direct contact MSC. Laboratory procedures and methodologies do not currently allow for the detection and quantification of acrolein below the MSC concentration of 4.2 µg/kg. It is noteworthy that based on acrolein's historical commercial use as a biocide and algae reducer, it is highly unlikely that the compound would have been used at the Site. In addition, acrolein was not detected in groundwater samples collected from Site monitoring wells during the groundwater investigation. The absence of a qualifiable detection of the compound in soils or groundwater, as well as its commercial use being inconsistent with this property's use indicates (indirectly) that more likely than not the compound is not present in site soils.

No target SVOCs were reported above the MDL; however, "J" qualified concentrations were reported for the following analytes: benzo(a)anthracene, benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, fluoranthene, and pyrene. A J qualifier indicates a laboratory estimated analyte concentration that is above the MDL but less than the laboratory reporting limit (RL); therefore, one can conclude that the compounds are present in the soil sample, however, the reported concentrations may not be accurate. None of the J-qualified SVOC concentrations exceed the associated MSC.

Although not detected by the laboratory, the MDLs for benzidine and *n*-nitrosodimethylamine (no PA DEP-published PQLs) exceed the current Act 2 residential soil to groundwater and direct contact MSCs. Laboratory procedures and methodologies do not currently allow for the detection and quantification of these two compounds below their MSCs. Benzidine is primarily used as a dye but has not been used in the United States since the mid-1970's. As such, it is unlikely that the compound would have been used historically at the Site. Although groundwater samples were analyzed for benzidine, the MDLs associated with the groundwater samples are also above the Act 2 groundwater MSCs. *N*-nitrosodimethylamine is used as a component in rocket fuel, as such it is possible that this compound may have been used historically at the Site. *N*-nitrosodimethylamine was not detected during the groundwater investigation.

Review of the metals results indicates that vanadium concentrations exceed the proposed Act 2 SHS MSC (15 mg/kg) in the three collected surface soil samples. No other target metals were reported above the current or proposed Act 2 SHS MSCs for residential soils overlying a used aquifer.

AOC E and AOC O9 - No. 2 Fuel Oil Spill Next to Potable Well/UST Pump House

One surficial soil sample (O 09 SS01 @ 6") and one deep soil sample (E SB01 @ 10') were analyzed for the PA DEP No. 2 fuel oil short list constituents. In addition, sample O 09 SS01 @ 6" was analyzed for vanadium.

No target analytes were reported above the current Act 2 direct contact or soil to groundwater MSCs for residential soils overlying a used aquifer. For sample O 09 SS01 @ 6", however, the reported vanadium concentration (49 mg/kg) exceeds the proposed Act 2 direct contact MSC (15 mg/kg) for residential soils overlying a used aquifer.

AOC G and AOC T - Oil-Like Substance in Drainage Ditch

Four surface soil samples were analyzed for a combined version of the PA DEP short lists (leaded gasoline through mineral insulating oil). No target analytes were reported above the current or proposed Act 2 direct contact or soil to groundwater MSCs for residential soils overlying a used aquifer.

AOC K - OWS and OMS Building

Four soil samples were analyzed for the combined PA DEP fuel oil and lubricating oil short list constituents and vanadium. No target compounds were reported above the current Act 2 direct contact or soil to groundwater MSCs for residential soils overlying a used aquifer; however, vanadium concentrations in each soil sample (ranging from 20.6 mg/kg [K SB03 @ 4'] to 32.4 mg/kg [K SB04 @ 4']) exceed the proposed direct contact MSC (15 mg/kg) for residential soils overlying a used aquifer.

AOC L - Nike Missile Launch Area/Fire Training Burn Site and AOC M - Nike Missile Base – Building Area

Twelve soil samples were analyzed for 1,4-dioxane; PPL SVOCs; DRO; PPL metals plus barium; vanadium; and perchlorate. 1,4-dioxane was not reported above the current or proposed Act 2 direct contact or soil to groundwater MSCs for residential soils overlying a used aquifer in AOC L or AOC M.

Laboratory reported J-qualified results for benzo(a)pyrene (4,990 µg/kg) and benzo(b)fluoranthene (6,720 µg/kg) were reported at a concentration above the Act 2 direct contact MSCs (570 µg/kg and 5,700 µg/kg, respectively) in M SB01 @ 1.5'. The reported concentrations do not exceed the current soil to groundwater MSCs (46,000 µg/kg and 40,000 µg/kg, respectively) or the proposed benzo(b)fluoranthene soil to groundwater MSC (43,000 µg/kg). There is no proposed revision to the benzo(a)pyrene soil to groundwater MSC.

No other compounds in the PPL SVOC suite were reported at concentrations above the current or proposed Act 2 direct contact or soil to groundwater MSCs for residential soils overlying a used aquifer. For several SVOC compounds, the laboratory MDLs were above the comparative criteria (the higher of the most stringent residential MSC or the PQL). These compounds include: benzidine and *n*-nitrosodimethylamine in all samples and 2,4-dinitrotoluene; benzo(a)pyrene; bis(2-chloroethyl)ether; dibenz(a,h)anthracene; hexachloroethane; and *n*-nitroso-di-*n*-propylamine in samples L SB02 @ 1.5', M SB01 @ 1.5', and M SB02 @ 1.5'. The elevated MDLs and RLs in these three samples are due to dilutions required by the laboratory during analysis. It is also noteworthy that these compounds were not detected in Site groundwater.

Review of the metals results indicates that arsenic (19.2 mg/kg) in sample L SB02 @ 7' exceeded the Act 2 direct contact MSC. In addition, with the exception of soil sample L SB01 @ 8', vanadium concentrations exceed the proposed Act 2 SHS MSC (15 mg/kg). No other target metals were reported above the current or proposed Act 2 SHS MSCs for residential soils overlying a used aquifer.

DRO (C10–C28) concentrations greater than the MDL were detected and ranged from 1.4 mg/kg (L SB01 @ 8') to 74.5 mg/kg (M SB01 @ 1.5'). Although there is no Act 2 MSC for DRO, these results are relatively low and do not indicate significant soil impacts. As an example, the State of Minnesota uses a DRO standard of 100 mg/kg to indicate diesel fuel-impacted soil treatment completion.

AOC U - Vanadium in On-site Soils Above Direct Contact Standards

As described in the preceding sections, 24 soil samples were collected from multiple AOCs. In order to generate representative site-wide data, Environmental Standards submitted 10 shallow (less than 2 feet bgs), four intermediate (approximately 4 feet bgs), and 10 deep (approximately 7 feet to 10 feet bgs) soil samples for vanadium analysis. Vanadium concentrations were not reported in soil samples above the most stringent *current* Act 2 MSC of 1,500 mg/kg; however, with the exception of soil sample L SB01 @ 8', vanadium concentrations in all samples exceed the proposed Act 2 SHS MSC (15 mg/kg).

The arithmetic mean of vanadium concentration for the entire data set is 33.9 mg/kg. The average vanadium concentrations for the shallow, intermediate, and deep intervals are 38.2 mg/kg, 25.8 mg/kg, and 32.9 mg/kg, respectively. The data set standard deviation is 13.5 mg/kg. A further evaluation of the collected vanadium data set and associated statistics indicates that there are no significant differences in the vanadium concentrations among the three depth intervals, or concentration trends (higher concentrations in shallower soils) that would lead to the conclusion that the vanadium concentrations in Site soils are likely related to anthropogenic sources; for example, atmospheric fallout from coal combustion or Site-related activities. In addition, the observed vanadium concentrations are well below the reported United States average vanadium soil concentration of 200 mg/kg (Byerrum *et al.* 1974). As such, it appears that the vanadium in Site soil is naturally occurring and not associated with an anthropogenic source.

Results of the Focused Phase II Groundwater Investigation

Groundwater at the Site is interpreted to flow to the west/southwest. Groundwater elevation contours and interpreted flow directions for both the April and July 2014 sampling events are presented in Figures 4 and 5.

Analytical data associated with the groundwater investigation are summarized on Table 7 and the groundwater analytical data reports are included in Appendix A-2. With the exception of the sample collected from the potable well, laboratory detections of analytes were not reported above the PA DEP residential groundwater MSCs. A laboratory, J-qualified (estimated) concentration of lead was reported in the sample collected from the potable well during the July 2014 event slightly above the PA DEP residential groundwater MSC. The reported concentration was estimated (J-qualified) at 6.1 µg/L and the PA DEP MSC is 5 µg/L. Lead was not detected above the MDL (3.7 µg/L) in the sample collected from the potable well in June 2014. At Environmental Standards' request, Eurofins re-digested and re-analyzed the groundwater sample collected from the potable well in July 2014. The reported concentration associated with the reanalysis was 4.7 µg/L. Down-well piping and appurtenances associated with the potable well are constructed of metal. It is possible that the lead detected in the water sample collected from the potable well may be attributable to random leaching of the metals from the older metal piping.

Conclusions and Recommendations

Soil Investigation

Noteworthy findings of the soil investigation include:

- J-qualified concentrations of two polynuclear aromatic compounds (PAHs), benzo(a)pyrene (4,990 µg/kg) and benzo(b)fluoranthene (6,720 µg/kg), were reported above the Act 2 direct contact MSCs (570 µg/kg and 5,700 µg/kg, respectively) in M SB01 @ 1.5'.

During collection of this soil sample, there were no indications of impacts (*i.e.*, visual staining, noteworthy odors, or PID responses above background levels). Further, PAH impacts were not identified in the deeper sample collected from boring SB01. As such, it appears that the PAH impacts identified in soil sample SB01 @ 1.5' are limited.

- The laboratory-reported arsenic concentration (19.2 mg/kg) in sample L SB02 @ 7' exceeded the Act 2 direct contact MSC.

The arsenic result associated with sample L SB02 @ 7' appears to be random and transient and is not consistent with the site-wide arsenic results. It does not appear that the arsenic result is related to Site activities.

- With the exception of soil sample L SB01 @ 8', vanadium concentrations in all collected samples exceed the proposed Act 2 SHS MSC (15 mg/kg). Based on a review of the vanadium data set, a statistical evaluation, and literature review, it appears that the vanadium in Site soil is likely naturally occurring (background) and is, in fact, well below the average vanadium concentration for United States soils.

Groundwater

Noteworthy findings of the groundwater investigation include:

- No MSC exceedances were identified in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, MW-4, or MW-5. These groundwater wells monitor the first water bearing unit beneath the Site and are, therefore, would be most likely to be impacted by Site-related activities.
- A J-qualified (estimated) concentration of lead was reported in the sample collected from the potable well during the July 2014 event slightly above the PA DEP residential groundwater MSC. At Environmental Standards' request, this sample was re-digested and re-analyzed. The associated laboratory-reported result was below the PA DEP residential groundwater MSC. This well is reported to be 300 feet deep and, as such, draws water from a deeper aquifer than the Site monitoring wells.

It is possible that the lead identified in the July 2014 water sample may be attributable to older metal piping.

Recommendations

Relative to the soil investigation results, very limited soil impacts were identified when analytical results are compared to the current PA DEP SHS Act 2 MSCs. We understand that the Township plans to use the Site for recreational purposes, and the PAH and arsenic-impacted soils identified in two soil samples can likely be addressed during Site redevelopment through excavation and removal. If excavation and removal is undertaken, post-removal soil sampling should be conducted to confirm that adequate material removal has occurred.

When the proposed revised PA DEP SHS Act 2 MSCs are used for comparison, site-wide vanadium concentrations exceed the comparative criteria. Due to the consistent concentrations across the Site and with depth, it appears the vanadium is likely naturally occurring. In addition, the observed vanadium concentrations detected at the site are below published national average data in US soils. In order to determine if the vanadium, arsenic, and PAH concentrations in Site soil might pose an unacceptable risk to visitors following redevelopment, it is recommended that a site-specific risk assessment using a recreational user exposure scenario be undertaken.

In general, Site groundwater is not impacted with the possible exception of the potable well. It is, however, possible that the reported lead result associated with the sample collected from the potable well in July 2014 is attributable to unstable and mobile metals associated with older metal piping in the well. If this well will be used, additional investigation should be conducted to

determine if the metal piping is the cause of the lead identified in water at this location. If it is determined that well materials are the cause of the lead exceedance, it may be worthwhile to upgrade the piping used at this well from metal to PVC and then collect a sample following the piping upgrade. The shallow groundwater monitored by the Site groundwater monitoring well network is not impacted and it is recommended that the five monitoring wells now be properly abandoned by a Pennsylvania-licensed water well driller.

Please remember that although the services provided followed generally accepted professional practices, and our investigation is considered reasonable and professionally appropriate, Environmental Standards does not warrant or guarantee that the results of our work necessarily yielded complete information about the property environmental conditions. Characterizing soil quality for a parcel with a limited number of soil and groundwater samples requires the application of judgment to site evaluation principles; accordingly, certain results of this work may be based on subjective interpretation. To the extent that Environmental Standards' services required judgment, there can be no assurance that fully definitive results were obtained.

Thank you for the opportunity to provide services to Worcester Township on this important project. If you have questions or require additional information, please do not hesitate to contact us at (610) 935-5577 or by e-mail at jkraycik@envstd.com or gkirkpatrick@envstd.com.

Respectfully,



Joseph P. Kraycik, P.G., CQA
Consulting Geoscientist

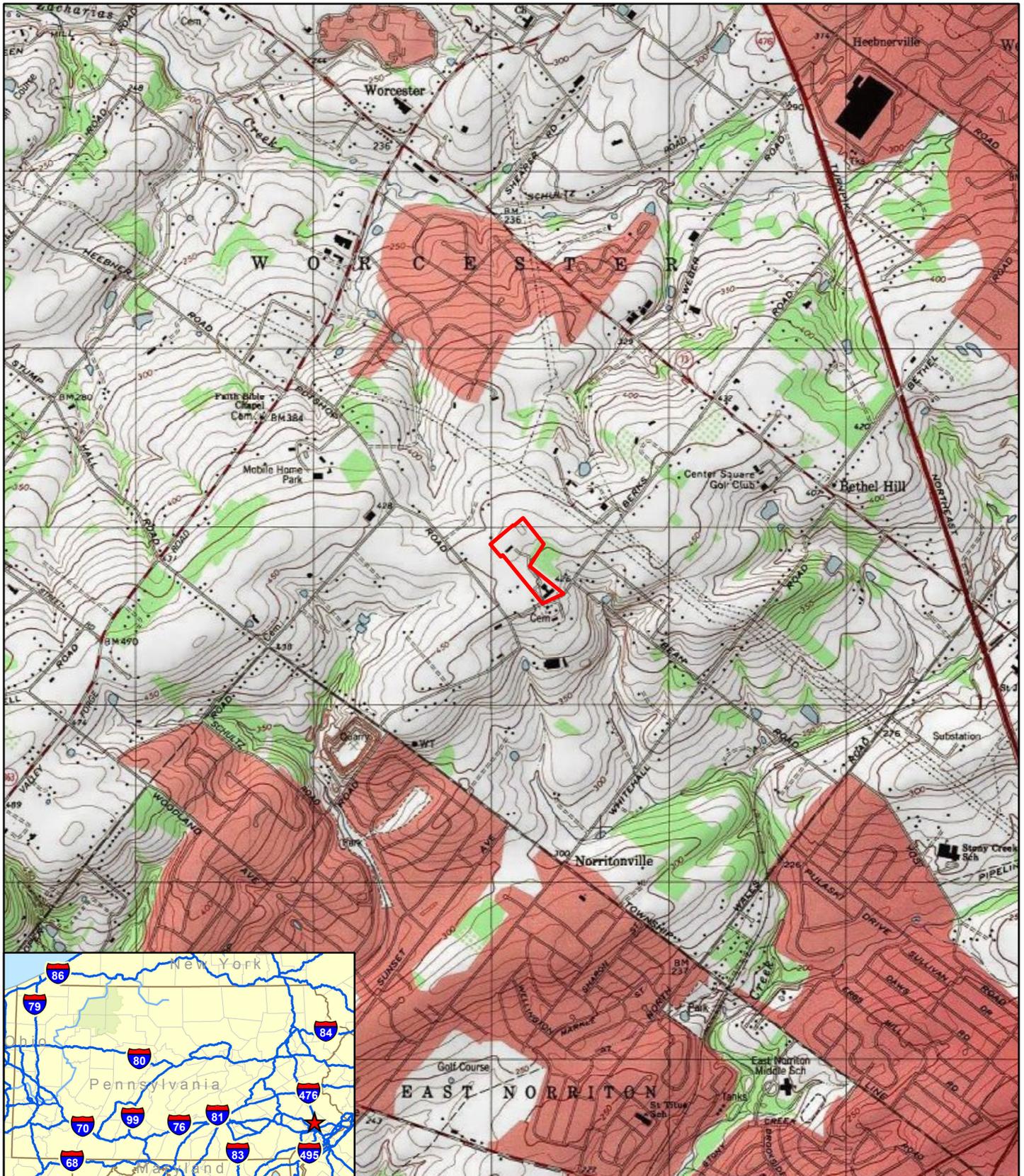


Gerald L. Kirkpatrick, P.G.
Principal Geoscientist

Enc.

FIGURES





ESRI USA TOPOGRAPHIC BASEMAP IMAGERY

LEGEND

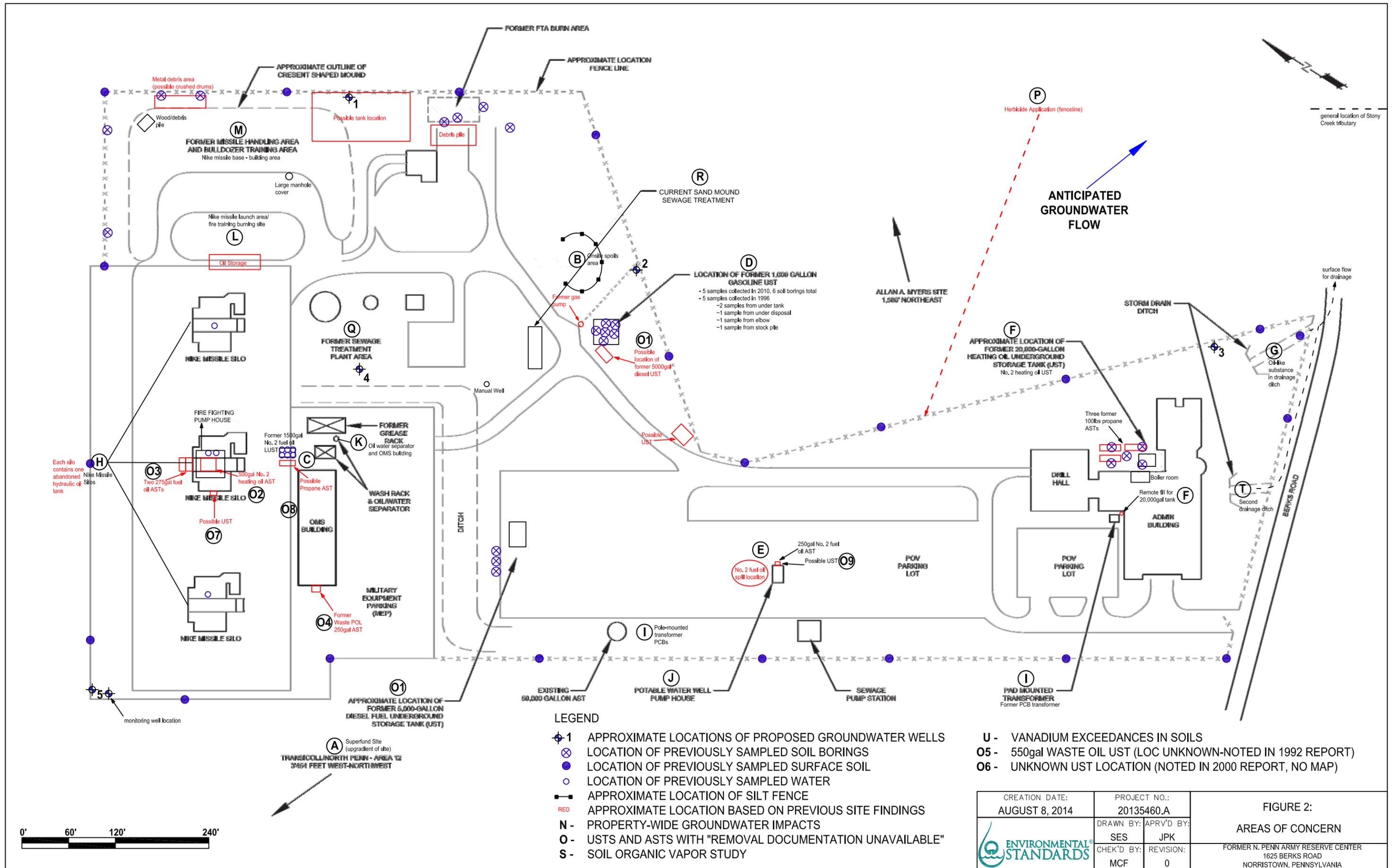
 APPROXIMATE PROPERTY BOUNDARY

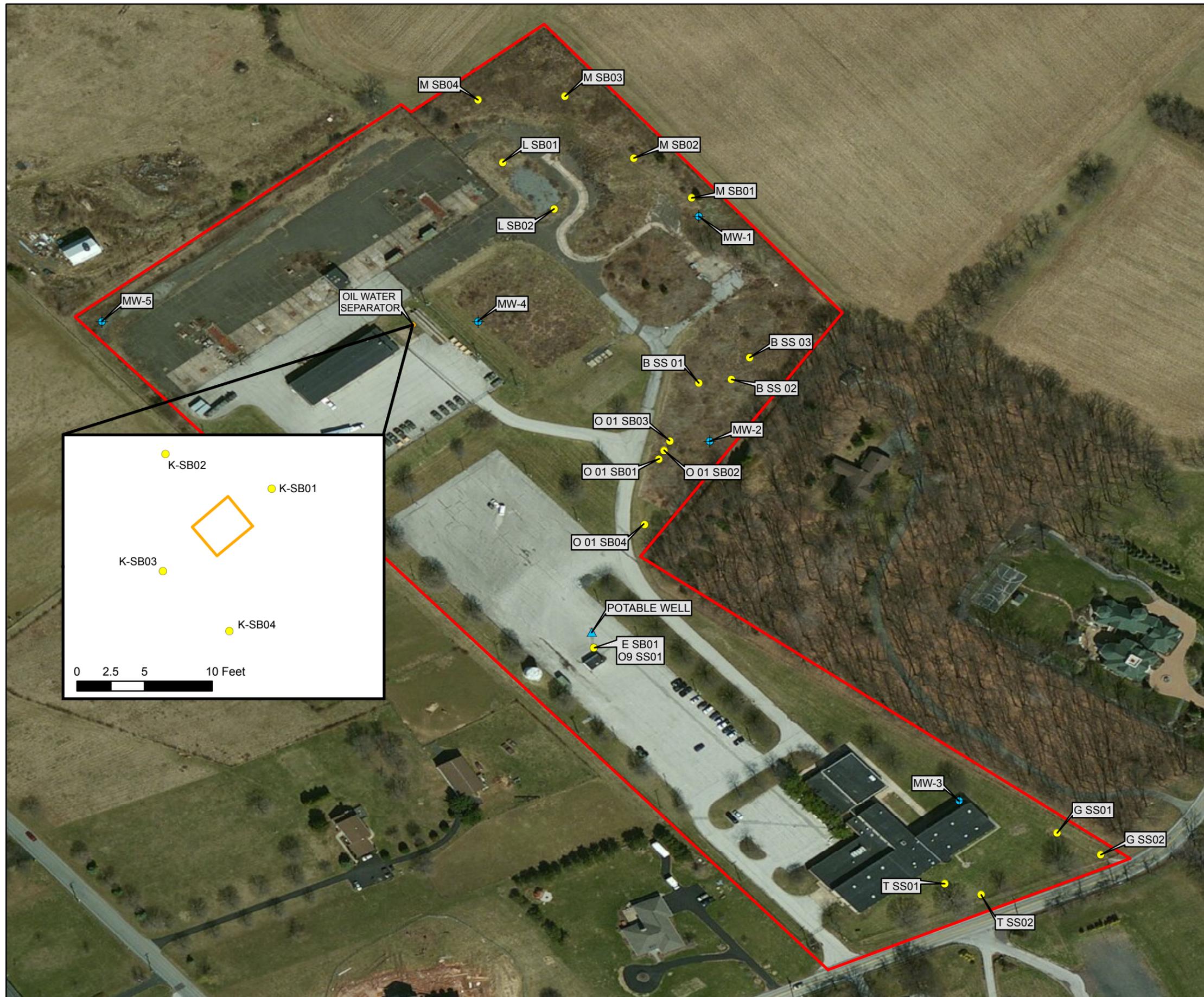


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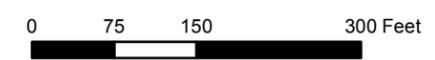
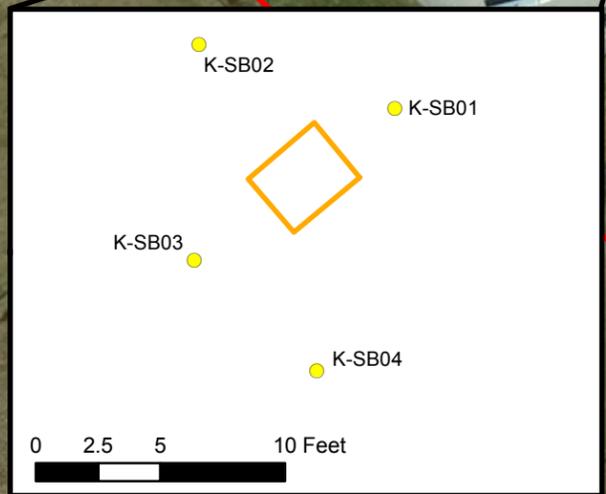
CREATION DATE: MARCH 5, 2014	PROJECT NO: 20146456.A	FIGURE 1: TOPOGRAPHIC SITE LOCATION MAP
 ENVIRONMENTAL STANDARDS	DRAWN BY: MCF	
	CHEK'D BY: SES	REVISION: 0
		FORMER N. PENN ARMY RESERVE CENTER 1625 BERKS ROAD NORRITOWN, PENNSYLVANIA





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- OIL WATER SEPARATOR
- SOIL SAMPLE LOCATION
- ◆ MONITORING WELL LOCATION
- ▲ POTABLE WELL LOCATION



SOURCE: ESRI AERIAL IMAGERY; 2011

CREATION DATE: AUGUST 7, 2014	PROJECT NO: 20146456.A	FIGURE 3: SOIL SAMPLE AND MONITORING WELL LOCATIONS
DRAWN BY: SES	APPRVD BY: JPK	
CHEK'D BY: MCF	REVISION: 1	
		FORMER N. PENN ARMY RESERVE CENTER 1625 BERKS ROAD NORRISTOWN, PENNSYLVANIA



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- + MONITORING WELL LOCATION
- GROUNDWATER ELEVATION CONTOUR (FT)
- ← INTERPRETED GROUNDWATER FLOW DIRECTION

0 75 150 300 Feet



SOURCE: ESRI AERIAL IMAGERY; 2011

CREATION DATE: JUNE 25, 2014	PROJECT NO: 20146456.A	FIGURE 4: GROUNDWATER ELEVATION CONTOUR MAP JUNE 19, 2014 FORMER N. PENN ARMY RESERVE CENTER 1625 BERKS ROAD NORRISTOWN, PENNSYLVANIA
DRAWN BY: SES	APPRVD BY: JPK	
CHEK'D BY: MCF	REVISION: 0	





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- + MONITORING WELL LOCATION
- GROUNDWATER ELEVATION CONTOUR (FT)
- ← INTERPRETED GROUNDWATER FLOW DIRECTION



SOURCE: ESRI AERIAL IMAGERY; 2011

CREATION DATE: AUGUST 13, 2014	PROJECT NO: 20146456.A	FIGURE 5: GROUNDWATER ELEVATION CONTOUR MAP JULY 16, 2014
DRAWN BY: SES	APPR'D BY: JPK	FORMER N. PENN ARMY RESERVE CENTER 1625 BERKS ROAD NORRISTOWN, PENNSYLVANIA
CHECK'D BY: MCF	REVISION: 0	



TABLES



Table 1
Field Measured Groundwater Quality Indicator Parameters - Monitoring Wells
Former North Penn Army Reserve Center
June and July, 2014

Well Identification	Date	Top of Casing Elevation (Ft.)	Depth to Water (Ft)	Groundwater Elevation	Groundwater Quality Indicator Parameters					
					Temperature (Celsius)	Dissolved O ₂ (mg/L)	Spec. Cond. (µS/cm)	pH	ORP (mV)	Turbidity (NTU)
MW-1	06/19/14	116.33	32.78	83.55	15.3	7.70	283.7	6.27	126.8	123
	07/16/14	116.33	51.00	65.33	15.2	6.87	293.8	6.49	94.8	172
MW-2	06/19/14	105.80	48.52	57.28	14.0	8.80	420.0	6.36	142.7	81.9
	07/16/14	105.80	52.17	53.63	16.0	7.07	405.2	6.49	90.1	165
MW-3	06/19/14	100.41	34.69	65.72	15.0	4.14	676	7.44	127.6	132
	07/16/14	100.41	34.69	65.72	16.2	1.99	659	7.52	74.7	219
MW-4	06/19/14	109.07	48.37	60.70	13.9	6.73	312.6	6.89	1160	78.3
	07/16/14	109.07	50.43	58.64	15.3	7.62	380.4	7.09	14.7	200
MW-5	06/19/14	109.87	58.92	50.95	17.6	5.85	482.8	6.99	131.4	2.53
	07/16/14	109.87	61.73	48.14	17.8	5.37	472.3	7.04	70.6	1.40
Potable Well	06/19/14	---	---	---	15.2	1.37	708	7.44	115.4	3.83
	07/16/14	---	---	---	15.3	1.40	689	7.34	36.4	2.81

Notes:

Table 2
Soils Analytical Data - AOCs E and O
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	E SB01 @ 10'		O 01 SB01 @ 10'		O 01 SB02 @ 10'		O 01 SB03 @ 10'		O 01 SB04 @ 10'		O 09 SS01 @ 6"	
5/27/2014																			
Volatile Organic Compounds																			
1,2,4-Trimethylbenzene	95-63-6	ug/kg	EPA 8260B	8400	130000	8400	130000	1.2	U	1.2	U	1.3	U	1.1	U	1.1	U	1.2	U
1,3,5-Trimethylbenzene	108-67-8	ug/kg	EPA 8260B	2300	110000	74000	2200000	1.4	U	1.4	U	1.5	U	1.2	U	1.3	U	1.4	U
Benzene	71-43-2	ug/kg	EPA 8260B	500	57000	500	57000	0.8	U	0.83	U	0.86	U	0.72	U	0.77	U	0.8	U
Ethylbenzene	100-41-4	ug/kg	EPA 8260B	70000	10000000	70000	10000000	2.6	U	2.7	U	2.8	U	2.4	U	2.5	U	2.6	U
Isopropylbenzene (Cumene)	98-82-8	ug/kg	EPA 8260B	600000	7700000	600000	7700000	1.1	U	1.1	U	1.2	U	0.98	U	1	U	1.1	U
Methyl-tert-butyl ether	1634-04-4	ug/kg	EPA 8260B	2000	1700000	2000	1700000	0.73	U	0.76	U	0.79	U	0.66	U	0.7	U	0.73	U
Naphthalene	91-20-3	ug/kg	EPA 8260B	25000	4400000	25000	4400000	2.6	U	2.7	U	2.8	U	2.3	U	2.5	U	2.6	U
Toluene	108-88-3	ug/kg	EPA 8260B	100000	10000000	100000	10000000	0.66	U	0.68	U	0.71	U	0.59	U	0.63	U	0.66	U
Metals																			
Vanadium	7440-62-2	mg/kg	EPA 6010B	26000	1500	290	15			36.6		24.4		32.7		45		49	

Notes:

mg/kg - milligram per kilogram

ug/kg - microgram per kilogram

NA - Not applicable

U - Indicates the analyte was analyzed for, but not detected.

J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.

1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for soil to groundwater, used aquifers, TDS ≤ 2,500 mg/L, residential use.

2 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for direct contact, residential use.

3 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Yellow highlight - indicates analyte detected above proposed revised MSCs

Table 3
Soils Analytical Data - AOC B
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	B-SS01 @ 6"		B-SS02 @ 6"		B-SS03 @ 6"	
								5/22/2014	U	5/22/2014	U	5/22/2014	U
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	ug/kg	EPA 8260B	20000	10000000	20000	10000000	3	U	3	U	2.8	U
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	EPA 8260B	84	7700	84	7700	1	U	1	U	0.95	U
1,1,2-Trichloroethane	79-00-5	ug/kg	EPA 8260B	500	28000	500	4000	1.1	U	1.1	U	0.99	U
1,1-Dichloroethane	75-34-3	ug/kg	EPA 8260B	3100	280000	3100	280000	0.92	U	0.91	U	0.85	U
1,1-Dichloroethene	75-35-4	ug/kg	EPA 8260B	700	3800000	700	3800000	0.94	U	0.93	U	0.87	U
1,2-Dichloroethane	107-06-2	ug/kg	EPA 8260B	500	17000	500	17000	1.1	U	1	U	0.98	U
1,2-Dichloropropane	78-87-5	ug/kg	EPA 8260B	500	45000	500	45000	1.9	U	1.9	U	1.7	U
2-Chloroethylvinyl ether	110-75-8	ug/kg	EPA 8260B	NA	NA	NA	NA	0.61	U	0.6	U	0.56	U
Acrolein	107-02-8	ug/kg	EPA 8260B	4.2	380	4.2	380	6.3	U	6.2	U	5.8	U
Acrylonitrile	107-13-1	ug/kg	EPA 8260B	72	6600	72	6600	3.8	U	3.8	U	3.5	U
Benzene	71-43-2	ug/kg	EPA 8260B	500	57000	500	57000	0.91	U	0.9	U	0.84	U
Bromodichloromethane	75-27-4	ug/kg	EPA 8260B	8000	12000	8000	12000	2.1	U	2.1	U	1.9	U
Bromoform	75-25-2	ug/kg	EPA 8260B	8000	410000	8000	410000	2.9	U	2.9	U	2.7	U
Bromomethane	74-83-9	ug/kg	EPA 8260B	1000	96000	1000	96000	3.4	U	3.4	U	3.2	U
Carbon tetrachloride	56-23-5	ug/kg	EPA 8260B	500	30000	500	74000	1	U	1	U	0.96	U
Chlorobenzene	108-90-7	ug/kg	EPA 8260B	10000	960000	10000	960000	1.2	U	1.1	U	1.1	U
Chloroethane	75-00-3	ug/kg	EPA 8260B	23000	6200000	25000	6400000	1.9	U	1.9	U	1.8	U
Chloroform	67-66-3	ug/kg	EPA 8260B	8000	19000	8000	19000	0.83	U	0.82	U	0.76	U
Chloromethane	74-87-3	ug/kg	EPA 8260B	3000	250000	3000	250000	1.2	U	1.2	U	1.1	U
cis-1,3-Dichloropropene	10061-01-5	ug/kg	EPA 8260B	NA	NA	NA	NA	1.8	U	1.8	U	1.7	U
Dibromochloromethane	124-48-1	ug/kg	EPA 8260B	8000	17000	8000	17000	1.8	U	1.8	U	1.6	U
Ethylbenzene	100-41-4	ug/kg	EPA 8260B	70000	10000000	70000	10000000	3	U	3	U	2.8	U
Methylene Chloride	75-09-2	ug/kg	EPA 8260B	500	950000	500	1300000	1.6	U	1.5	U	1.4	U
Tetrachloroethene	127-18-4	ug/kg	EPA 8260B	500	340000	500	770000	0.84	U	0.83	U	0.78	U
Toluene	108-88-3	ug/kg	EPA 8260B	100000	10000000	100000	10000000	0.75	U	0.74	U	0.69	U
trans-1,2-Dichloroethene	156-60-5	ug/kg	EPA 8260B	10000	1100000	10000	1100000	0.95	U	0.94	U	0.88	U
trans-1,3-Dichloropropene	10061-02-6	ug/kg	EPA 8260B	NA	NA	NA	NA	1.9	U	1.9	U	1.8	U
Trichloroethene	79-01-6	ug/kg	EPA 8260B	500	260000	500	38000	0.88	U	0.87	U	0.81	U
Vinyl chloride	75-01-4	ug/kg	EPA 8260B	200	1900	200	1900	0.94	U	0.93	U	0.87	U
Semi-Volatile Organic Compounds													
1,2,4-Trichlorobenzene	120-82-1	ug/kg	EPA 8270C	27000	2200000	27000	640000	60.1	U	60.3	U	61.7	U
1,2-Dichlorobenzene	95-50-1	ug/kg	EPA 8270C	60000	3800000	60000	3800000	58.3	U	58.6	U	59.9	U
1,3-Dichlorobenzene	541-73-1	ug/kg	EPA 8270C	61000	660000	61000	660000	65.1	U	65.4	U	66.9	U
1,4-Dichlorobenzene	106-46-7	ug/kg	EPA 8270C	10000	40000	10000	40000	55.2	U	55.5	U	56.7	U
2,4,6-Trichlorophenol	88-06-2	ug/kg	EPA 8270C	11000	220000	12000	220000	71.7	U	72	U	73.7	U
2,4-Dichlorophenol	120-83-2	ug/kg	EPA 8270C	2000	660000	2000	660000	67.4	U	67.7	U	69.2	U
2,4-Dimethylphenol	105-67-9	ug/kg	EPA 8270C	73000	4400000	83000	4400000	69.3	U	69.6	U	71.1	U
2,4-Dinitrophenol	51-28-5	ug/kg	EPA 8270C	7300	440000	8300	440000	356	U	357	U	365	U
2,4-Dinitrotoluene	121-14-2	ug/kg	EPA 8270C	210	58000	240	60000	82.1	U	82.5	U	84.3	U
2,6-Dinitrotoluene	606-20-2	ug/kg	EPA 8270C	3700	220000	4200	220000	51.5	U	51.7	U	52.9	U
2-Chloronaphthalene	91-58-7	ug/kg	EPA 8270C	6200000	18000000	7000000	18000000	41.2	U	41.4	U	42.3	U
2-Chlorophenol	95-57-8	ug/kg	EPA 8270C	4400	1100000	4400	1100000	50.1	U	50.3	U	51.4	U
2-Methylphenol(o-Cresol)	95-48-7	ug/kg	EPA 8270C	180000	11000000	210000	11000000	69.4	U	69.7	U	71.3	U
2-Nitrophenol	88-75-5	ug/kg	EPA 8270C	29000	1800000	33000	1800000	44.1	U	44.2	U	45.3	U
3&4-Methylphenol(m&p Cresol)	NA	ug/kg	EPA 8270C	18000	1100000	NA	1100000	79	U	79.4	U	81.2	U
3,3'-Dichlorobenzidine	91-94-1	ug/kg	EPA 8270C	8300	40000	8800	41000	42.8	U	42.9	U	43.9	U
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	EPA 8270C	370	22000	330	18000	111	U	112	U	114	U

Table 3
Soils Analytical Data - AOC B
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	B-SS01 @ 6"		B-SS02 @ 6"		B-SS03 @ 6"	
								5/22/2014		5/22/2014		5/22/2014	
Semi-Volatile Organic Compounds (continued)													
4-Bromophenylphenyl ether	101-55-3	ug/kg	EPA 8270C	NA	NA	NA	NA	58	U	58.2	U	59.5	U
4-Chlorophenylphenyl ether	7005-72-3	ug/kg	EPA 8270C	NA	NA	NA	NA	53.5	U	53.7	U	54.9	U
4-Nitrophenol	100-02-7	ug/kg	EPA 8270C	6000	1800000	6000	1800000	163	U	163	U	167	U
Acenaphthene	83-32-9	ug/kg	EPA 8270C	2700000	13000000	3100000	13000000	45.7	U	45.9	U	46.9	U
Acenaphthylene	208-96-8	ug/kg	EPA 8270C	2500000	13000000	2800000	13000000	45.1	U	45.3	U	46.3	U
Anthracene	120-12-7	ug/kg	EPA 8270C	350000	66000000	350000	66000000	61.4	U	61.6	U	63	U
Azobenzene	103-33-3	ug/kg	EPA 8270C	NA	NA	NA	NA	41.1	U	41.3	U	42.2	U
Benzidine	92-87-5	ug/kg	EPA 8270C	120	18	130	18	3890	U	3900	U	3990	U
Benzo(a)anthracene	56-55-3	ug/kg	EPA 8270C	25000	5700	28000	6000	126	J	45.5	U	46.6	U
Benzo(a)pyrene	50-32-8	ug/kg	EPA 8270C	46000	570	46000	580	132	U	133	U	136	U
Benzo(b)fluoranthene	205-99-2	ug/kg	EPA 8270C	40000	5700	43000	5800	232	J	77.7	U	117	J
Benzo(g,h,i)perylene	191-24-2	ug/kg	EPA 8270C	180000	13000000	180000	13000000	112	U	113	U	116	U
Benzo(k)fluoranthene	207-08-9	ug/kg	EPA 8270C	610000	57000	610000	58000	140	U	141	U	144	U
bis(2-Chloroethoxy)methane	111-91-1	ug/kg	EPA 8270C	11000	6600000	13000	6600000	64.2	U	64.5	U	65.9	U
bis(2-Chloroethyl) ether	111-44-4	ug/kg	EPA 8270C	15	1300	15	1300	185	U	186	U	190	U
bis(2-Chloroisopropyl) ether	108-60-1	ug/kg	EPA 8270C	30000	44000	30000	44000	52.1	U	52.3	U	53.5	U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	EPA 8270C	130000	1300000	130000	1300000	329	J	317	J	203	J
Butylbenzylphthalate	85-68-7	ug/kg	EPA 8270C	3000000	9400000	3200000	9800000	45	U	45.2	U	46.2	U
Chrysene	218-01-9	ug/kg	EPA 8270C	230000	570000	230000	580000	119	J	84.8	U	86.8	U
Dibenz(a,h)anthracene	53-70-3	ug/kg	EPA 8270C	13000	570	14000	580	132	U	133	U	136	U
Diethylphthalate	84-66-2	ug/kg	EPA 8270C	2900000	10000000	3300000	10000000	43.2	U	43.4	U	44.4	U
Dimethylphthalate	131-11-3	ug/kg	EPA 8270C	NA	NA	NA	NA	55.7	U	56	U	57.2	U
Di-n-butylphthalate	84-74-2	ug/kg	EPA 8270C	1500000	10000000	1700000	10000000	65	U	65.3	U	66.8	U
Di-n-octylphthalate	117-84-0	ug/kg	EPA 8270C	10000000	8800000	10000000	2200000	72.3	U	72.6	U	74.3	U
Fluoranthene	206-44-0	ug/kg	EPA 8270C	3200000	8800000	3200000	8800000	169	J	60.2	U	85.2	J
Fluorene	86-73-7	ug/kg	EPA 8270C	3000000	8800000	3400000	8800000	55.2	U	55.5	U	56.7	U
Hexachloro-1,3-butadiene	87-68-3	ug/kg	EPA 8270C	10000	220000	11000	220000	69.5	U	69.8	U	71.4	U
Hexachlorobenzene	118-74-1	ug/kg	EPA 8270C	960	11000	960	12000	50.7	U	50.9	U	52	U
Hexachlorocyclopentadiene	77-47-4	ug/kg	EPA 8270C	91000	1300000	91000	1300000	126	U	127	U	129	U
Hexachloroethane	67-72-1	ug/kg	EPA 8270C	560	110000	560	44000	60.3	U	60.6	U	62	U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	EPA 8270C	2200000	5700	2400000	5800	95.8	U	96.2	U	98.4	U
Isophorone	78-59-1	ug/kg	EPA 8270C	10000	10000000	10000	10000000	42.9	U	43.1	U	44	U
Naphthalene	91-20-3	ug/kg	EPA 8270C	25000	4400000	25000	4400000	52.3	U	52.5	U	53.7	U
Nitrobenzene	98-95-3	ug/kg	EPA 8270C	7300	440000	8300	440000	61.6	U	61.9	U	63.3	U
N-Nitrosodimethylamine	62-75-9	ug/kg	EPA 8270C	0.14	12	0.14	12	50.4	U	50.6	U	51.8	U
N-Nitroso-di-n-propylamine	621-64-7	ug/kg	EPA 8270C	9.4	2600	10	2700	46.4	U	46.6	U	47.7	U
N-Nitrosodiphenylamine	86-30-6	ug/kg	EPA 8270C	20000	3700000	23000	3800000	39.7	U	39.9	U	40.8	U
Pentachlorophenol	87-86-5	ug/kg	EPA 8270C	5000	150000	5000	47000	98.1	U	98.5	U	101	U
Phenanthrene	85-01-8	ug/kg	EPA 8270C	10000000	66000000	10000000	66000000	72.4	U	72.8	U	74.4	U
Phenol	108-95-2	ug/kg	EPA 8270C	200000	66000000	200000	3800000	95.3	U	95.7	U	97.9	U
Pyrene	129-00-0	ug/kg	EPA 8270C	2200000	6600000	2200000	6600000	183	J	60	U	86	J
Metals													
Antimony	7440-36-0	mg/kg	EPA 6010B	27	88	27	88	0.32	U	0.31	U	0.33	U
Arsenic	7440-38-2	mg/kg	EPA 6010B	29	12	29	12	5.7		5.6		6.7	
Barium	7440-39-3	mg/kg	EPA 6010B	8200	44000	8200	44000	101		106		91.4	
Beryllium	7440-41-7	mg/kg	EPA 6010B	320	440	320	440	1		1.2		0.95	
Cadmium	7440-43-9	mg/kg	EPA 6010B	38	110	38	110	0.29		0.11	J	0.13	J

Table 3
Soils Analytical Data - AOC B
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	B-SS01 @ 6"		B-SS02 @ 6"		B-SS03 @ 6"	
								5/22/2014		5/22/2014		5/22/2014	
Metals (continued)													
Chromium	7440-47-3	mg/kg	EPA 6010B	190	660	190	660	21.2		21.4		21.3	
Copper	7440-50-8	mg/kg	EPA 6010B	43000	8100	43000	8100	16		13.8		20.5	
Lead	7439-92-1	mg/kg	EPA 6010B	450	500	450	500	30		23.6		25.1	
Mercury	7439-97-6	mg/kg	EPA 7471A	10	35	10	35	0.038	J	0.036	J	0.035	J
Nickel	7440-02-0	mg/kg	EPA 6010B	650	4400	650	4400	14.1		13		14.7	
Selenium	7782-49-2	mg/kg	EPA 6010B	26	1100	26	1100	0.5	U	0.48	U	0.51	U
Silver	7440-22-4	mg/kg	EPA 6010B	84	1100	84	1100	0.046	U	0.045	U	0.047	U
Thallium	7440-28-0	mg/kg	EPA 6010B	14	15	14	2	0.28	U	0.28	U	0.29	U
Vanadium	7440-62-2	mg/kg	EPA 6010B	26000	1500	290	15	32		32.3		33.1	
Zinc	7440-66-6	mg/kg	EPA 6010B	12000	66000	12000	66000	54.1		44.2		49.4	

Notes:

mg/kg - milligram per kilogram

ug/kg - microgram per kilogram

NA - Not applicable

U - Indicates the analyte was analyzed for, but not detected.

J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.

1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for soil to groundwater, used aquifers, TDS ≤ 2,500 mg/L, residential use.

2 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for direct contact, residential use.

3 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Yellow highlight - indicates analyte detected above proposed revised MSCs

Gray highlight - MDL is above applicable MSCs and PA DEP Practical Quantitation Limit (PQL), if published

Table 4
Soils Analytical Data - AOCs G and T
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	G-SS01 @ 3"		G-SS02 @ 3"		T-SS01 @ 3"		T-SS02 @ 3"	
								5/22/2014		5/22/2014		5/22/2014		5/22/2014	
Volatile Organic Compounds															
1,2,4-Trimethylbenzene	95-63-6	ug/kg	EPA 8260B	8400	130000	8400	130000	1.2	U	1.4	U	1.4	U	1.6	U
1,2-Dibromoethane (EDB)	106-93-4	ug/kg	EPA 8260B	5	740	5	740	2.7	U	3.1	U	3.2	U	3.7	U
1,2-Dichloroethane	107-06-2	ug/kg	EPA 8260B	500	17000	500	17000	0.96	U	1.1	U	1.1	U	1.3	U
1,3,5-Trimethylbenzene	108-67-8	ug/kg	EPA 8260B	2300	110000	74000	2200000	1.4	U	1.6	U	1.7	U	1.9	U
Benzene	71-43-2	ug/kg	EPA 8260B	500	57000	500	57000	0.82	U	0.93	U	0.97	U	1.1	U
Ethylbenzene	100-41-4	ug/kg	EPA 8260B	70000	10000000	70000	10000000	2.7	U	3.1	U	3.2	U	3.6	U
Isopropylbenzene (Cumene)	98-82-8	ug/kg	EPA 8260B	600000	7700000	600000	7700000	1.1	U	1.3	U	1.3	U	1.5	U
Methyl-tert-butyl ether	1634-04-4	ug/kg	EPA 8260B	2000	1700000	2000	1700000	0.75	U	0.85	U	0.89	U	1	U
Naphthalene	91-20-3	ug/kg	EPA 8260B	25000	4400000	25000	4400000	2.6	U	3	U	3.1	U	3.6	U
Toluene	108-88-3	ug/kg	EPA 8260B	100000	10000000	100000	10000000	0.67	U	0.77	U	0.8	U	0.91	U
Xylene (Total)	1330-20-7	ug/kg	EPA 8260B	1000000	1900000	1000000	1900000	3.2	U	3.7	U	3.8	U	4.3	U
Semi-Volatile Organic Compounds															
Anthracene	120-12-7	ug/kg	EPA 8270C	350000	66000000	350000	66000000	20.3	J	10.2	U	62.8	U	11.6	U
Benzo(a)anthracene	56-55-3	ug/kg	EPA 8270C	25000	5700	28000	6000	262		201		1190		259	
Benzo(a)pyrene	50-32-8	ug/kg	EPA 8270C	46000	570	46000	580	83.8		18.5	J	81.7	J	70.3	J
Benzo(b)fluoranthene	205-99-2	ug/kg	EPA 8270C	40000	5700	43000	5800	301		189		1120		280	
Benzo(g,h,i)perylene	191-24-2	ug/kg	EPA 8270C	180000	13000000	180000	13000000	68	J	6.5	U	39.9	U	121	
Chrysene	218-01-9	ug/kg	EPA 8270C	230000	570000	230000	580000	118		24	J	134	J	58.4	J
Fluorene	86-73-7	ug/kg	EPA 8270C	3000000	8800000	3400000	8800000	13.5	U	13.3	U	82.1	U	15.2	U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	EPA 8270C	2200000	5700	2400000	5800	52.9	J	4.4	U	27.1	U	69.4	J
Phenanthrene	85-01-8	ug/kg	EPA 8270C	10000000	66000000	10000000	66000000	175		23.3	J	168	J	90.9	J
Pyrene	129-00-0	ug/kg	EPA 8270C	2200000	6600000	2200000	6600000	225		49.8	J	231	J	124	
Polychlorinated Biphenyls															
PCB, Total	1336-36-3	ug/kg	EPA 8082	NA	NA	NA	NA	26		25.1		24.4	U	22.5	U
PCB-1016 (Aroclor 1016)	12674-11-2	ug/kg	EPA 8082	72000	15000	80000	15000	3	U	3	U	3.6	U	3.3	U
PCB-1221 (Aroclor 1221)	11104-28-2	ug/kg	EPA 8082	160	9000	180	9000	9.3	U	9.2	U	11.2	U	10.3	U
PCB-1232 (Aroclor 1232)	11141-16-5	ug/kg	EPA 8082	130	9000	140	9000	6.1	U	6.1	U	7.4	U	6.8	U
PCB-1242 (Aroclor 1242)	53469-21-9	ug/kg	EPA 8082	4000	9000	4000	9000	4	U	3.9	U	4.8	U	4.4	U
PCB-1248 (Aroclor 1248)	12672-29-6	ug/kg	EPA 8082	16000	9000	18000	9300	4.3	U	4.3	U	5.2	U	4.8	U
PCB-1254 (Aroclor 1254)	11097-69-1	ug/kg	EPA 8082	67000	4400	75000	4400	26		25.1		11.3	U	10.4	U
PCB-1260 (Aroclor 1260)	11096-82-5	ug/kg	EPA 8082	150000	9000	170000	9000	3.1	U	3.1	U	23	J	3.5	U
Metals															
Lead	7439-92-1	mg/kg	EPA 6010B	450	500	450	500	22.2		56		118		47.7	

Notes:

mg/kg - milligram per kilogram

ug/kg - microgram per kilogram

NA - Not applicable

U - Indicates the analyte was analyzed for, but not detected.

J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.

1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for soil to groundwater, used aquifers, TDS ≤ 2,500 mg/L, residential use.

2 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for direct contact, residential use.

3 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Table 5
Soils Analytical Data - AOC K
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	K SB01 @ 4'		K SB02 @ 4'		K SB03 @ 4'		K SB04 @ 4'	
								5/27/2014	U	5/27/2014	U	5/27/2014	U	5/27/2014	U
Volatile Organic Compounds															
Benzene	71-43-2	ug/kg	EPA 8260B	500	57000	500	57000	0.84	U	0.92	U	0.78	U	0.72	U
Naphthalene	91-20-3	ug/kg	EPA 8260B	25000	4400000	25000	4400000	2.7	U	3	U	2.5	U	2.3	U
Semi-Volatile Organic Compounds															
Anthracene	120-12-7	ug/kg	EPA 8270C	350000	66000000	350000	66000000	1.1	U	1.1	U	1.1	U	1	U
Benzo(a)anthracene	56-55-3	ug/kg	EPA 8270C	25000	5700	28000	6000	0.56	U	0.57	U	0.56	U	0.55	U
Benzo(a)pyrene	50-32-8	ug/kg	EPA 8270C	46000	570	46000	580	0.49	U	0.5	U	0.49	U	0.48	U
Benzo(b)fluoranthene	205-99-2	ug/kg	EPA 8270C	40000	5700	43000	5800	0.78	U	0.79	U	0.78	U	0.76	U
Benzo(g,h,i)perylene	191-24-2	ug/kg	EPA 8270C	180000	13000000	180000	13000000	0.68	U	0.69	U	0.68	U	0.66	U
Chrysene	218-01-9	ug/kg	EPA 8270C	230000	570000	230000	580000	1.1	U	1.1	U	1	U	1	U
Fluorene	86-73-7	ug/kg	EPA 8270C	3000000	8800000	3400000	8800000	1.4	U	1.4	U	1.4	U	1.4	U
Phenanthrene	85-01-8	ug/kg	EPA 8270C	10000000	66000000	10000000	66000000	1.1	U	1.1	U	1.1	U	1	U
Pyrene	129-00-0	ug/kg	EPA 8270C	2200000	6600000	2200000	6600000	0.88	U	0.89	U	0.87	U	0.85	U
Metals															
Vanadium	7440-62-2	mg/kg	EPA 6010B	26000	1500	290	15	23.3		26.9		20.6		32.4	

Notes:

mg/kg - milligram per kilogram

ug/kg - microgram per kilogram

NA - Not applicable

U - Indicates the analyte was analyzed for, but not detected.

J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.

1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for soil to groundwater, used aquifers, TDS ≤ 2,500 mg/L, residential use.

2 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for direct contact, residential use.

3 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Yellow highlight - indicates analyte detected above proposed revised MSCs

Table 6
Soils Analytical Data - AOCs L and M
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	L SB01 @ 1.5'	L SB01 @ 8'	L SB02 @ 1.5'	L SB02 @ 7'	M SB01 @ 1.5'	M SB01 @ 9.5'	M SB02 @ 1.5'	M SB02 @ 9.5'	M SB03 @ 1.5'	M SB03 @ 9.0'	M SB04 @ 1.5'	M SB04 @ 9.5'												
								5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014							
Volatile Organic Compounds																															
1,4-Dioxane (p-Dioxane)	123-91-1	ug/kg	EPA 8260B	640	58000	730	89000	29.9	U	29.8	U	29.2	U	35.2	U	25.7	U	29.8	U	28.8	U	35.8	U	29.6	U	33.1	U	27	U	39	U
Semi-Volatile Organic Compounds																															
1,2,4-Trichlorobenzene	120-82-1	ug/kg	EPA 8270C	27000	2200000	27000	640000	60.6	U	59.8	U	298	U	57.3	U	1060	U	59.1	U	601	U	64.7	U	58	U	55.7	U	58.2	U	64.6	U
1,2-Dichlorobenzene	95-50-1	ug/kg	EPA 8270C	60000	3800000	60000	3800000	58.8	U	58.1	U	289	U	55.6	U	1030	U	57.3	U	583	U	62.8	U	56.3	U	54	U	56.5	U	62.7	U
1,3-Dichlorobenzene	541-73-1	ug/kg	EPA 8270C	61000	660000	61000	660000	65.7	U	64.9	U	323	U	62.1	U	1150	U	64	U	652	U	70.1	U	62.9	U	60.4	U	63.1	U	70.1	U
1,4-Dichlorobenzene	106-46-7	ug/kg	EPA 8270C	10000	40000	10000	40000	55.7	U	55	U	274	U	52.7	U	977	U	54.3	U	553	U	59.5	U	53.4	U	51.2	U	53.5	U	59.4	U
2,4,6-Trichlorophenol	88-06-2	ug/kg	EPA 8270C	11000	220000	12000	220000	72.3	U	71.4	U	356	U	68.4	U	1270	U	70.5	U	718	U	77.2	U	69.3	U	66.5	U	69.5	U	77.2	U
2,4-Dichlorophenol	120-83-2	ug/kg	EPA 8270C	2000	660000	2000	660000	67.9	U	67.1	U	334	U	64.2	U	1190	U	66.2	U	674	U	72.5	U	65.1	U	62.4	U	65.2	U	72.5	U
2,4-Dimethylphenol	105-67-9	ug/kg	EPA 8270C	73000	4400000	83000	4400000	69.8	U	69	U	343	U	66	U	1220	U	68.1	U	693	U	74.6	U	66.9	U	64.2	U	67.1	U	74.5	U
2,4-Dinitrophenol	51-28-5	ug/kg	EPA 8270C	7300	440000	8300	440000	359	U	354	U	1760	U	339	U	6290	U	350	U	3560	U	383	U	344	U	330	U	344	U	383	U
2,4-Dinitrotoluene	121-14-2	ug/kg	EPA 8270C	210	58000	240	60000	82.8	U	81.8	U	407	U	78.3	U	1450	U	80.7	U	821	U	88.4	U	79.3	U	76.1	U	79.5	U	88.3	U
2,6-Dinitrotoluene	606-20-2	ug/kg	EPA 8270C	3700	220000	4200	220000	51.9	U	51.3	U	255	U	49.1	U	910	U	50.6	U	515	U	55.4	U	49.7	U	47.7	U	49.8	U	55.4	U
2-Chloronaphthalene	91-58-7	ug/kg	EPA 8270C	6200000	18000000	7000000	18000000	41.6	U	41.1	U	204	U	39.3	U	729	U	40.5	U	413	U	44.4	U	39.8	U	38.2	U	39.9	U	44.4	U
2-Chlorophenol	95-57-8	ug/kg	EPA 8270C	4400	1100000	4400	1100000	50.5	U	49.8	U	248	U	47.7	U	885	U	49.2	U	501	U	53.9	U	48.4	U	46.4	U	48.5	U	53.9	U
2-Methylphenol(o-Cresol)	95-48-7	ug/kg	EPA 8270C	180000	11000000	210000	11000000	69.9	U	69.1	U	344	U	66.1	U	1230	U	68.2	U	694	U	74.7	U	67	U	64.3	U	67.2	U	74.6	U
2-Nitrophenol	88-75-5	ug/kg	EPA 8270C	29000	1800000	33000	1800000	44.4	U	43.9	U	218	U	42	U	779	U	43.3	U	441	U	47.4	U	42.6	U	40.8	U	42.7	U	47.4	U
3&4-Methylphenol(m&p Cresol)	NA	ug/kg	EPA 8270C	18000	1100000	NA	1100000	79.7	U	78.7	U	392	U	75.3	U	1400	U	77.7	U	791	U	85.1	U	76.3	U	73.3	U	76.5	U	85	U
3,3'-Dichlorobenzidine	91-94-1	ug/kg	EPA 8270C	8300	40000	8800	41000	43.1	U	42.6	U	212	U	40.8	U	756	U	42	U	428	U	46	U	41.3	U	39.6	U	41.4	U	46	U
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	EPA 8270C	370	22000	330	18000	112	U	111	U	551	U	106	U	1970	U	109	U	1110	U	120	U	107	U	103	U	108	U	120	U
4-Bromophenylphenyl ether	101-55-3	ug/kg	EPA 8270C	NA	NA	NA	NA	58.4	U	57.7	U	287	U	55.2	U	1020	U	57	U	580	U	62.4	U	56	U	53.7	U	56.1	U	62.3	U
4-Chlorophenylphenyl ether	7005-72-3	ug/kg	EPA 8270C	NA	NA	NA	NA	53.9	U	53.3	U	265	U	51	U	946	U	52.6	U	535	U	57.6	U	51.7	U	49.6	U	51.8	U	57.5	U
4-Nitrophenol	100-02-7	ug/kg	EPA 8270C	6000	1800000	6000	1800000	164	U	162	U	806	U	155	U	2870	U	160	U	1630	U	175	U	157	U	151	U	157	U	175	U
Acenaphthene	83-32-9	ug/kg	EPA 8270C	2700000	13000000	3100000	13000000	46.1	U	45.5	U	227	U	43.6	U	808	U	44.9	U	457	U	49.2	U	44.1	U	42.4	U	44.2	U	49.2	U
Acenaphthylene	208-96-8	ug/kg	EPA 8270C	2500000	13000000	2800000	13000000	45.5	U	44.9	U	224	U	43	U	1260	U	44.3	U	451	U	48.6	U	43.6	U	41.8	U	43.7	U	48.5	U
Anthracene	120-12-7	ug/kg	EPA 8270C	350000	66000000	350000	66000000	61.9	U	61.1	U	304	U	58.5	U	1090	U	60.3	U	614	U	66.1	U	59.3	U	56.9	U	59.4	U	66	U
Azobenzene	103-33-3	ug/kg	EPA 8270C	NA	NA	NA	NA	41.4	U	40.9	U	204	U	39.2	U	727	U	40.4	U	411	U	44.3	U	39.7	U	38.1	U	39.8	U	44.2	U
Benzidine	92-87-5	ug/kg	EPA 8270C	120	18	130	18	3920	U	3870	U	3850	U	3710	U	34400	U	3820	U	38900	U	4190	U	3750	U	3600	U	3760	U	4180	U
Benzo(a)anthracene	56-55-3	ug/kg	EPA 8270C	25000	5700	28000	6000	45.7	U	45.2	U	225	U	43.2	U	4320	J	44.6	U	454	U	48.8	U	43.8	U	42	U	43.9	U	48.8	U
Benzo(a)pyrene	50-32-8	ug/kg	EPA 8270C	46000	570	46000	580	133	U	131	U	654	U	126	U	4990	J	130	U	1320	U	142	U	127	U	122	U	128	U	142	U
Benzo(b)fluoranthene	205-99-2	ug/kg	EPA 8270C	40000	5700	43000	5800	78	U	77.1	U	384	U	73.8	U	6720	J	127	J	774	U	83.3	U	74.8	U	71.7	U	93.6	J	83.3	U
Benzo(g,h,i)perylene	191-24-2	ug/kg	EPA 8270C	180000	13000000	180000	13000000	113	U	112	U	558	U	107	U	3270	J	111	U	1130	U	121	U	109	U	104	U	109	U	121	U
Benzo(k)fluoranthene	207-08-9	ug/kg	EPA 8270C	610000	57000	610000	58000	141	U	140	U	695	U	134	U	3090	J	138	U	1400	U	151	U	135	U	130	U	136	U	151	U
bis(2-Chloroethoxy)methane	111-91-1	ug/kg	EPA 8270C	11000	660000	13000	660000	64.7	U	63.9	U	318	U	61.2	U	1140	U	63.1	U	642	U	69.1	U	62	U	59.5	U	62.2	U	69.1	U
bis(2-Chloroethyl) ether	111-44-4	ug/kg	EPA 8270C	15	1300	15	1300	186	U	184	U	917	U	176	U	3270	U	182	U	1850	U	199	U	179	U	171	U	179	U	199	U
bis(2-Chloroisopropyl) ether	108-60-1	ug/kg	EPA 8270C	30000	44000	30000	44000	52.5	U	51.8	U	258	U	49.6	U	921	U	51.2	U	521	U	56.1	U	50.3	U	48.3	U	50.4	U	56	U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	EPA 8270C	130000	1300000	130000	1300000	135	U	302	J	666	U	292	J	2370	U	144	J	1340	U	145	U	212	J	243	J	130	U	144	U
Butylbenzylphthalate	85-68-7	ug/kg	EPA 8270C	3000000	9400000	3200000	9800000	45.4	U	44.8	U	223	U	42.9	U	796	U	44.2	U	450	U	48.4	U	43.5	U	41.7	U	43.6	U	48.4	U
Chrysene	218-01-9	ug/kg	EPA 8270C	230000	570000	230000	580000	85.1	U	84.1	U	419	U	80.5	U	5050	J	83	U	845	U	90.9	U	81.6	U	78.3	U	81.8	U	90.9	U
Dibenz(a,h)anthracene	53-70-3	ug/kg	EPA 8270C	13000	570	14000	580	133	U	131	U	654	U	126	U	2330	U	130	U	1320	U	142	U	127	U	122	U	128	U	142	U
Diethylphthalate	84-66-2	ug/kg	EPA 8270C	2900000	10000000	3300000	10000000	43.6	U	43	U	214	U	41.2	U	764	U	42.5	U	433	U	46.5	U	41.8	U	40.1	U	41.9	U	46.5	U

Table 6
Soils Analytical Data - AOCs L and M
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Units	Method	Soil to Groundwater MSCs ¹	Direct Contact MSCs ²	Proposed Soil to Groundwater MSCs ³	Proposed Direct Contact MSCs ³	L SB01 @ 1.5'	L SB01 @ 8'	L SB02 @ 1.5'	L SB02 @ 7'	M SB01 @ 1.5'	M SB01 @ 9.5'	M SB02 @ 1.5'	M SB02 @ 9.5'	M SB03 @ 1.5'	M SB03 @ 9.0'	M SB04 @ 1.5'	M SB04 @ 9.5'												
								5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014								
Semi-Volatile Organic Compounds (continued)																															
Dimethylphthalate	131-11-3	ug/kg	EPA 8270C	NA	NA	NA	NA	56.2	U	55.5	U	276	U	53.1	U	985	U	54.8	U	557	U	60	U	53.8	U	51.6	U	53.9	U	59.9	U
Di-n-butylphthalate	84-74-2	ug/kg	EPA 8270C	1500000	10000000	1700000	10000000	65.5	U	64.7	U	322	U	62	U	1150	U	63.9	U	651	U	70	U	62.8	U	60.3	U	63	U	70	U
Di-n-octylphthalate	117-84-0	ug/kg	EPA 8270C	10000000	8800000	10000000	2200000	72.9	U	72	U	359	U	68.9	U	1280	U	71.1	U	724	U	77.9	U	69.9	U	67	U	70	U	77.8	U
Fluoranthene	206-44-0	ug/kg	EPA 8270C	3200000	8800000	3200000	8800000	60.4	U	59.7	U	297	U	57.2	U	6740	J	58.9	U	600	U	64.6	U	57.9	U	55.6	U	121	J	64.5	U
Fluorene	86-73-7	ug/kg	EPA 8270C	3000000	8800000	3400000	8800000	55.7	U	55	U	274	U	52.7	U	977	U	54.3	U	553	U	59.5	U	53.4	U	51.2	U	53.5	U	59.4	U
Hexachloro-1,3-butadiene	87-68-3	ug/kg	EPA 8270C	10000	220000	11000	220000	70.1	U	69.2	U	345	U	66.3	U	1230	U	68.3	U	695	U	74.8	U	67.1	U	64.4	U	67.3	U	74.8	U
Hexachlorobenzene	118-74-1	ug/kg	EPA 8270C	960	11000	960	12000	51.1	U	50.4	U	251	U	48.3	U	896	U	49.8	U	507	U	54.5	U	48.9	U	46.9	U	49	U	54.5	U
Hexachlorocyclopentadiene	77-47-4	ug/kg	EPA 8270C	91000	1300000	91000	1300000	127	U	126	U	625	U	120	U	2230	U	124	U	1260	U	136	U	122	U	117	U	122	U	136	U
Hexachloroethane	67-72-1	ug/kg	EPA 8270C	560	110000	560	44000	60.8	U	60.1	U	299	U	57.5	U	1070	U	59.3	U	603	U	64.9	U	58.3	U	55.9	U	58.4	U	64.9	U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	EPA 8270C	2200000	5700	2400000	5800	96.5	U	95.4	U	475	U	91.3	U	3260	J	94.1	U	958	U	103	U	92.5	U	88.8	U	92.7	U	103	U
Isophorone	78-59-1	ug/kg	EPA 8270C	10000	10000000	10000	10000000	43.2	U	42.7	U	213	U	40.9	U	758	U	42.1	U	429	U	46.2	U	41.4	U	39.7	U	41.5	U	46.1	U
Naphthalene	91-20-3	ug/kg	EPA 8270C	25000	4400000	25000	4400000	52.7	U	52.1	U	259	U	49.9	U	925	U	51.4	U	523	U	56.3	U	50.5	U	48.5	U	50.6	U	56.3	U
Nitrobenzene	98-95-3	ug/kg	EPA 8270C	7300	440000	8300	440000	62.1	U	61.3	U	305	U	58.7	U	1090	U	60.6	U	616	U	66.3	U	59.5	U	57.1	U	59.6	U	66.3	U
N-Nitrosodimethylamine	62-75-9	ug/kg	EPA 8270C	0.14	12	0.14	12	50.8	U	50.2	U	250	U	48.1	U	891	U	49.6	U	504	U	54.3	U	48.7	U	46.7	U	48.8	U	54.2	U
N-Nitroso-di-n-propylamine	621-64-7	ug/kg	EPA 8270C	9.4	2600	10	2700	46.8	U	46.2	U	230	U	44.2	U	821	U	45.6	U	464	U	50	U	44.8	U	43	U	44.9	U	49.9	U
N-Nitrosodiphenylamine	86-30-6	ug/kg	EPA 8270C	20000	3700000	23000	3800000	40	U	39.5	U	197	U	37.8	U	702	U	39	U	397	U	42.7	U	38.3	U	36.8	U	38.4	U	42.7	U
Pentachlorophenol	87-86-5	ug/kg	EPA 8270C	5000	150000	5000	47000	98.9	U	97.7	U	487	U	93.5	U	1730	U	96.5	U	982	U	106	U	94.8	U	90.9	U	95	U	106	U
Phenanthrene	85-01-8	ug/kg	EPA 8270C	10000000	66000000	10000000	66000000	73	U	72.1	U	359	U	69.1	U	2070	J	71.2	U	725	U	78	U	70	U	67.1	U	111	J	77.9	U
Phenol	108-95-2	ug/kg	EPA 8270C	200000	66000000	200000	3800000	96.1	U	94.9	U	472	U	90.8	U	1690	U	93.7	U	953	U	103	U	92	U	88.3	U	92.3	U	103	U
Pyrene	129-00-0	ug/kg	EPA 8270C	2200000	6600000	2200000	6600000	60.2	U	59.5	U	296	U	56.9	U	5930	J	58.7	U	598	U	64.3	U	57.7	U	55.3	U	85.8	J	64.2	U
DRO (C10-C28)	NA	mg/kg	EPA 8015B	NA	NA	NA	NA	3.2	J	1.4	J	3.7	J	1.8	J	74.5	J	7.9	J	12.1	J	2.8	J	9.3	J	1.5	J	6.7	J	1.7	J
Metals																															
Antimony	7440-36-0	mg/kg	EPA 6010B	27	88	27	88	0.31	U	0.29	U	0.29	U	0.31	U	0.26	U	0.3	U	0.3	U	0.33	U	0.31	U	0.29	U	0.31	U	0.34	U
Arsenic	7440-38-2	mg/kg	EPA 6010B	29	12	29	12	5.1	U	3.5	U	4.6	U	19.2	U	5.5	U	6.9	U	4.7	U	3.4	U	5.8	U	2.8	U	5.5	U	3.7	U
Barium	7440-39-3	mg/kg	EPA 6010B	8200	44000	8200	44000	73.8	U	209	U	117	U	277	U	154	U	92.4	U	69.4	U	144	U	103	U	129	U	109	U	157	U
Beryllium	7440-41-7	mg/kg	EPA 6010B	320	440	320	440	0.8	U	1.8	U	1.1	U	1.5	U	0.8	U	1.2	U	0.9	U	1.7	U	1.2	U	1.4	U	1.1	U	1.7	U
Cadmium	7440-43-9	mg/kg	EPA 6010B	38	110	38	110	0.032	U	0.23	J	0.098	J	0.054	J	0.86	U	0.032	U	0.099	J	0.18	J	0.11	J	0.16	J	0.11	J	0.13	J
Chromium	7440-47-3	mg/kg	EPA 6010B	190	660	190	660	26.8	U	20.7	U	28.4	U	36.6	U	119	U	30.7	U	23.6	U	21.7	U	20.5	U	24.8	U	19.8	U	36.5	U
Copper	7440-50-8	mg/kg	EPA 6010B	43000	8100	43000	8100	16.9	U	15	U	27.1	U	43.8	U	41.9	U	26.6	U	22.3	U	31.1	U	17.8	U	26.8	U	16.4	U	43.9	U
Lead	7439-92-1	mg/kg	EPA 6010B	450	500	450	500	20.9	U	27.6	U	26.5	U	26.3	U	299	U	21.6	U	14.4	U	17.9	U	21.7	U	19.9	U	22.9	U	10.5	U
Mercury	7439-97-6	mg/kg	EPA 7471A	10	35	10	35	0.016	J	0.0049	J	0.015	J	0.0022	U	0.017	J	0.0023	U	0.018	J	0.0049	J	0.026	J	0.0055	J	0.03	J	0.029	J
Nickel	7440-02-0	mg/kg	EPA 6010B	650	4400	650	4400	15.2	U	27.7	U	19.3	U	29.1	U	19.9	U	16.6	U	12.9	U	30.4	U	15.5	U	23.5	U	14.2	U	28	U
Selenium	7782-49-2	mg/kg	EPA 6010B	26	1100	26	1100	0.47	U	0.45	U	0.45	U	0.48	U	0.4	U	0.47	U	0.47	U	0.51	U	0.49	U	0.45	U	0.48	U	0.53	U
Silver	7440-22-4	mg/kg	EPA 6010B	84	1100	84	1100	0.044	U	0.042	U	0.041	U	0.044	U	0.037	U	0.043	U	0.044	U	0.047	U	0.045	U	0.042	U	0.044	U	0.049	U
Thallium	7440-28-0	mg/kg	EPA 6010B	14	15	14	2	0.27	U	0.26	U	0.25	U	0.27	U	0.23	U	0.26	U	0.27	U	0.29	U	0.28	U	0.26	U	0.27	U	0.3	U
Vanadium	7440-62-2	mg/kg	EPA 6010B	26000	1500	290	15	35.3	U	13.4	U	36.9	U	72.1	U	63.3	U	42.1	U	35.8	U	16.5	U	32	U	18.4	U	32.3	U	28.1	U
Zinc	7440-66-6	mg/kg	EPA 6010B	12000	66000	12000	66000	42.7	U	72.1	U	60.1	U	88.1	U	159	U	45.5	U	57.4	U	74.2	U	49.2	U	65.9	U	48.1	U	64.5	U
Inorganic Compounds																															
Perchlorate	14797-73-0	ug/kg	EPA 314.0	1500	150000	1500	150000	7.9	U	6.6	U	6.2	U	6.4	U	5.7	U	6.3	U	6.6	U	7.3	U	6.9	U	6.9	U	6.9	U	7.8	U

Notes:
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
NA - Not applicable
U - Indicates the analyte was analyzed for, but not detected.
J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.
1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for soil to groundwater, used aquifers, TDS < 2,500 mg/L, residential use.
2 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for direct contact, residential use.
3 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Yellow highlight and bold - indicates analyte detected above applicable MSCs
Yellow highlight - indicates analyte detected above proposed revised MSCs
Gray highlight - MDL is above applicable MSCs and PA DEP Practical Quantitation Limit (PQL), if published

Table 7
Groundwater Analytical Data
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Method	Units	MSC ¹	Proposed MSC ²	MW-1			MW-2			MW-3			MW-4			MW-5			Potable Well												
						6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014								
Volatile Organic Compounds																																	
1,1,1-Trichloroethane	71-55-6	EPA 8260B	ug/L	200	200	0.19	U	0.5	U							0.19	U	0.5	U	0.19	U	0.5	U	0.19	U	0.5	U						
1,1,2,2-Tetrachloroethane	79-34-5	EPA 8260B	ug/L	0.84	0.84	0.22	U	0.5	U							0.22	U	0.5	U	0.22	U	0.5	U	0.22	U	0.5	U	0.22	U	0.5	U		
1,1,2-Trichloroethane	79-00-5	EPA 8260B	ug/L	5	5	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U		
1,1-Dichloroethane	75-34-3	EPA 8260B	ug/L	31	31	0.16	U	0.5	U							0.16	U	0.5	U	0.16	U	0.5	U	0.16	U	0.5	U	0.16	U	0.5	U		
1,1-Dichloroethene	75-35-4	EPA 8260B	ug/L	7	7	0.14	U	0.5	U							0.14	U	0.5	U	0.14	U	0.5	U	0.14	U	0.5	U	0.14	U	0.5	U		
1,2,4-Trimethylbenzene	95-63-6	EPA 8260B	ug/L	15	15					0.13	U	0.5	U	0.13	U	0.5	U																
1,2-Dichloroethane	107-06-2	EPA 8260B	ug/L	5	5	0.14	U	0.5	U	0.14	U	0.5	U			0.14	U	0.5	U	0.14	U	0.5	U	0.14	U	0.5	U	0.14	U	0.5	U		
1,2-Dichloropropane	78-87-5	EPA 8260B	ug/L	5	5	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U		
1,3,5-Trimethylbenzene	108-67-8	EPA 8260B	ug/L	13	420					0.12	U	0.5	U	0.12	U	0.5	U																
2-Chloroethyl Vinyl Ether	110-75-8	EPA 8260B	ug/L	NA	NA	2	U	2	U							2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U		
Acrolein	107-02-8	EPA 8260B	ug/L	0.042	0.042	1.7	U	40	U							1.7	U	40	U	1.7	U	40	U	1.7	U	40	U	1.7	U	40	U		
Acrylonitrile	107-13-1	EPA 8260B	ug/L	0.72	0.72	1.6	U	4	U							1.6	U	4	U	1.6	U	4	U	1.6	U	4	U	1.6	U	4	U		
Benzene	71-43-2	EPA 8260B	ug/L	5	5	0.065	U	0.5	U	0.065	U	0.5	U	0.065	U	0.5	U	0.065	U	0.065	U	0.5	U	0.065	U	0.065	U	0.5	U	0.065	U	0.5	U
Bromodichloromethane	75-27-4	EPA 8260B	ug/L	80	80	0.15	U	0.5	U							0.15	U	0.5	U	0.15	U	0.5	U	0.15	U	0.5	U	0.15	U	0.5	U		
Bromoform	75-25-2	EPA 8260B	ug/L	80	80	0.25	U	0.5	U							0.25	U	0.5	U	0.25	U	0.5	U	0.25	U	0.5	U	0.25	U	0.5	U		
Bromomethane	74-83-9	EPA 8260B	ug/L	10	10	0.37	U	0.5	U							0.37	U	0.5	U	0.37	U	0.5	U	0.37	U	0.5	U	0.37	U	0.5	U		
Carbon Tetrachloride	56-23-5	EPA 8260B	ug/L	5	5	0.24	U	0.5	U							0.24	U	0.5	U	0.24	U	0.5	U	0.24	U	0.5	U	0.24	U	0.5	U		
Chlorobenzene	108-90-7	EPA 8260B	ug/L	100	100	0.12	U	0.5	U							0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U		
Chloroethane	75-00-3	EPA 8260B	ug/L	230	250	0.48	U	0.5	U							0.48	U	0.5	U	0.48	U	0.5	U	0.48	U	0.5	U	0.48	U	0.5	U		
Chloroform	67-66-3	EPA 8260B	ug/L	80	80	0.16	U	0.5	U							0.16	U	0.5	U	0.16	U	0.5	U	0.16	U	0.5	U	0.16	U	0.5	U		
Chloromethane	74-87-3	EPA 8260B	ug/L	30	30	0.21	U	0.5	U							0.21	U	0.5	U	0.21	U	0.5	U	0.21	U	0.5	U	0.21	U	0.5	U		
cis-1,2-Dichloroethene	156-59-2	EPA 8260B	ug/L	70	70			0.5	U								0.5	U			0.5	U						0.5	U				
cis-1,3-Dichloropropene	10061-01-5	EPA 8260B	ug/L	NA	NA	0.19	U	0.5	U							0.19	U	0.5	U	0.19	U	0.5	U	0.19	U	0.5	U	0.19	U	0.5	U		
Dibromochloromethane	124-48-1	EPA 8260B	ug/L	80	80	0.22	U	0.5	U							0.22	U	0.5	U	0.22	U	0.5	U	0.22	U	0.5	U	0.22	U	0.5	U		
Ethylbenzene	100-41-4	EPA 8260B	ug/L	700	700	0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U		
Isopropylbenzene	98-82-8	EPA 8260B	ug/L	840	840					0.12	U	0.5	U	0.12	U	0.5	U																
Methyl Tertiary Butyl Ether	1634-04-4	EPA 8260B	ug/L	20	20					0.19	U	0.5	U	0.19	U	0.5	U																
Methylene Chloride	75-09-2	EPA 8260B	ug/L	5	5	0.23	U	2	U							0.23	U	2	U	0.23	U	2	U	0.23	U	2	U	0.23	U	2	U		
Naphthalene	EPA 8260B	EPA 8260B	ug/L	100	100					0.33	U	1	U	0.33	U	1	U																
Tetrachloroethene	127-18-4	EPA 8260B	ug/L	5	5	0.12	U	0.5	U							0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U	0.12	U	0.5	U		
Toluene	108-88-3	EPA 8260B	ug/L	1000	1000	0.11	U	0.5	U	0.11	U	0.5	U	0.11	U	0.5	U	0.11	U	0.11	U	0.5	U	0.11	U	0.5	U	0.11	U	0.5	U		
Total Xylenes	1330-20-7	EPA 8260B	ug/L	10000	10000			0.5	U	0.31	U	0.5	U					0.5	U			0.5	U			0.5	U			0.5	U		
trans-1,2-Dichloroethene	156-60-5	EPA 8260B	ug/L	100	100	0.18	U	0.5	U							0.18	U	0.5	U	0.18	U	0.5	U	0.18	U	0.5	U	0.18	U	0.5	U		
trans-1,3-Dichloropropene	10061-02-6	EPA 8260B	ug/L	NA	NA	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U		
Trichloroethene	79-01-6	EPA 8260B	ug/L	5	5	0.15	U	0.5	U							0.15	U	0.5	U	0.15	U	0.5	U	0.15	U	0.5	U	0.15	U	0.5	U		
Trichlorofluoromethane	75-69-4	EPA 8260B	ug/L	2000	2000			0.5	U								0.5	U			0.5	U						0.5	U				
Vinyl Chloride	75-01-4	EPA 8260B	ug/L	2	2	0.13	U	0.5	U							0.13	U	0.5	U	0.13	U	0.5	U	0.13	U	0.5	U	0.13	U	0.5	U		
Semi-Volatile Organic Compounds																																	
1,2,4-Trichlorobenzene	120-82-1	EPA 8270C	ug/L	70	70	0.29	U	0.5	U							0.3	U	0.5	U	0.29	U	0.5	U	0.3	U	0.5	U	0.3	U	0.5	U		
1,2-Dichlorobenzene	95-50-1	EPA 8270C	ug/L	600	600	0.25	U	0.5	U							0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U		
1,2-Diphenylhydrazine	122-66-7	EPA 8270C	ug/L	NA	NA			0.5	U								0.5	U			0.5	U			0.5	U			0.5	U			
1,3-Dichlorobenzene	541-73-1	EPA 8270C	ug/L	600	600	0.27	U	0.5	U							0.28	U	0.5	U	0.28	U	0.5	U	0.28	U	0.5	U	0.28	U	0.5	U		
1,4-Dichlorobenzene	106-46-7	EPA 8270C	ug/L	75	75	0.29	U	0.5	U							0.3	U	0.5	U	0.3	U	0.5	U	0.3	U	0.5	U	0.3	U	0.5	U		
2,4,6-Trichlorophenol	88-06-2	EPA 8270C	ug/L	37	42	0.25	U	0.5	U							0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U		
2,4-Dichlorophenol	120-83-2	EPA 8270C	ug/L	20	20	0.25	U	0.5	U							0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U	0.26	U	0.5	U		
2,4-Dimethylphenol	105-67-9	EPA 8270C	ug/L	730	830	0.33	U	0.5	U							0.34	U	0.5	U	0.33	U	0.5	U	0.34	U	0.5	U	0.34	U	0.5	U		
2,4-Dinitrophenol	51-28-5	EPA 8270C	ug/L	73	83	1	U	10	U							1	U	10	U	1	U	10											

Table 7
Groundwater Analytical Data
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Method	Units	MSC ¹	Proposed MSC ²	MW-1			MW-2			MW-3			MW-4			MW-5			Potable Well						
						6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		6/19/2014	7/16/2014		
4-Chlorophenyl Phenyl Ether	7005-72-3	EPA 8270C	ug/L	NA	NA	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U
4-Methylphenol	106-44-5	EPA 8270C	ug/L	180	210			0.5	U									0.5	U							0.5	U
4-Nitrophenol	100-02-7	EPA 8270C	ug/L	60	60	0.39	U	10	U							0.4	U	10	U	0.4	U	10	U	0.4	U	10	U
Acenaphthene	83-32-9	EPA 8270C	ug/L	2200	2500	0.26	U	0.1	U							0.27	U	0.1	U	0.27	U	0.1	U	0.27	U	0.1	U
Acenaphthylene	208-96-8	EPA 8270C	ug/L	2200	2500	0.2	U	0.1	U							0.21	U	0.1	U	0.21	U	0.1	U	0.21	U	0.1	U
Anthracene	120-12-7	EPA 8270C	ug/L	66	66	0.2	U	0.1	U					0.1	U			0.1	U	0.21	U	0.1	U	0.21	U	0.1	U
Azobenzene	103-33-3	EPA 8270C	ug/L	NA	NA	0.25	U									0.25	U			0.25	U			0.25	U		
Benzidine	92-87-5	EPA 8270C	ug/L	0.00093	0.00098	102	U	20	U							104	U	20	U	104	U	20	U	104	U	20	U
Benzo(a)anthracene	56-55-3	EPA 8270C	ug/L	0.29	0.32	0.23	U	0.1	U	0.0034	U	0.1	U	0.0034	U	0.1	U	0.24	U	0.1	U	0.24	U	0.1	U	0.24	U
Benzo(a)pyrene	50-32-8	EPA 8270C	ug/L	0.2	0.2	0.25	U	0.1	U	0.077	U	0.1	U	0.076	U	0.1	U	0.26	U	0.1	U	0.26	U	0.1	U	0.26	U
Benzo(b)fluoranthene	205-99-2	EPA 8270C	ug/L	0.29	0.31	0.19	U	0.1	U	0.0038	U	0.1	U	0.0038	U	0.1	U	0.2	U	0.1	U	0.2	U	0.1	U	0.2	U
Benzo(g,h,i)perylene	191-24-2	EPA 8270C	ug/L	0.26	0.26	0.39	U	0.1	U	0.063	U	0.1	U	0.063	U	0.1	U	0.41	U	0.1	U	0.4	U	0.1	U	0.41	U
Benzo(k)fluoranthene	207-08-9	EPA 8270C	ug/L	0.55	0.55	0.25	U	0.1	U							0.26	U	0.1	U	0.26	U	0.1	U	0.26	U	0.1	U
bis(2-Chloroethoxy)methane	111-91-1	EPA 8270C	ug/L	110	130	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U
bis(2-Chloroethyl)ether	111-44-4	EPA 8270C	ug/L	0.15	0.15	0.29	U	0.5	U							0.3	U	0.5	U	0.3	U	0.5	U	0.3	U	0.5	U
bis(2-Chloroisopropyl) ether	108-60-1	EPA 8270C	ug/L	300	300	0.23	U	0.5	U							0.23	U	0.5	U	0.23	U	0.5	U	0.23	U	0.5	U
bis(2-Ethylhexyl)phthalate	117-81-7	EPA 8270C	ug/L	6	6	1.6	U	2	U							1.3	U	2	U	1.1	U	2	U	1.5	U	2	U
Butylbenzylphthalate	85-68-7	EPA 8270C	ug/L	350	380	0.28	U	2	U							0.29	U	2	U	0.29	U	2	U	0.29	U	2	U
Chrysene	218-01-9	EPA 8270C	ug/L	1.9	1.9	0.23	U	0.1	U	0.0018	U	0.1	U	0.0018	U	0.1	U	0.24	U	0.1	U	0.24	U	0.1	U	0.24	U
Dibenz(a,h)anthracene	53-70-3	EPA 8270C	ug/L	0.029	0.031	0.46	U	0.1	U							0.47	U	0.1	U	0.47	U	0.1	U	0.47	U	0.1	U
Diethylphthalate	84-66-2	EPA 8270C	ug/L	29000	33000	0.24	U	2	U							0.25	U	2	U	0.25	U	2	U	0.25	U	2	U
Dimethylphthalate	131-11-3	EPA 8270C	ug/L	NA	NA	0.28	U	2	U							0.29	U	2	U	0.29	U	2	U	0.29	U	2	U
Di-n-butylphthalate	84-74-2	EPA 8270C	ug/L	3700	4200	0.39	U	2	U							0.4	U	2	U	0.39	U	2	U	0.4	U	2	U
Di-n-octylphthalate	117-84-0	EPA 8270C	ug/L	1500	420	0.28	U	2	U							0.29	U	2	U	0.29	U	2	U	0.29	U	2	U
Fluoranthene	206-44-0	EPA 8270C	ug/L	260	260	0.22	U	0.1	U							0.23	U	0.1	U	0.22	U	0.1	U	0.23	U	0.1	U
Fluorene	86-73-7	EPA 8270C	ug/L	1500	1700	0.21	U	0.1	U					0.1	U	0.21	U	0.1	U	0.21	U	0.1	U	0.21	U	0.1	U
Hexachlorobenzene	118-74-1	EPA 8270C	ug/L	1	1	0.26	U	0.1	U							0.26	U	0.1	U	0.26	U	0.1	U	0.26	U	0.1	U
Hexachlorobutadiene	87-68-3	EPA 8270C	ug/L	8.5	9.4	0.33	U	0.5	U							0.34	U	0.5	U	0.34	U	0.5	U	0.34	U	0.5	U
Hexachlorocyclopentadiene	77-47-4	EPA 8270C	ug/L	50	50	0.47	U	5	U							0.48	U	5	U	0.48	U	5	U	0.48	U	5	U
Hexachloroethane	67-72-1	EPA 8270C	ug/L	1	1	0.31	U	1	U							0.32	U	1	U	0.32	U	1	U	0.32	U	1	U
Indeno(1,2,3-cd)pyrene	193-39-5	EPA 8270C	ug/L	0.29	0.31	0.49	U	0.1	U	0.0033	U	0.1	U	0.0032	U	0.1	U	0.5	U	0.1	U	0.5	U	0.1	U	0.5	U
Isophorone	78-59-1	EPA 8270C	ug/L	100	100	0.2	U	0.5	U							0.21	U	0.5	U	0.21	U	0.5	U	0.21	U	0.5	U
Naphthalene	EPA 8270C	EPA 8270C	ug/L	100	100	0.24	U	0.1	U							0.24	U	0.1	U	0.24	U	0.1	U	0.24	U	0.1	U
Nitrobenzene	98-95-3	EPA 8270C	ug/L	73	83	0.47	U	0.5	U							0.48	U	0.5	U	0.48	U	0.5	U	0.48	U	0.5	U
N-Nitrosodimethylamine	62-75-9	EPA 8270C	ug/L	0.0014	0.0014	0.29	U	2	U							0.3	U	2	U	0.29	U	2	U	0.3	U	2	U
N-Nitroso-di-n-propylamine	621-64-7	EPA 8270C	ug/L	0.094	0.1	0.21	U	0.5	U							0.22	U	0.5	U	0.21	U	0.5	U	0.22	U	0.5	U
N-Nitrosodiphenylamine	86-30-6	EPA 8270C	ug/L	130	150	0.47	U	0.5	U							0.48	U	0.5	U	0.48	U	0.5	U	0.48	U	0.5	U
Pentachlorophenol	87-86-5	EPA 8270C	ug/L	1	1	0.29	U	1	U							0.29	U	1	U	0.29	U	1	U	0.29	U	1	U
Phenanthrene	85-01-8	EPA 8270C	ug/L	1100	1100	0.23	U	0.1	U	0.018	U	0.1	U	0.018	U	0.1	U	0.24	U	0.1	U	0.23	U	0.1	U	0.24	U
Phenol	108-95-2	EPA 8270C	ug/L	2000	2000	0.26	U	0.5	U							0.27	U	0.5	U	0.27	U	0.5	U	0.27	U	0.5	U
Pyrene	129-00-0	EPA 8270C	ug/L	130	130	0.28	U	0.1	U	0.014	U	0.1	U	0.014	U	0.1	U	0.29	U	0.1	U	0.28	U	0.1	U	0.29	U
TPH-DRO (C10-C28)	NA	EPA 8015B	mg/L	NA	NA	0.14	U	0.072	J											0.046	J	0.030	U				
Ethylene Dibromide																											
Ethylene dibromide	106-93-4	EPA 8011	ug/L	0.05	0.05					0.014	U	0.01	U														
Polychlorinated Biphenyls																											
PCB-1016	12674-11-2	EPA 8082	ug/L	2.6	2.9	0.079	U	0.1	U	0.077	U	0.1	U	0.077	U	0.1	U					0.077	U	0.1	U		
PCB-1221	11104-28-2	EPA 8082	ug/L	0.33	0.37	0.094	U	0.1	U	0.092	U	0.1	U	0.091	U	0.1	U					0.092	U	0.1	U		
PCB-1232	11141-16-5	EPA 8082	ug/L	0.33	0.37	0.075	U	0.2	U	0.073	U	0.2	U	0.073	U	0.2	U					0.074	U	0.2	U		
PCB-1242	53469-21-9	EPA 8082	ug/L	0.33	0.37	0.033	U	0.1	U	0.033	U	0.1	U	0.033	U	0.1	U					0.033	U	0.1	U		
PCB-1248	12672-29-6	EPA 8082	ug/L	0.33	0.37	0.024	U	0.1	U	0.024	U	0.1	U	0.024	U	0.1	U					0.024	U	0.1	U		
PCB-1254	11097-69-1	EPA 8082	ug/L	0.33	0.37	0.038	U	0.1	U	0.037	U	0.1	U	0.037	U	0.1	U					0.037	U	0.1	U		
PCB-1260	11096-82-5	EPA 8082	ug/L	0.33	0.37	0.032	U	0.15	U	0.031	U	0.15	U	0.031	U	0.15	U					0.032	U	0.15	U		
Total PCBs	1336-36-3	EPA 8082	ug/L	NA	NA			0.1	U																		

Table 7
Groundwater Analytical Data
Former N. Penn Army Reserve Center
Norristown, Pennsylvania

Analyte	CAS Number	Method	Units	MSC ¹	Proposed MSC ²	MW-1		MW-2		MW-3		MW-4		MW-5		Potable Well									
						6/19/2014	7/16/2014	6/19/2014	7/16/2014	6/19/2014	7/16/2014	6/19/2014	7/16/2014	6/19/2014	7/17/2014	6/19/2014	7/16/2014								
Chromium	7440-47-3	EPA 6010B	mg/L	0.1	0.1	0.001	J	0.0013	U			0.0013	J	0.0013	U	0.0015	J	0.0013	U	0.0011	J	0.0013	U		
Copper	7440-50-8	EPA 6010B	mg/L	1	1	0.0019	U	0.0028	U			0.0019	U	0.0028	U	0.0019	U	0.0028	U	0.0068	U	0.0036	J		
Lead	7439-92-1	EPA 6010B	mg/L	0.005	0.005	0.0037	U	0.0047	U	0.0037	U	0.000082	U	0.0037	U	0.0047	U	0.0037	U	0.0047	U	0.0037	U	0.0061	J
Nickel	7440-02-0	EPA 6010B	mg/L	0.1	0.1	0.0045	J	0.0019	J					0.0012	J	0.0016	U	0.001	J	0.0016	U	0.00088	U	0.0016	U
Selenium	7782-49-2	EPA 6010B	mg/L	0.05	0.05	0.0058	U	0.0048	U					0.0058	U	0.0048	U	0.0058	U	0.0056	J	0.0058	U	0.0048	U
Silver	7440-22-4	EPA 6010B	mg/L	0.1	0.1	0.00053	U	0.0018	U					0.00088	J	0.0018	U	0.00053	U	0.0018	U	0.00053	U	0.0018	U
Thallium	7440-28-0	EPA 6010B	mg/L	0.002	0.002	0.0021	U	0.0051	U					0.0021	U	0.0051	U	0.0021	U	0.0051	U	0.0021	U	0.0051	U
Vanadium	7440-62-2	EPA 6010B	mg/L	0.26	0.0029	0.0005	U	0.0019	U					0.00086	J	0.0019	U	0.001	J	0.0019	U	0.0019	J	0.0019	U
Zinc	7440-66-6	EPA 6010B	mg/L	2	2	0.0018	J	0.0046	J					0.0012	J	0.002	U	0.0012	U	0.002	U	0.0043	J	0.0062	J
Mercury	7439-97-6	EPA 7470A	mg/L	0.002	0.002	0.000025	U	0.00006	U					0.000025	U	0.00006	U	0.000025	U	0.00006	U	0.000025	U	0.00006	U

Notes:

mg/L - milligram per liter

ug/L - microgram per liter

NA - Not applicable

U - Indicates the analyte was analyzed for, but not detected.

J - Estimated concentration above the method detection limit (MDL) and below the laboratory reporting limit.

1 - PA DEP Act 2 Statewide Health Standard Medium-Specific Concentrations for used aquifers, TDS ≤ 2,500 mg/L, residential use.

2 - Proposed revised MSCs as published in the PA Bulletin Vol 44, No. 20 pgs 2980-3044.

Yellow highlight and bold - indicates analyte detected above applicable MSCs.

Gray highlight - MDL is above applicable MSCs and PA DEP Practical Quantitation Limit (PQL), if published.

APPENDIX A-1
Soil Analytical Data Reports



July 17, 2014

Mark Haslett
Environmental Standards, Inc.
1140 valley Forge Rd
PO Box 810
Valley Forge, PA 19482

RE: Project: Worcester Twp
Pace Project No.: 30121444

Dear Mark Haslett:

Enclosed are the analytical results for sample(s) received by the laboratory on May 24, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised July 17, 2014, to revise the reporting limits and add qualifiers and MDLs to the results.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



David A. Pichette for
Timothy Reed
timothy.reed@pacelabs.com
Project Manager

Enclosures

cc: Joe Kraycik, Environmental Standards, Inc.
Angela Powley, Environmental Standards



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Worcester Twp

Pace Project No.: 30121444

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601

AClass DOD-ELAP Accreditation #: ADE-1544

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California/TNI Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Guam/PADEP Certification

Hawaii/PADEP Certification

Idaho Certification

Illinois/PADEP Certification

Indiana/PADEP Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188

Utah/TNI Certification #: PA014572014-4

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin/PADEP Certification

Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Worcester Twp

Pace Project No.: 30121444

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30121444001	B-SS01 @ 6"	Solid	05/22/14 13:20	05/24/14 11:00
30121444002	B-SS02 @ 6"	Solid	05/22/14 13:30	05/24/14 11:00
30121444003	B-SS03 @ 6"	Solid	05/22/14 13:50	05/24/14 11:00
30121444004	T-SS01 @ 3"	Solid	05/22/14 14:30	05/24/14 11:00
30121444005	T-SS02 @ 3"	Solid	05/22/14 14:45	05/24/14 11:00
30121444006	G-SS01 @ 3"	Solid	05/22/14 15:00	05/24/14 11:00
30121444007	G-SS02 @ 3"	Solid	05/22/14 15:10	05/24/14 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Worcester Twp
Pace Project No.: 30121444

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30121444001	B-SS01 @ 6"	EPA 6010B	CTS	14
		EPA 7471A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	32
		ASTM D2974-87	MAC	1
30121444002	B-SS02 @ 6"	EPA 6010B	CTS	14
		EPA 7471A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	32
		ASTM D2974-87	MAC	1
30121444003	B-SS03 @ 6"	EPA 6010B	CTS	14
		EPA 7471A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	32
		ASTM D2974-87	MAC	1
30121444004	T-SS01 @ 3"	EPA 8082	SJG	10
		EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	12
		EPA 8260B	JEW	14
		ASTM D2974-87	MAC	1
30121444005	T-SS02 @ 3"	EPA 8082	SJG	10
		EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	12
		EPA 8260B	JEW	14
		ASTM D2974-87	MAC	1
30121444006	G-SS01 @ 3"	EPA 8082	SJG	10
		EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	12
		EPA 8260B	JEW	14
		ASTM D2974-87	MAC	1
30121444007	G-SS02 @ 3"	EPA 8082	SJG	10
		EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	12
		EPA 8260B	JEW	14
		ASTM D2974-87	MAC	1

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8082

Description: 8082 GCS PCB

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

4 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19461

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121448001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 737471)
- PCB-1248 (Aroclor 1248)

Additional Comments:

Sample Comments:

8270 C SIM: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8082

Description: 8082 GCS PCB

Client: Environmental Standards, Inc.

Date: July 17, 2014

Sample Comments:

Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270C SIM. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

Analyte Comments:

QC Batch: OEXT/19461

C3: Relative percent difference between results from each column was greater than 40%. The higher of the two results was reported.

- G-SS01 @ 3" (Lab ID: 30121444006)
 - PCB-1254 (Aroclor 1254)
- G-SS02 @ 3" (Lab ID: 30121444007)
 - PCB-1254 (Aroclor 1254)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 6010B

Description: 6010 MET ICP

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

7 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/13099

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121444001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 736022)
 - Antimony
 - Selenium

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: MPRP/13099

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 736021)
 - Chromium

Additional Comments:

Sample Comments:

8270 C SIM: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- T-SS01 @ 3" (Lab ID: 30121444004)

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 6010B

Description: 6010 MET ICP

Client: Environmental Standards, Inc.

Date: July 17, 2014

Sample Comments:

8270 C SIM: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270C SIM. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

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PROJECT NARRATIVE

Project: Worcester Twp
Pace Project No.: 30121444

Method: EPA 7471A
Description: 7471 Mercury
Client: Environmental Standards, Inc.
Date: July 17, 2014

General Information:

3 samples were analyzed for EPA 7471A. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7471A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8270C by SIM

Description: 8270 MSSV PAH by SIM

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

4 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19444

S0: Surrogate recovery outside laboratory control limits.

- LCS (Lab ID: 736953)
- 2-Fluorobiphenyl (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19444

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121245001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 736954)
 - Phenanthrene
- MSD (Lab ID: 736955)
 - Phenanthrene

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8270C by SIM

Description: 8270 MSSV PAH by SIM

Client: Environmental Standards, Inc.

Date: July 17, 2014

Sample Comments:

8270 C SIM: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270C SIM. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8270C

Description: 8270 MSSV FULL LIST MICROWAVE

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

3 samples were analyzed for EPA 8270C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19433

S0: Surrogate recovery outside laboratory control limits.

- BLANK (Lab ID: 736632)
- 2-Fluorophenol (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/19433

N2: The lab does not hold TNI accreditation for this parameter.

- B-SS01 @ 6" (Lab ID: 30121444001)
- Azobenzene

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8270C

Description: 8270 MSSV FULL LIST MICROWAVE

Client: Environmental Standards, Inc.

Date: July 17, 2014

Analyte Comments:

QC Batch: OEXT/19433

N2: The lab does not hold TNI accreditation for this parameter.

- B-SS02 @ 6" (Lab ID: 30121444002)
 - Azobenzene
- B-SS03 @ 6" (Lab ID: 30121444003)
 - Azobenzene

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8260B

Description: 8260 MSV 5030 Low Level

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/19778

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8260B

Description: 8260 MSV PA UST

Client: Environmental Standards, Inc.

Date: July 17, 2014

General Information:

4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/19813

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- G-SS01 @ 3" (Lab ID: 30121444006)
- 1,2-Dichloroethane-d4 (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/19813

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Sample Comments:

8270 C SIM: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

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PROJECT NARRATIVE

Project: Worcester Twp

Pace Project No.: 30121444

Method: EPA 8260B

Description: 8260 MSV PA UST

Client: Environmental Standards, Inc.

Date: July 17, 2014

Sample Comments:

Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270C SIM. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

- T-SS01 @ 3" (Lab ID: 30121444004)
- T-SS02 @ 3" (Lab ID: 30121444005)
- G-SS01 @ 3" (Lab ID: 30121444006)
- G-SS02 @ 3" (Lab ID: 30121444007)

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS01 @ 6" Lab ID: 30121444001 Collected: 05/22/14 13:20 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.52 U	mg/kg	0.52	0.32	1	05/29/14 10:14	05/30/14 07:03	7440-36-0	
Arsenic	5.7	mg/kg	0.43	0.31	1	05/29/14 10:14	05/30/14 07:03	7440-38-2	
Barium	101	mg/kg	1.7	0.048	1	05/29/14 10:14	05/30/14 07:03	7440-39-3	
Beryllium	1.0	mg/kg	0.17	0.020	1	05/29/14 10:14	05/30/14 07:03	7440-41-7	
Cadmium	0.29	mg/kg	0.26	0.034	1	05/29/14 10:14	05/30/14 07:03	7440-43-9	
Chromium	21.2	mg/kg	0.43	0.059	1	05/29/14 10:14	05/30/14 07:03	7440-47-3	
Copper	16.0	mg/kg	0.86	0.16	1	05/29/14 10:14	05/30/14 07:03	7440-50-8	
Lead	30.0	mg/kg	0.43	0.23	1	05/29/14 10:14	05/30/14 07:03	7439-92-1	
Nickel	14.1	mg/kg	1.7	0.12	1	05/29/14 10:14	05/30/14 07:03	7440-02-0	
Selenium	0.69 U	mg/kg	0.69	0.50	1	05/29/14 10:14	05/30/14 07:03	7782-49-2	
Silver	0.52 U	mg/kg	0.52	0.046	1	05/29/14 10:14	05/30/14 07:03	7440-22-4	
Thallium	1.7 U	mg/kg	1.7	0.28	1	05/29/14 10:14	05/30/14 07:03	7440-28-0	
Vanadium	32.0	mg/kg	0.86	0.049	1	05/29/14 10:14	05/30/14 07:03	7440-62-2	
Zinc	54.1	mg/kg	0.86	0.39	1	05/29/14 10:14	05/30/14 07:03	7440-66-6	

7471 Mercury

Analytical Method: EPA 7471A Preparation Method: EPA 7471A

Mercury	0.038J	mg/kg	0.11	0.0024	1	05/29/14 13:42	05/30/14 09:00	7439-97-6	
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8270 MSSV FULL LIST MICROWAVE

Analytical Method: EPA 8270C Preparation Method: EPA 3546

Acenaphthene	392 U	ug/kg	392	45.7	1	05/30/14 09:15	06/04/14 19:11	83-32-9	
Acenaphthylene	392 U	ug/kg	392	45.1	1	05/30/14 09:15	06/04/14 19:11	208-96-8	
Anthracene	392 U	ug/kg	392	61.4	1	05/30/14 09:15	06/04/14 19:11	120-12-7	
Azobenzene	392 U	ug/kg	392	41.1	1	05/30/14 09:15	06/04/14 19:11	103-33-3	N2
Benzidine	3890 U	ug/kg	3890	3890	1	05/30/14 09:15	06/27/14 15:43	92-87-5	
Benzo(a)anthracene	126J	ug/kg	392	45.4	1	05/30/14 09:15	06/04/14 19:11	56-55-3	
Benzo(a)pyrene	392 U	ug/kg	392	132	1	05/30/14 09:15	06/04/14 19:11	50-32-8	
Benzo(b)fluoranthene	232J	ug/kg	392	77.4	1	05/30/14 09:15	06/04/14 19:11	205-99-2	
Benzo(g,h,i)perylene	392 U	ug/kg	392	112	1	05/30/14 09:15	06/04/14 19:11	191-24-2	
Benzo(k)fluoranthene	392 U	ug/kg	392	140	1	05/30/14 09:15	06/04/14 19:11	207-08-9	
4-Bromophenylphenyl ether	392 U	ug/kg	392	58.0	1	05/30/14 09:15	06/04/14 19:11	101-55-3	
Butylbenzylphthalate	392 U	ug/kg	392	45.0	1	05/30/14 09:15	06/04/14 19:11	85-68-7	
bis(2-Chloroethoxy)methane	392 U	ug/kg	392	64.2	1	05/30/14 09:15	06/04/14 19:11	111-91-1	
bis(2-Chloroethyl) ether	392 U	ug/kg	392	185	1	05/30/14 09:15	06/04/14 19:11	111-44-4	
bis(2-Chloroisopropyl) ether	392 U	ug/kg	392	52.1	1	05/30/14 09:15	06/04/14 19:11	108-60-1	
2-Chloronaphthalene	392 U	ug/kg	392	41.2	1	05/30/14 09:15	06/04/14 19:11	91-58-7	
2-Chlorophenol	392 U	ug/kg	392	50.1	1	05/30/14 09:15	06/04/14 19:11	95-57-8	
4-Chlorophenylphenyl ether	392 U	ug/kg	392	53.5	1	05/30/14 09:15	06/04/14 19:11	7005-72-3	
Chrysene	119J	ug/kg	392	84.5	1	05/30/14 09:15	06/04/14 19:11	218-01-9	
Dibenz(a,h)anthracene	392 U	ug/kg	392	132	1	05/30/14 09:15	06/04/14 19:11	53-70-3	
1,2-Dichlorobenzene	392 U	ug/kg	392	58.3	1	05/30/14 09:15	06/04/14 19:11	95-50-1	
1,3-Dichlorobenzene	392 U	ug/kg	392	65.1	1	05/30/14 09:15	06/04/14 19:11	541-73-1	
1,4-Dichlorobenzene	392 U	ug/kg	392	55.2	1	05/30/14 09:15	06/04/14 19:11	106-46-7	
3,3'-Dichlorobenzidine	392 U	ug/kg	392	42.8	1	05/30/14 09:15	06/04/14 19:11	91-94-1	
2,4-Dichlorophenol	392 U	ug/kg	392	67.4	1	05/30/14 09:15	06/04/14 19:11	120-83-2	
Diethylphthalate	392 U	ug/kg	392	43.2	1	05/30/14 09:15	06/04/14 19:11	84-66-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS01 @ 6" Lab ID: 30121444001 Collected: 05/22/14 13:20 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
2,4-Dimethylphenol	392 U	ug/kg	392	69.3	1	05/30/14 09:15	06/04/14 19:11	105-67-9	
Dimethylphthalate	392 U	ug/kg	392	55.7	1	05/30/14 09:15	06/04/14 19:11	131-11-3	
Di-n-butylphthalate	392 U	ug/kg	392	65.0	1	05/30/14 09:15	06/04/14 19:11	84-74-2	
4,6-Dinitro-2-methylphenol	981 U	ug/kg	981	111	1	05/30/14 09:15	06/04/14 19:11	534-52-1	
2,4-Dinitrophenol	981 U	ug/kg	981	356	1	05/30/14 09:15	06/04/14 19:11	51-28-5	
2,4-Dinitrotoluene	392 U	ug/kg	392	82.1	1	05/30/14 09:15	06/04/14 19:11	121-14-2	
2,6-Dinitrotoluene	392 U	ug/kg	392	51.5	1	05/30/14 09:15	06/04/14 19:11	606-20-2	
Di-n-octylphthalate	392 U	ug/kg	392	72.3	1	05/30/14 09:15	06/04/14 19:11	117-84-0	
bis(2-Ethylhexyl)phthalate	329J	ug/kg	392	134	1	05/30/14 09:15	06/04/14 19:11	117-81-7	
Fluoranthene	169J	ug/kg	392	60.0	1	05/30/14 09:15	06/04/14 19:11	206-44-0	
Fluorene	392 U	ug/kg	392	55.2	1	05/30/14 09:15	06/04/14 19:11	86-73-7	
Hexachloro-1,3-butadiene	392 U	ug/kg	392	69.5	1	05/30/14 09:15	06/04/14 19:11	87-68-3	
Hexachlorobenzene	392 U	ug/kg	392	50.7	1	05/30/14 09:15	06/04/14 19:11	118-74-1	
Hexachlorocyclopentadiene	392 U	ug/kg	392	126	1	05/30/14 09:15	06/04/14 19:11	77-47-4	
Hexachloroethane	392 U	ug/kg	392	60.3	1	05/30/14 09:15	06/04/14 19:11	67-72-1	
Indeno(1,2,3-cd)pyrene	392 U	ug/kg	392	95.8	1	05/30/14 09:15	06/04/14 19:11	193-39-5	
Isophorone	392 U	ug/kg	392	42.9	1	05/30/14 09:15	06/04/14 19:11	78-59-1	
2-Methylphenol(o-Cresol)	392 U	ug/kg	392	69.4	1	05/30/14 09:15	06/04/14 19:11	95-48-7	
3&4-Methylphenol(m&p Cresol)	785 U	ug/kg	785	79.0	1	05/30/14 09:15	06/04/14 19:11		
Naphthalene	392 U	ug/kg	392	52.3	1	05/30/14 09:15	06/04/14 19:11	91-20-3	
Nitrobenzene	392 U	ug/kg	392	61.6	1	05/30/14 09:15	06/04/14 19:11	98-95-3	
2-Nitrophenol	392 U	ug/kg	392	44.1	1	05/30/14 09:15	06/04/14 19:11	88-75-5	
4-Nitrophenol	392 U	ug/kg	392	163	1	05/30/14 09:15	06/04/14 19:11	100-02-7	
N-Nitrosodimethylamine	392 U	ug/kg	392	50.4	1	05/30/14 09:15	06/04/14 19:11	62-75-9	
N-Nitroso-di-n-propylamine	392 U	ug/kg	392	46.4	1	05/30/14 09:15	06/04/14 19:11	621-64-7	
N-Nitrosodiphenylamine	392 U	ug/kg	392	39.7	1	05/30/14 09:15	06/04/14 19:11	86-30-6	
Pentachlorophenol	981 U	ug/kg	981	98.1	1	05/30/14 09:15	06/04/14 19:11	87-86-5	
Phenanthrene	392 U	ug/kg	392	72.4	1	05/30/14 09:15	06/04/14 19:11	85-01-8	
Phenol	392 U	ug/kg	392	95.3	1	05/30/14 09:15	06/04/14 19:11	108-95-2	
Pyrene	183J	ug/kg	392	59.7	1	05/30/14 09:15	06/04/14 19:11	129-00-0	
1,2,4-Trichlorobenzene	392 U	ug/kg	392	60.1	1	05/30/14 09:15	06/04/14 19:11	120-82-1	
2,4,6-Trichlorophenol	392 U	ug/kg	392	71.7	1	05/30/14 09:15	06/04/14 19:11	88-06-2	

Surrogates

Nitrobenzene-d5 (S)	87 %		34-107		1	05/30/14 09:15	06/04/14 19:11	4165-60-0	
2-Fluorobiphenyl (S)	90 %		38-107		1	05/30/14 09:15	06/04/14 19:11	321-60-8	
Terphenyl-d14 (S)	95 %		34-129		1	05/30/14 09:15	06/04/14 19:11	1718-51-0	
Phenol-d6 (S)	73 %		20-102		1	05/30/14 09:15	06/04/14 19:11	13127-88-3	
2-Fluorophenol (S)	70 %		29-88		1	05/30/14 09:15	06/04/14 19:11	367-12-4	
2,4,6-Tribromophenol (S)	87 %		13-114		1	05/30/14 09:15	06/04/14 19:11	118-79-6	

8260 MSV 5030 Low Level

Analytical Method: EPA 8260B

Acrolein	ND	ug/kg	11.6	6.3	1		05/30/14 21:11	107-02-8	
Acrylonitrile	5.8 U	ug/kg	5.8	3.8	1		05/30/14 21:11	107-13-1	
Benzene	5.8 U	ug/kg	5.8	0.91	1		05/30/14 21:11	71-43-2	
Bromodichloromethane	5.8 U	ug/kg	5.8	2.1	1		05/30/14 21:11	75-27-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS01 @ 6" Lab ID: 30121444001 Collected: 05/22/14 13:20 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
Bromoform	5.8 U	ug/kg	5.8	2.9	1		05/30/14 21:11	75-25-2	
Bromomethane	5.8 U	ug/kg	5.8	3.4	1		05/30/14 21:11	74-83-9	
Carbon tetrachloride	5.8 U	ug/kg	5.8	1.0	1		05/30/14 21:11	56-23-5	
Chlorobenzene	5.8 U	ug/kg	5.8	1.2	1		05/30/14 21:11	108-90-7	
Chloroethane	5.8 U	ug/kg	5.8	1.9	1		05/30/14 21:11	75-00-3	
2-Chloroethylvinyl ether	11.6 U	ug/kg	11.6	0.61	1		05/30/14 21:11	110-75-8	
Chloroform	5.8 U	ug/kg	5.8	0.83	1		05/30/14 21:11	67-66-3	
Chloromethane	5.8 U	ug/kg	5.8	1.2	1		05/30/14 21:11	74-87-3	
Dibromochloromethane	5.8 U	ug/kg	5.8	1.8	1		05/30/14 21:11	124-48-1	
1,1-Dichloroethane	5.8 U	ug/kg	5.8	0.92	1		05/30/14 21:11	75-34-3	
1,2-Dichloroethane	5.8 U	ug/kg	5.8	1.1	1		05/30/14 21:11	107-06-2	
1,1-Dichloroethene	5.8 U	ug/kg	5.8	0.94	1		05/30/14 21:11	75-35-4	
trans-1,2-Dichloroethene	5.8 U	ug/kg	5.8	0.95	1		05/30/14 21:11	156-60-5	
1,2-Dichloropropane	5.8 U	ug/kg	5.8	1.9	1		05/30/14 21:11	78-87-5	
cis-1,3-Dichloropropene	5.8 U	ug/kg	5.8	1.8	1		05/30/14 21:11	10061-01-5	
trans-1,3-Dichloropropene	5.8 U	ug/kg	5.8	1.9	1		05/30/14 21:11	10061-02-6	
Ethylbenzene	5.8 U	ug/kg	5.8	3.0	1		05/30/14 21:11	100-41-4	
Methylene Chloride	5.8 U	ug/kg	5.8	1.6	1		05/30/14 21:11	75-09-2	
1,1,2,2-Tetrachloroethane	5.8 U	ug/kg	5.8	1.0	1		05/30/14 21:11	79-34-5	
Tetrachloroethene	5.8 U	ug/kg	5.8	0.84	1		05/30/14 21:11	127-18-4	
Toluene	5.8 U	ug/kg	5.8	0.75	1		05/30/14 21:11	108-88-3	
1,1,1-Trichloroethane	5.8 U	ug/kg	5.8	3.0	1		05/30/14 21:11	71-55-6	
1,1,2-Trichloroethane	5.8 U	ug/kg	5.8	1.1	1		05/30/14 21:11	79-00-5	
Trichloroethene	5.8 U	ug/kg	5.8	0.88	1		05/30/14 21:11	79-01-6	
Vinyl chloride	5.8 U	ug/kg	5.8	0.94	1		05/30/14 21:11	75-01-4	
Surrogates									
Toluene-d8 (S)	89 %		81-117		1		05/30/14 21:11	2037-26-5	
4-Bromofluorobenzene (S)	102 %		74-121		1		05/30/14 21:11	460-00-4	
1,2-Dichloroethane-d4 (S)	114 %		80-120		1		05/30/14 21:11	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	16.9 %		0.10	0.10	1		06/02/14 16:46		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS02 @ 6" Lab ID: 30121444002 Collected: 05/22/14 13:30 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.50 U	mg/kg	0.50	0.31	1	05/29/14 10:14	05/30/14 07:10	7440-36-0	
Arsenic	5.6	mg/kg	0.42	0.30	1	05/29/14 10:14	05/30/14 07:10	7440-38-2	
Barium	106	mg/kg	1.7	0.047	1	05/29/14 10:14	05/30/14 07:10	7440-39-3	
Beryllium	1.2	mg/kg	0.17	0.020	1	05/29/14 10:14	05/30/14 07:10	7440-41-7	
Cadmium	0.11J	mg/kg	0.25	0.033	1	05/29/14 10:14	05/30/14 07:10	7440-43-9	
Chromium	21.4	mg/kg	0.42	0.058	1	05/29/14 10:14	05/30/14 07:10	7440-47-3	
Copper	13.8	mg/kg	0.84	0.15	1	05/29/14 10:14	05/30/14 07:10	7440-50-8	
Lead	23.6	mg/kg	0.42	0.22	1	05/29/14 10:14	05/30/14 07:10	7439-92-1	
Nickel	13.0	mg/kg	1.7	0.11	1	05/29/14 10:14	05/30/14 07:10	7440-02-0	
Selenium	0.67 U	mg/kg	0.67	0.48	1	05/29/14 10:14	05/30/14 07:10	7782-49-2	
Silver	0.50 U	mg/kg	0.50	0.045	1	05/29/14 10:14	05/30/14 07:10	7440-22-4	
Thallium	1.7 U	mg/kg	1.7	0.28	1	05/29/14 10:14	05/30/14 07:10	7440-28-0	
Vanadium	32.3	mg/kg	0.84	0.048	1	05/29/14 10:14	05/30/14 07:10	7440-62-2	
Zinc	44.2	mg/kg	0.84	0.38	1	05/29/14 10:14	05/30/14 07:10	7440-66-6	
7471 Mercury									
Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.036J	mg/kg	0.11	0.0024	1	05/29/14 13:42	05/30/14 09:01	7439-97-6	
8270 MSSV FULL LIST MICROWAVE									
Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	394 U	ug/kg	394	45.9	1	05/30/14 09:15	06/04/14 19:31	83-32-9	
Acenaphthylene	394 U	ug/kg	394	45.3	1	05/30/14 09:15	06/04/14 19:31	208-96-8	
Anthracene	394 U	ug/kg	394	61.6	1	05/30/14 09:15	06/04/14 19:31	120-12-7	
Azobenzene	394 U	ug/kg	394	41.3	1	05/30/14 09:15	06/04/14 19:31	103-33-3	N2
Benzidine	3900 U	ug/kg	3900	3900	1	05/30/14 09:15	06/27/14 16:02	92-87-5	
Benzo(a)anthracene	394 U	ug/kg	394	45.5	1	05/30/14 09:15	06/04/14 19:31	56-55-3	
Benzo(a)pyrene	394 U	ug/kg	394	133	1	05/30/14 09:15	06/04/14 19:31	50-32-8	
Benzo(b)fluoranthene	394 U	ug/kg	394	77.7	1	05/30/14 09:15	06/04/14 19:31	205-99-2	
Benzo(g,h,i)perylene	394 U	ug/kg	394	113	1	05/30/14 09:15	06/04/14 19:31	191-24-2	
Benzo(k)fluoranthene	394 U	ug/kg	394	141	1	05/30/14 09:15	06/04/14 19:31	207-08-9	
4-Bromophenylphenyl ether	394 U	ug/kg	394	58.2	1	05/30/14 09:15	06/04/14 19:31	101-55-3	
Butylbenzylphthalate	394 U	ug/kg	394	45.2	1	05/30/14 09:15	06/04/14 19:31	85-68-7	
bis(2-Chloroethoxy)methane	394 U	ug/kg	394	64.5	1	05/30/14 09:15	06/04/14 19:31	111-91-1	
bis(2-Chloroethyl) ether	394 U	ug/kg	394	186	1	05/30/14 09:15	06/04/14 19:31	111-44-4	
bis(2-Chloroisopropyl) ether	394 U	ug/kg	394	52.3	1	05/30/14 09:15	06/04/14 19:31	108-60-1	
2-Chloronaphthalene	394 U	ug/kg	394	41.4	1	05/30/14 09:15	06/04/14 19:31	91-58-7	
2-Chlorophenol	394 U	ug/kg	394	50.3	1	05/30/14 09:15	06/04/14 19:31	95-57-8	
4-Chlorophenylphenyl ether	394 U	ug/kg	394	53.7	1	05/30/14 09:15	06/04/14 19:31	7005-72-3	
Chrysene	394 U	ug/kg	394	84.8	1	05/30/14 09:15	06/04/14 19:31	218-01-9	
Dibenz(a,h)anthracene	394 U	ug/kg	394	133	1	05/30/14 09:15	06/04/14 19:31	53-70-3	
1,2-Dichlorobenzene	394 U	ug/kg	394	58.6	1	05/30/14 09:15	06/04/14 19:31	95-50-1	
1,3-Dichlorobenzene	394 U	ug/kg	394	65.4	1	05/30/14 09:15	06/04/14 19:31	541-73-1	
1,4-Dichlorobenzene	394 U	ug/kg	394	55.5	1	05/30/14 09:15	06/04/14 19:31	106-46-7	
3,3'-Dichlorobenzidine	394 U	ug/kg	394	42.9	1	05/30/14 09:15	06/04/14 19:31	91-94-1	
2,4-Dichlorophenol	394 U	ug/kg	394	67.7	1	05/30/14 09:15	06/04/14 19:31	120-83-2	
Diethylphthalate	394 U	ug/kg	394	43.4	1	05/30/14 09:15	06/04/14 19:31	84-66-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS02 @ 6" Lab ID: 30121444002 Collected: 05/22/14 13:30 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
2,4-Dimethylphenol	394 U	ug/kg	394	69.6	1	05/30/14 09:15	06/04/14 19:31	105-67-9	
Dimethylphthalate	394 U	ug/kg	394	56.0	1	05/30/14 09:15	06/04/14 19:31	131-11-3	
Di-n-butylphthalate	394 U	ug/kg	394	65.3	1	05/30/14 09:15	06/04/14 19:31	84-74-2	
4,6-Dinitro-2-methylphenol	985 U	ug/kg	985	112	1	05/30/14 09:15	06/04/14 19:31	534-52-1	
2,4-Dinitrophenol	985 U	ug/kg	985	357	1	05/30/14 09:15	06/04/14 19:31	51-28-5	
2,4-Dinitrotoluene	394 U	ug/kg	394	82.5	1	05/30/14 09:15	06/04/14 19:31	121-14-2	
2,6-Dinitrotoluene	394 U	ug/kg	394	51.7	1	05/30/14 09:15	06/04/14 19:31	606-20-2	
Di-n-octylphthalate	394 U	ug/kg	394	72.6	1	05/30/14 09:15	06/04/14 19:31	117-84-0	
bis(2-Ethylhexyl)phthalate	317J	ug/kg	394	135	1	05/30/14 09:15	06/04/14 19:31	117-81-7	
Fluoranthene	394 U	ug/kg	394	60.2	1	05/30/14 09:15	06/04/14 19:31	206-44-0	
Fluorene	394 U	ug/kg	394	55.5	1	05/30/14 09:15	06/04/14 19:31	86-73-7	
Hexachloro-1,3-butadiene	394 U	ug/kg	394	69.8	1	05/30/14 09:15	06/04/14 19:31	87-68-3	
Hexachlorobenzene	394 U	ug/kg	394	50.9	1	05/30/14 09:15	06/04/14 19:31	118-74-1	
Hexachlorocyclopentadiene	394 U	ug/kg	394	127	1	05/30/14 09:15	06/04/14 19:31	77-47-4	
Hexachloroethane	394 U	ug/kg	394	60.6	1	05/30/14 09:15	06/04/14 19:31	67-72-1	
Indeno(1,2,3-cd)pyrene	394 U	ug/kg	394	96.2	1	05/30/14 09:15	06/04/14 19:31	193-39-5	
Isophorone	394 U	ug/kg	394	43.1	1	05/30/14 09:15	06/04/14 19:31	78-59-1	
2-Methylphenol(o-Cresol)	394 U	ug/kg	394	69.7	1	05/30/14 09:15	06/04/14 19:31	95-48-7	
3&4-Methylphenol(m&p Cresol)	788 U	ug/kg	788	79.4	1	05/30/14 09:15	06/04/14 19:31		
Naphthalene	394 U	ug/kg	394	52.5	1	05/30/14 09:15	06/04/14 19:31	91-20-3	
Nitrobenzene	394 U	ug/kg	394	61.9	1	05/30/14 09:15	06/04/14 19:31	98-95-3	
2-Nitrophenol	394 U	ug/kg	394	44.2	1	05/30/14 09:15	06/04/14 19:31	88-75-5	
4-Nitrophenol	394 U	ug/kg	394	163	1	05/30/14 09:15	06/04/14 19:31	100-02-7	
N-Nitrosodimethylamine	394 U	ug/kg	394	50.6	1	05/30/14 09:15	06/04/14 19:31	62-75-9	
N-Nitroso-di-n-propylamine	394 U	ug/kg	394	46.6	1	05/30/14 09:15	06/04/14 19:31	621-64-7	
N-Nitrosodiphenylamine	394 U	ug/kg	394	39.9	1	05/30/14 09:15	06/04/14 19:31	86-30-6	
Pentachlorophenol	985 U	ug/kg	985	98.5	1	05/30/14 09:15	06/04/14 19:31	87-86-5	
Phenanthrene	394 U	ug/kg	394	72.8	1	05/30/14 09:15	06/04/14 19:31	85-01-8	
Phenol	394 U	ug/kg	394	95.7	1	05/30/14 09:15	06/04/14 19:31	108-95-2	
Pyrene	394 U	ug/kg	394	60.0	1	05/30/14 09:15	06/04/14 19:31	129-00-0	
1,2,4-Trichlorobenzene	394 U	ug/kg	394	60.3	1	05/30/14 09:15	06/04/14 19:31	120-82-1	
2,4,6-Trichlorophenol	394 U	ug/kg	394	72.0	1	05/30/14 09:15	06/04/14 19:31	88-06-2	

Surrogates

Nitrobenzene-d5 (S)	89 %		34-107		1	05/30/14 09:15	06/04/14 19:31	4165-60-0	
2-Fluorobiphenyl (S)	82 %		38-107		1	05/30/14 09:15	06/04/14 19:31	321-60-8	
Terphenyl-d14 (S)	88 %		34-129		1	05/30/14 09:15	06/04/14 19:31	1718-51-0	
Phenol-d6 (S)	63 %		20-102		1	05/30/14 09:15	06/04/14 19:31	13127-88-3	
2-Fluorophenol (S)	53 %		29-88		1	05/30/14 09:15	06/04/14 19:31	367-12-4	
2,4,6-Tribromophenol (S)	81 %		13-114		1	05/30/14 09:15	06/04/14 19:31	118-79-6	

8260 MSV 5030 Low Level

Analytical Method: EPA 8260B

Acrolein	ND	ug/kg	11.5	6.2	1		05/30/14 21:36	107-02-8	
Acrylonitrile	5.7 U	ug/kg	5.7	3.8	1		05/30/14 21:36	107-13-1	
Benzene	5.7 U	ug/kg	5.7	0.90	1		05/30/14 21:36	71-43-2	
Bromodichloromethane	5.7 U	ug/kg	5.7	2.1	1		05/30/14 21:36	75-27-4	

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS02 @ 6" **Lab ID: 30121444002** Collected: 05/22/14 13:30 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
Bromoform	5.7 U	ug/kg	5.7	2.9	1		05/30/14 21:36	75-25-2	
Bromomethane	5.7 U	ug/kg	5.7	3.4	1		05/30/14 21:36	74-83-9	
Carbon tetrachloride	5.7 U	ug/kg	5.7	1.0	1		05/30/14 21:36	56-23-5	
Chlorobenzene	5.7 U	ug/kg	5.7	1.1	1		05/30/14 21:36	108-90-7	
Chloroethane	5.7 U	ug/kg	5.7	1.9	1		05/30/14 21:36	75-00-3	
2-Chloroethylvinyl ether	11.5 U	ug/kg	11.5	0.60	1		05/30/14 21:36	110-75-8	
Chloroform	5.7 U	ug/kg	5.7	0.82	1		05/30/14 21:36	67-66-3	
Chloromethane	5.7 U	ug/kg	5.7	1.2	1		05/30/14 21:36	74-87-3	
Dibromochloromethane	5.7 U	ug/kg	5.7	1.8	1		05/30/14 21:36	124-48-1	
1,1-Dichloroethane	5.7 U	ug/kg	5.7	0.91	1		05/30/14 21:36	75-34-3	
1,2-Dichloroethane	5.7 U	ug/kg	5.7	1.0	1		05/30/14 21:36	107-06-2	
1,1-Dichloroethene	5.7 U	ug/kg	5.7	0.93	1		05/30/14 21:36	75-35-4	
trans-1,2-Dichloroethene	5.7 U	ug/kg	5.7	0.94	1		05/30/14 21:36	156-60-5	
1,2-Dichloropropane	5.7 U	ug/kg	5.7	1.9	1		05/30/14 21:36	78-87-5	
cis-1,3-Dichloropropene	5.7 U	ug/kg	5.7	1.8	1		05/30/14 21:36	10061-01-5	
trans-1,3-Dichloropropene	5.7 U	ug/kg	5.7	1.9	1		05/30/14 21:36	10061-02-6	
Ethylbenzene	5.7 U	ug/kg	5.7	3.0	1		05/30/14 21:36	100-41-4	
Methylene Chloride	5.7 U	ug/kg	5.7	1.5	1		05/30/14 21:36	75-09-2	
1,1,2,2-Tetrachloroethane	5.7 U	ug/kg	5.7	1.0	1		05/30/14 21:36	79-34-5	
Tetrachloroethene	5.7 U	ug/kg	5.7	0.83	1		05/30/14 21:36	127-18-4	
Toluene	5.7 U	ug/kg	5.7	0.74	1		05/30/14 21:36	108-88-3	
1,1,1-Trichloroethane	5.7 U	ug/kg	5.7	3.0	1		05/30/14 21:36	71-55-6	
1,1,2-Trichloroethane	5.7 U	ug/kg	5.7	1.1	1		05/30/14 21:36	79-00-5	
Trichloroethene	5.7 U	ug/kg	5.7	0.87	1		05/30/14 21:36	79-01-6	
Vinyl chloride	5.7 U	ug/kg	5.7	0.93	1		05/30/14 21:36	75-01-4	
Surrogates									
Toluene-d8 (S)	91	%	81-117		1		05/30/14 21:36	2037-26-5	
4-Bromofluorobenzene (S)	102	%	74-121		1		05/30/14 21:36	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	80-120		1		05/30/14 21:36	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	16.0	%	0.10	0.10	1		06/02/14 16:47		

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS03 @ 6" Lab ID: 30121444003 Collected: 05/22/14 13:50 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.54 U	mg/kg	0.54	0.33	1	05/29/14 10:14	05/30/14 07:12	7440-36-0	
Arsenic	6.7	mg/kg	0.45	0.32	1	05/29/14 10:14	05/30/14 07:12	7440-38-2	
Barium	91.4	mg/kg	1.8	0.050	1	05/29/14 10:14	05/30/14 07:12	7440-39-3	
Beryllium	0.95	mg/kg	0.18	0.021	1	05/29/14 10:14	05/30/14 07:12	7440-41-7	
Cadmium	0.13J	mg/kg	0.27	0.035	1	05/29/14 10:14	05/30/14 07:12	7440-43-9	
Chromium	21.3	mg/kg	0.45	0.061	1	05/29/14 10:14	05/30/14 07:12	7440-47-3	
Copper	20.5	mg/kg	0.89	0.16	1	05/29/14 10:14	05/30/14 07:12	7440-50-8	
Lead	25.1	mg/kg	0.45	0.24	1	05/29/14 10:14	05/30/14 07:12	7439-92-1	
Nickel	14.7	mg/kg	1.8	0.12	1	05/29/14 10:14	05/30/14 07:12	7440-02-0	
Selenium	0.71 U	mg/kg	0.71	0.51	1	05/29/14 10:14	05/30/14 07:12	7782-49-2	
Silver	0.54 U	mg/kg	0.54	0.047	1	05/29/14 10:14	05/30/14 07:12	7440-22-4	
Thallium	1.8 U	mg/kg	1.8	0.29	1	05/29/14 10:14	05/30/14 07:12	7440-28-0	
Vanadium	33.1	mg/kg	0.89	0.051	1	05/29/14 10:14	05/30/14 07:12	7440-62-2	
Zinc	49.4	mg/kg	0.89	0.40	1	05/29/14 10:14	05/30/14 07:12	7440-66-6	
7471 Mercury									
Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.035J	mg/kg	0.11	0.0025	1	05/29/14 13:42	05/30/14 09:06	7439-97-6	
8270 MSSV FULL LIST MICROWAVE									
Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	403 U	ug/kg	403	46.9	1	05/30/14 09:15	06/04/14 19:50	83-32-9	
Acenaphthylene	403 U	ug/kg	403	46.3	1	05/30/14 09:15	06/04/14 19:50	208-96-8	
Anthracene	403 U	ug/kg	403	63.0	1	05/30/14 09:15	06/04/14 19:50	120-12-7	
Azobenzene	403 U	ug/kg	403	42.2	1	05/30/14 09:15	06/04/14 19:50	103-33-3	N2
Benzidine	3990 U	ug/kg	3990	3990	1	05/30/14 09:15	06/27/14 16:22	92-87-5	
Benzo(a)anthracene	403 U	ug/kg	403	46.6	1	05/30/14 09:15	06/04/14 19:50	56-55-3	
Benzo(a)pyrene	403 U	ug/kg	403	136	1	05/30/14 09:15	06/04/14 19:50	50-32-8	
Benzo(b)fluoranthene	117J	ug/kg	403	79.5	1	05/30/14 09:15	06/04/14 19:50	205-99-2	
Benzo(g,h,i)perylene	403 U	ug/kg	403	116	1	05/30/14 09:15	06/04/14 19:50	191-24-2	
Benzo(k)fluoranthene	403 U	ug/kg	403	144	1	05/30/14 09:15	06/04/14 19:50	207-08-9	
4-Bromophenylphenyl ether	403 U	ug/kg	403	59.5	1	05/30/14 09:15	06/04/14 19:50	101-55-3	
Butylbenzylphthalate	403 U	ug/kg	403	46.2	1	05/30/14 09:15	06/04/14 19:50	85-68-7	
bis(2-Chloroethoxy)methane	403 U	ug/kg	403	65.9	1	05/30/14 09:15	06/04/14 19:50	111-91-1	
bis(2-Chloroethyl) ether	403 U	ug/kg	403	190	1	05/30/14 09:15	06/04/14 19:50	111-44-4	
bis(2-Chloroisopropyl) ether	403 U	ug/kg	403	53.5	1	05/30/14 09:15	06/04/14 19:50	108-60-1	
2-Chloronaphthalene	403 U	ug/kg	403	42.3	1	05/30/14 09:15	06/04/14 19:50	91-58-7	
2-Chlorophenol	403 U	ug/kg	403	51.4	1	05/30/14 09:15	06/04/14 19:50	95-57-8	
4-Chlorophenylphenyl ether	403 U	ug/kg	403	54.9	1	05/30/14 09:15	06/04/14 19:50	7005-72-3	
Chrysene	403 U	ug/kg	403	86.8	1	05/30/14 09:15	06/04/14 19:50	218-01-9	
Dibenz(a,h)anthracene	403 U	ug/kg	403	136	1	05/30/14 09:15	06/04/14 19:50	53-70-3	
1,2-Dichlorobenzene	403 U	ug/kg	403	59.9	1	05/30/14 09:15	06/04/14 19:50	95-50-1	
1,3-Dichlorobenzene	403 U	ug/kg	403	66.9	1	05/30/14 09:15	06/04/14 19:50	541-73-1	
1,4-Dichlorobenzene	403 U	ug/kg	403	56.7	1	05/30/14 09:15	06/04/14 19:50	106-46-7	
3,3'-Dichlorobenzidine	403 U	ug/kg	403	43.9	1	05/30/14 09:15	06/04/14 19:50	91-94-1	
2,4-Dichlorophenol	403 U	ug/kg	403	69.2	1	05/30/14 09:15	06/04/14 19:50	120-83-2	
Diethylphthalate	403 U	ug/kg	403	44.4	1	05/30/14 09:15	06/04/14 19:50	84-66-2	

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS03 @ 6" Lab ID: 30121444003 Collected: 05/22/14 13:50 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
2,4-Dimethylphenol	403 U	ug/kg	403	71.1	1	05/30/14 09:15	06/04/14 19:50	105-67-9	
Dimethylphthalate	403 U	ug/kg	403	57.2	1	05/30/14 09:15	06/04/14 19:50	131-11-3	
Di-n-butylphthalate	403 U	ug/kg	403	66.8	1	05/30/14 09:15	06/04/14 19:50	84-74-2	
4,6-Dinitro-2-methylphenol	1010 U	ug/kg	1010	114	1	05/30/14 09:15	06/04/14 19:50	534-52-1	
2,4-Dinitrophenol	1010 U	ug/kg	1010	365	1	05/30/14 09:15	06/04/14 19:50	51-28-5	
2,4-Dinitrotoluene	403 U	ug/kg	403	84.3	1	05/30/14 09:15	06/04/14 19:50	121-14-2	
2,6-Dinitrotoluene	403 U	ug/kg	403	52.9	1	05/30/14 09:15	06/04/14 19:50	606-20-2	
Di-n-octylphthalate	403 U	ug/kg	403	74.3	1	05/30/14 09:15	06/04/14 19:50	117-84-0	
bis(2-Ethylhexyl)phthalate	203J	ug/kg	403	138	1	05/30/14 09:15	06/04/14 19:50	117-81-7	
Fluoranthene	85.2J	ug/kg	403	61.6	1	05/30/14 09:15	06/04/14 19:50	206-44-0	
Fluorene	403 U	ug/kg	403	56.7	1	05/30/14 09:15	06/04/14 19:50	86-73-7	
Hexachloro-1,3-butadiene	403 U	ug/kg	403	71.4	1	05/30/14 09:15	06/04/14 19:50	87-68-3	
Hexachlorobenzene	403 U	ug/kg	403	52.0	1	05/30/14 09:15	06/04/14 19:50	118-74-1	
Hexachlorocyclopentadiene	403 U	ug/kg	403	129	1	05/30/14 09:15	06/04/14 19:50	77-47-4	
Hexachloroethane	403 U	ug/kg	403	62.0	1	05/30/14 09:15	06/04/14 19:50	67-72-1	
Indeno(1,2,3-cd)pyrene	403 U	ug/kg	403	98.4	1	05/30/14 09:15	06/04/14 19:50	193-39-5	
Isophorone	403 U	ug/kg	403	44.0	1	05/30/14 09:15	06/04/14 19:50	78-59-1	
2-Methylphenol(o-Cresol)	403 U	ug/kg	403	71.3	1	05/30/14 09:15	06/04/14 19:50	95-48-7	
3&4-Methylphenol(m&p Cresol)	806 U	ug/kg	806	81.2	1	05/30/14 09:15	06/04/14 19:50		
Naphthalene	403 U	ug/kg	403	53.7	1	05/30/14 09:15	06/04/14 19:50	91-20-3	
Nitrobenzene	403 U	ug/kg	403	63.3	1	05/30/14 09:15	06/04/14 19:50	98-95-3	
2-Nitrophenol	403 U	ug/kg	403	45.3	1	05/30/14 09:15	06/04/14 19:50	88-75-5	
4-Nitrophenol	403 U	ug/kg	403	167	1	05/30/14 09:15	06/04/14 19:50	100-02-7	
N-Nitrosodimethylamine	403 U	ug/kg	403	51.8	1	05/30/14 09:15	06/04/14 19:50	62-75-9	
N-Nitroso-di-n-propylamine	403 U	ug/kg	403	47.7	1	05/30/14 09:15	06/04/14 19:50	621-64-7	
N-Nitrosodiphenylamine	403 U	ug/kg	403	40.8	1	05/30/14 09:15	06/04/14 19:50	86-30-6	
Pentachlorophenol	1010 U	ug/kg	1010	101	1	05/30/14 09:15	06/04/14 19:50	87-86-5	
Phenanthrene	403 U	ug/kg	403	74.4	1	05/30/14 09:15	06/04/14 19:50	85-01-8	
Phenol	403 U	ug/kg	403	97.9	1	05/30/14 09:15	06/04/14 19:50	108-95-2	
Pyrene	86.0J	ug/kg	403	61.3	1	05/30/14 09:15	06/04/14 19:50	129-00-0	
1,2,4-Trichlorobenzene	403 U	ug/kg	403	61.7	1	05/30/14 09:15	06/04/14 19:50	120-82-1	
2,4,6-Trichlorophenol	403 U	ug/kg	403	73.7	1	05/30/14 09:15	06/04/14 19:50	88-06-2	

Surrogates

Nitrobenzene-d5 (S)	90 %		34-107		1	05/30/14 09:15	06/04/14 19:50	4165-60-0	
2-Fluorobiphenyl (S)	89 %		38-107		1	05/30/14 09:15	06/04/14 19:50	321-60-8	
Terphenyl-d14 (S)	95 %		34-129		1	05/30/14 09:15	06/04/14 19:50	1718-51-0	
Phenol-d6 (S)	73 %		20-102		1	05/30/14 09:15	06/04/14 19:50	13127-88-3	
2-Fluorophenol (S)	72 %		29-88		1	05/30/14 09:15	06/04/14 19:50	367-12-4	
2,4,6-Tribromophenol (S)	87 %		13-114		1	05/30/14 09:15	06/04/14 19:50	118-79-6	

8260 MSV 5030 Low Level

Analytical Method: EPA 8260B

Acrolein	ND	ug/kg	10.8	5.8	1		05/30/14 22:00	107-02-8	
Acrylonitrile	5.4 U	ug/kg	5.4	3.5	1		05/30/14 22:00	107-13-1	
Benzene	5.4 U	ug/kg	5.4	0.84	1		05/30/14 22:00	71-43-2	
Bromodichloromethane	5.4 U	ug/kg	5.4	1.9	1		05/30/14 22:00	75-27-4	

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: B-SS03 @ 6" Lab ID: 30121444003 Collected: 05/22/14 13:50 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
Bromoform	5.4 U	ug/kg	5.4	2.7	1		05/30/14 22:00	75-25-2	
Bromomethane	5.4 U	ug/kg	5.4	3.2	1		05/30/14 22:00	74-83-9	
Carbon tetrachloride	5.4 U	ug/kg	5.4	0.96	1		05/30/14 22:00	56-23-5	
Chlorobenzene	5.4 U	ug/kg	5.4	1.1	1		05/30/14 22:00	108-90-7	
Chloroethane	5.4 U	ug/kg	5.4	1.8	1		05/30/14 22:00	75-00-3	
2-Chloroethylvinyl ether	10.8 U	ug/kg	10.8	0.56	1		05/30/14 22:00	110-75-8	
Chloroform	5.4 U	ug/kg	5.4	0.76	1		05/30/14 22:00	67-66-3	
Chloromethane	5.4 U	ug/kg	5.4	1.1	1		05/30/14 22:00	74-87-3	
Dibromochloromethane	5.4 U	ug/kg	5.4	1.6	1		05/30/14 22:00	124-48-1	
1,1-Dichloroethane	5.4 U	ug/kg	5.4	0.85	1		05/30/14 22:00	75-34-3	
1,2-Dichloroethane	5.4 U	ug/kg	5.4	0.98	1		05/30/14 22:00	107-06-2	
1,1-Dichloroethene	5.4 U	ug/kg	5.4	0.87	1		05/30/14 22:00	75-35-4	
trans-1,2-Dichloroethene	5.4 U	ug/kg	5.4	0.88	1		05/30/14 22:00	156-60-5	
1,2-Dichloropropane	5.4 U	ug/kg	5.4	1.7	1		05/30/14 22:00	78-87-5	
cis-1,3-Dichloropropene	5.4 U	ug/kg	5.4	1.7	1		05/30/14 22:00	10061-01-5	
trans-1,3-Dichloropropene	5.4 U	ug/kg	5.4	1.8	1		05/30/14 22:00	10061-02-6	
Ethylbenzene	5.4 U	ug/kg	5.4	2.8	1		05/30/14 22:00	100-41-4	
Methylene Chloride	5.4 U	ug/kg	5.4	1.4	1		05/30/14 22:00	75-09-2	
1,1,2,2-Tetrachloroethane	5.4 U	ug/kg	5.4	0.95	1		05/30/14 22:00	79-34-5	
Tetrachloroethene	5.4 U	ug/kg	5.4	0.78	1		05/30/14 22:00	127-18-4	
Toluene	5.4 U	ug/kg	5.4	0.69	1		05/30/14 22:00	108-88-3	
1,1,1-Trichloroethane	5.4 U	ug/kg	5.4	2.8	1		05/30/14 22:00	71-55-6	
1,1,2-Trichloroethane	5.4 U	ug/kg	5.4	0.99	1		05/30/14 22:00	79-00-5	
Trichloroethene	5.4 U	ug/kg	5.4	0.81	1		05/30/14 22:00	79-01-6	
Vinyl chloride	5.4 U	ug/kg	5.4	0.87	1		05/30/14 22:00	75-01-4	
Surrogates									
Toluene-d8 (S)	93	%	81-117		1		05/30/14 22:00	2037-26-5	
4-Bromofluorobenzene (S)	100	%	74-121		1		05/30/14 22:00	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	80-120		1		05/30/14 22:00	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	17.6	%	0.10	0.10	1		06/02/14 16:47		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: T-SS01 @ 3" Lab ID: 30121444004 Collected: 05/22/14 14:30 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3546									
PCB-1016 (Aroclor 1016)	24.4 U	ug/kg	24.4	3.6	1	06/02/14 15:30	06/04/14 01:38	12674-11-2	
PCB-1221 (Aroclor 1221)	24.4 U	ug/kg	24.4	11.2	1	06/02/14 15:30	06/04/14 01:38	11104-28-2	
PCB-1232 (Aroclor 1232)	24.4 U	ug/kg	24.4	7.4	1	06/02/14 15:30	06/04/14 01:38	11141-16-5	
PCB-1242 (Aroclor 1242)	24.4 U	ug/kg	24.4	4.8	1	06/02/14 15:30	06/04/14 01:38	53469-21-9	
PCB-1248 (Aroclor 1248)	24.4 U	ug/kg	24.4	5.2	1	06/02/14 15:30	06/04/14 01:38	12672-29-6	
PCB-1254 (Aroclor 1254)	24.4 U	ug/kg	24.4	11.3	1	06/02/14 15:30	06/04/14 01:38	11097-69-1	
PCB-1260 (Aroclor 1260)	23.0J	ug/kg	24.4	3.8	1	06/02/14 15:30	06/04/14 01:38	11096-82-5	
PCB, Total	24.4 U	ug/kg	24.4	24.4	1	06/02/14 15:30	06/04/14 01:38	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	84 %		32-103		1	06/02/14 15:30	06/04/14 01:38	877-09-8	
Decachlorobiphenyl (S)	67 %		29-106		1	06/02/14 15:30	06/04/14 01:38	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Lead	118	mg/kg	0.56	0.30	1	05/29/14 10:14	05/30/14 07:14	7439-92-1	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	491 U	ug/kg	491	62.8	10	05/31/14 05:45	06/04/14 20:59	120-12-7	
Benzo(a)anthracene	1190	ug/kg	491	33.0	10	05/31/14 05:45	06/04/14 20:59	56-55-3	
Benzo(a)pyrene	81.7J	ug/kg	491	28.8	10	05/31/14 05:45	06/04/14 20:59	50-32-8	
Benzo(b)fluoranthene	1120	ug/kg	491	45.8	10	05/31/14 05:45	06/04/14 20:59	205-99-2	
Benzo(g,h,i)perylene	491 U	ug/kg	491	39.9	10	05/31/14 05:45	06/04/14 20:59	191-24-2	
Chrysene	134J	ug/kg	491	61.5	10	05/31/14 05:45	06/04/14 20:59	218-01-9	
Fluorene	491 U	ug/kg	491	82.1	10	05/31/14 05:45	06/04/14 20:59	86-73-7	
Indeno(1,2,3-cd)pyrene	491 U	ug/kg	491	27.1	10	05/31/14 05:45	06/04/14 20:59	193-39-5	
Phenanthrene	168J	ug/kg	491	62.7	10	05/31/14 05:45	06/04/14 20:59	85-01-8	
Pyrene	231J	ug/kg	491	51.4	10	05/31/14 05:45	06/04/14 20:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	52 %		30-90		10	05/31/14 05:45	06/04/14 20:59	321-60-8	
Terphenyl-d14 (S)	92 %		53-124		10	05/31/14 05:45	06/04/14 20:59	1718-51-0	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	6.2 U	ug/kg	6.2	0.97	1		06/02/14 19:27	71-43-2	
1,2-Dibromoethane (EDB)	6.2 U	ug/kg	6.2	3.2	1		06/02/14 19:27	106-93-4	
1,2-Dichloroethane	6.2 U	ug/kg	6.2	1.1	1		06/02/14 19:27	107-06-2	
Ethylbenzene	6.2 U	ug/kg	6.2	3.2	1		06/02/14 19:27	100-41-4	
Isopropylbenzene (Cumene)	6.2 U	ug/kg	6.2	1.3	1		06/02/14 19:27	98-82-8	
Methyl-tert-butyl ether	6.2 U	ug/kg	6.2	0.89	1		06/02/14 19:27	1634-04-4	
Naphthalene	6.2 U	ug/kg	6.2	3.1	1		06/02/14 19:27	91-20-3	
Toluene	6.2 U	ug/kg	6.2	0.80	1		06/02/14 19:27	108-88-3	
1,2,4-Trimethylbenzene	6.2 U	ug/kg	6.2	1.4	1		06/02/14 19:27	95-63-6	
1,3,5-Trimethylbenzene	6.2 U	ug/kg	6.2	1.7	1		06/02/14 19:27	108-67-8	
Xylene (Total)	18.7 U	ug/kg	18.7	3.8	1		06/02/14 19:27	1330-20-7	
Surrogates									
Toluene-d8 (S)	95 %		81-117		1		06/02/14 19:27	2037-26-5	
4-Bromofluorobenzene (S)	107 %		74-121		1		06/02/14 19:27	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp
Pace Project No.: 30121444

Sample: T-SS01 @ 3" Lab ID: 30121444004 Collected: 05/22/14 14:30 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	109 %		80-120		1		06/02/14 19:27	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	33.3 %		0.10	0.10	1		06/02/14 16:48		

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ANALYTICAL RESULTS

Project: Worcester Twp
Pace Project No.: 30121444

Sample: T-SS02 @ 3" Lab ID: 30121444005 Collected: 05/22/14 14:45 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546									
PCB-1016 (Aroclor 1016)	22.5 U	ug/kg	22.5	3.3	1	06/02/14 15:30	06/04/14 01:46	12674-11-2	
PCB-1221 (Aroclor 1221)	22.5 U	ug/kg	22.5	10.3	1	06/02/14 15:30	06/04/14 01:46	11104-28-2	
PCB-1232 (Aroclor 1232)	22.5 U	ug/kg	22.5	6.8	1	06/02/14 15:30	06/04/14 01:46	11141-16-5	
PCB-1242 (Aroclor 1242)	22.5 U	ug/kg	22.5	4.4	1	06/02/14 15:30	06/04/14 01:46	53469-21-9	
PCB-1248 (Aroclor 1248)	22.5 U	ug/kg	22.5	4.8	1	06/02/14 15:30	06/04/14 01:46	12672-29-6	
PCB-1254 (Aroclor 1254)	22.5 U	ug/kg	22.5	10.4	1	06/02/14 15:30	06/04/14 01:46	11097-69-1	
PCB-1260 (Aroclor 1260)	22.5 U	ug/kg	22.5	3.5	1	06/02/14 15:30	06/04/14 01:46	11096-82-5	
PCB, Total	22.5 U	ug/kg	22.5	22.5	1	06/02/14 15:30	06/04/14 01:46	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	81 %		32-103		1	06/02/14 15:30	06/04/14 01:46	877-09-8	
Decachlorobiphenyl (S)	48 %		29-106		1	06/02/14 15:30	06/04/14 01:46	2051-24-3	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Lead	47.7	mg/kg	0.47	0.25	1	05/29/14 10:14	05/30/14 07:17	7439-92-1	
8270 MSSV PAH by SIM Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	91.1 U	ug/kg	91.1	11.6	10	05/31/14 05:45	06/04/14 21:17	120-12-7	
Benzo(a)anthracene	259	ug/kg	91.1	6.1	10	05/31/14 05:45	06/04/14 21:17	56-55-3	
Benzo(a)pyrene	70.3J	ug/kg	91.1	5.3	10	05/31/14 05:45	06/04/14 21:17	50-32-8	
Benzo(b)fluoranthene	280	ug/kg	91.1	8.5	10	05/31/14 05:45	06/04/14 21:17	205-99-2	
Benzo(g,h,i)perylene	121	ug/kg	91.1	7.4	10	05/31/14 05:45	06/04/14 21:17	191-24-2	
Chrysene	58.4J	ug/kg	91.1	11.4	10	05/31/14 05:45	06/04/14 21:17	218-01-9	
Fluorene	91.1 U	ug/kg	91.1	15.2	10	05/31/14 05:45	06/04/14 21:17	86-73-7	
Indeno(1,2,3-cd)pyrene	69.4J	ug/kg	91.1	5.0	10	05/31/14 05:45	06/04/14 21:17	193-39-5	
Phenanthrene	90.9J	ug/kg	91.1	11.6	10	05/31/14 05:45	06/04/14 21:17	85-01-8	
Pyrene	124	ug/kg	91.1	9.5	10	05/31/14 05:45	06/04/14 21:17	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79 %		30-90		10	05/31/14 05:45	06/04/14 21:17	321-60-8	
Terphenyl-d14 (S)	102 %		53-124		10	05/31/14 05:45	06/04/14 21:17	1718-51-0	
8260 MSV PA UST Analytical Method: EPA 8260B									
Benzene	7.1 U	ug/kg	7.1	1.1	1		06/02/14 19:49	71-43-2	
1,2-Dibromoethane (EDB)	7.1 U	ug/kg	7.1	3.7	1		06/02/14 19:49	106-93-4	
1,2-Dichloroethane	7.1 U	ug/kg	7.1	1.3	1		06/02/14 19:49	107-06-2	
Ethylbenzene	7.1 U	ug/kg	7.1	3.6	1		06/02/14 19:49	100-41-4	
Isopropylbenzene (Cumene)	7.1 U	ug/kg	7.1	1.5	1		06/02/14 19:49	98-82-8	
Methyl-tert-butyl ether	7.1 U	ug/kg	7.1	1.0	1		06/02/14 19:49	1634-04-4	
Naphthalene	7.1 U	ug/kg	7.1	3.6	1		06/02/14 19:49	91-20-3	
Toluene	7.1 U	ug/kg	7.1	0.91	1		06/02/14 19:49	108-88-3	
1,2,4-Trimethylbenzene	7.1 U	ug/kg	7.1	1.6	1		06/02/14 19:49	95-63-6	
1,3,5-Trimethylbenzene	7.1 U	ug/kg	7.1	1.9	1		06/02/14 19:49	108-67-8	
Xylene (Total)	21.2 U	ug/kg	21.2	4.3	1		06/02/14 19:49	1330-20-7	
Surrogates									
Toluene-d8 (S)	92 %		81-117		1		06/02/14 19:49	2037-26-5	
4-Bromofluorobenzene (S)	106 %		74-121		1		06/02/14 19:49	460-00-4	

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: T-SS02 @ 3" Lab ID: 30121444005 Collected: 05/22/14 14:45 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	114 %		80-120		1		06/02/14 19:49	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	26.5 %		0.10	0.10	1		06/02/14 16:48		

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ANALYTICAL RESULTS

Project: Worcester Twp
Pace Project No.: 30121444

Sample: G-SS01 @ 3" Lab ID: 30121444006 Collected: 05/22/14 15:00 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546									
PCB-1016 (Aroclor 1016)	20.2 U	ug/kg	20.2	3.0	1	06/02/14 15:30	06/04/14 01:54	12674-11-2	
PCB-1221 (Aroclor 1221)	20.2 U	ug/kg	20.2	9.3	1	06/02/14 15:30	06/04/14 01:54	11104-28-2	
PCB-1232 (Aroclor 1232)	20.2 U	ug/kg	20.2	6.1	1	06/02/14 15:30	06/04/14 01:54	11141-16-5	
PCB-1242 (Aroclor 1242)	20.2 U	ug/kg	20.2	4.0	1	06/02/14 15:30	06/04/14 01:54	53469-21-9	
PCB-1248 (Aroclor 1248)	20.2 U	ug/kg	20.2	4.3	1	06/02/14 15:30	06/04/14 01:54	12672-29-6	
PCB-1254 (Aroclor 1254)	26.0	ug/kg	20.2	9.3	1	06/02/14 15:30	06/04/14 01:54	11097-69-1	C3
PCB-1260 (Aroclor 1260)	20.2 U	ug/kg	20.2	3.1	1	06/02/14 15:30	06/04/14 01:54	11096-82-5	
PCB, Total	26.0	ug/kg	20.2	20.2	1	06/02/14 15:30	06/04/14 01:54	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82 %		32-103		1	06/02/14 15:30	06/04/14 01:54	877-09-8	
Decachlorobiphenyl (S)	54 %		29-106		1	06/02/14 15:30	06/04/14 01:54	2051-24-3	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Lead	22.2	mg/kg	0.44	0.24	1	05/29/14 10:14	05/30/14 07:19	7439-92-1	
8270 MSSV PAH by SIM Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	20.3J	ug/kg	80.5	10.3	10	05/31/14 05:45	06/04/14 21:35	120-12-7	
Benzo(a)anthracene	262	ug/kg	80.5	5.4	10	05/31/14 05:45	06/04/14 21:35	56-55-3	
Benzo(a)pyrene	83.8	ug/kg	80.5	4.7	10	05/31/14 05:45	06/04/14 21:35	50-32-8	
Benzo(b)fluoranthene	301	ug/kg	80.5	7.5	10	05/31/14 05:45	06/04/14 21:35	205-99-2	
Benzo(g,h,i)perylene	68.0J	ug/kg	80.5	6.5	10	05/31/14 05:45	06/04/14 21:35	191-24-2	
Chrysene	118	ug/kg	80.5	10.1	10	05/31/14 05:45	06/04/14 21:35	218-01-9	
Fluorene	80.5 U	ug/kg	80.5	13.5	10	05/31/14 05:45	06/04/14 21:35	86-73-7	
Indeno(1,2,3-cd)pyrene	52.9J	ug/kg	80.5	4.4	10	05/31/14 05:45	06/04/14 21:35	193-39-5	
Phenanthrene	175	ug/kg	80.5	10.3	10	05/31/14 05:45	06/04/14 21:35	85-01-8	
Pyrene	225	ug/kg	80.5	8.4	10	05/31/14 05:45	06/04/14 21:35	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	86 %		30-90		10	05/31/14 05:45	06/04/14 21:35	321-60-8	
Terphenyl-d14 (S)	108 %		53-124		10	05/31/14 05:45	06/04/14 21:35	1718-51-0	
8260 MSV PA UST Analytical Method: EPA 8260B									
Benzene	5.2 U	ug/kg	5.2	0.82	1		06/02/14 20:11	71-43-2	
1,2-Dibromoethane (EDB)	5.2 U	ug/kg	5.2	2.7	1		06/02/14 20:11	106-93-4	
1,2-Dichloroethane	5.2 U	ug/kg	5.2	0.96	1		06/02/14 20:11	107-06-2	
Ethylbenzene	5.2 U	ug/kg	5.2	2.7	1		06/02/14 20:11	100-41-4	
Isopropylbenzene (Cumene)	5.2 U	ug/kg	5.2	1.1	1		06/02/14 20:11	98-82-8	
Methyl-tert-butyl ether	5.2 U	ug/kg	5.2	0.75	1		06/02/14 20:11	1634-04-4	
Naphthalene	5.2 U	ug/kg	5.2	2.6	1		06/02/14 20:11	91-20-3	
Toluene	5.2 U	ug/kg	5.2	0.67	1		06/02/14 20:11	108-88-3	
1,2,4-Trimethylbenzene	5.2 U	ug/kg	5.2	1.2	1		06/02/14 20:11	95-63-6	
1,3,5-Trimethylbenzene	5.2 U	ug/kg	5.2	1.4	1		06/02/14 20:11	108-67-8	
Xylene (Total)	15.7 U	ug/kg	15.7	3.2	1		06/02/14 20:11	1330-20-7	
Surrogates									
Toluene-d8 (S)	98 %		81-117		1		06/02/14 20:11	2037-26-5	
4-Bromofluorobenzene (S)	120 %		74-121		1		06/02/14 20:11	460-00-4	

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: G-SS01 @ 3" Lab ID: 30121444006 Collected: 05/22/14 15:00 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	121 %		80-120		1		06/02/14 20:11	17060-07-0	S3
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	17.6 %		0.10	0.10	1		06/02/14 16:49		

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ANALYTICAL RESULTS

Project: Worcester Twp
Pace Project No.: 30121444

Sample: G-SS02 @ 3" Lab ID: 30121444007 Collected: 05/22/14 15:10 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546									
PCB-1016 (Aroclor 1016)	20.1 U	ug/kg	20.1	3.0	1	06/02/14 15:30	06/04/14 02:02	12674-11-2	
PCB-1221 (Aroclor 1221)	20.1 U	ug/kg	20.1	9.2	1	06/02/14 15:30	06/04/14 02:02	11104-28-2	
PCB-1232 (Aroclor 1232)	20.1 U	ug/kg	20.1	6.1	1	06/02/14 15:30	06/04/14 02:02	11141-16-5	
PCB-1242 (Aroclor 1242)	20.1 U	ug/kg	20.1	3.9	1	06/02/14 15:30	06/04/14 02:02	53469-21-9	
PCB-1248 (Aroclor 1248)	20.1 U	ug/kg	20.1	4.3	1	06/02/14 15:30	06/04/14 02:02	12672-29-6	
PCB-1254 (Aroclor 1254)	25.1	ug/kg	20.1	9.3	1	06/02/14 15:30	06/04/14 02:02	11097-69-1	C3
PCB-1260 (Aroclor 1260)	20.1 U	ug/kg	20.1	3.1	1	06/02/14 15:30	06/04/14 02:02	11096-82-5	
PCB, Total	25.1	ug/kg	20.1	20.1	1	06/02/14 15:30	06/04/14 02:02	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	90 %		32-103		1	06/02/14 15:30	06/04/14 02:02	877-09-8	
Decachlorobiphenyl (S)	67 %		29-106		1	06/02/14 15:30	06/04/14 02:02	2051-24-3	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Lead	56.0	mg/kg	0.42	0.23	1	05/29/14 10:14	05/30/14 07:31	7439-92-1	
8270 MSSV PAH by SIM Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	79.8 U	ug/kg	79.8	10.2	10	05/31/14 05:45	06/04/14 21:54	120-12-7	
Benzo(a)anthracene	201	ug/kg	79.8	5.4	10	05/31/14 05:45	06/04/14 21:54	56-55-3	
Benzo(a)pyrene	18.5J	ug/kg	79.8	4.7	10	05/31/14 05:45	06/04/14 21:54	50-32-8	
Benzo(b)fluoranthene	189	ug/kg	79.8	7.4	10	05/31/14 05:45	06/04/14 21:54	205-99-2	
Benzo(g,h,i)perylene	79.8 U	ug/kg	79.8	6.5	10	05/31/14 05:45	06/04/14 21:54	191-24-2	
Chrysene	24.0J	ug/kg	79.8	10	10	05/31/14 05:45	06/04/14 21:54	218-01-9	
Fluorene	79.8 U	ug/kg	79.8	13.3	10	05/31/14 05:45	06/04/14 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	79.8 U	ug/kg	79.8	4.4	10	05/31/14 05:45	06/04/14 21:54	193-39-5	
Phenanthrene	23.3J	ug/kg	79.8	10.2	10	05/31/14 05:45	06/04/14 21:54	85-01-8	
Pyrene	49.8J	ug/kg	79.8	8.3	10	05/31/14 05:45	06/04/14 21:54	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	87 %		30-90		10	05/31/14 05:45	06/04/14 21:54	321-60-8	
Terphenyl-d14 (S)	115 %		53-124		10	05/31/14 05:45	06/04/14 21:54	1718-51-0	
8260 MSV PA UST Analytical Method: EPA 8260B									
Benzene	6.0 U	ug/kg	6.0	0.93	1		06/02/14 20:34	71-43-2	
1,2-Dibromoethane (EDB)	6.0 U	ug/kg	6.0	3.1	1		06/02/14 20:34	106-93-4	
1,2-Dichloroethane	6.0 U	ug/kg	6.0	1.1	1		06/02/14 20:34	107-06-2	
Ethylbenzene	6.0 U	ug/kg	6.0	3.1	1		06/02/14 20:34	100-41-4	
Isopropylbenzene (Cumene)	6.0 U	ug/kg	6.0	1.3	1		06/02/14 20:34	98-82-8	
Methyl-tert-butyl ether	6.0 U	ug/kg	6.0	0.85	1		06/02/14 20:34	1634-04-4	
Naphthalene	6.0 U	ug/kg	6.0	3.0	1		06/02/14 20:34	91-20-3	
Toluene	6.0 U	ug/kg	6.0	0.77	1		06/02/14 20:34	108-88-3	
1,2,4-Trimethylbenzene	6.0 U	ug/kg	6.0	1.4	1		06/02/14 20:34	95-63-6	
1,3,5-Trimethylbenzene	6.0 U	ug/kg	6.0	1.6	1		06/02/14 20:34	108-67-8	
Xylene (Total)	17.9 U	ug/kg	17.9	3.7	1		06/02/14 20:34	1330-20-7	
Surrogates									
Toluene-d8 (S)	94 %		81-117		1		06/02/14 20:34	2037-26-5	
4-Bromofluorobenzene (S)	102 %		74-121		1		06/02/14 20:34	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Twp

Pace Project No.: 30121444

Sample: G-SS02 @ 3" Lab ID: 30121444007 Collected: 05/22/14 15:10 Received: 05/24/14 11:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B								
Surrogates									
1,2-Dichloroethane-d4 (S)	117 %		80-120		1		06/02/14 20:34	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	18.6 %		0.10	0.10	1		06/02/14 16:49		

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QUALITY CONTROL DATA

Project: Worcester Twp

Pace Project No.: 30121444

QC Batch: MERP/5527 Analysis Method: EPA 7471A
 QC Batch Method: EPA 7471A Analysis Description: 7471 Mercury
 Associated Lab Samples: 30121444001, 30121444002, 30121444003

METHOD BLANK: 736224 Matrix: Solid

Associated Lab Samples: 30121444001, 30121444002, 30121444003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	0.10 U	0.10	05/30/14 08:42	

LABORATORY CONTROL SAMPLE: 736225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.042	0.043J	103	85-115	

MATRIX SPIKE SAMPLE: 736227

Parameter	Units	30121500001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.59	.12	0.69	82	80-120	

SAMPLE DUPLICATE: 736226

Parameter	Units	30121500001 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	mg/kg	0.59	0.53	11	20	

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QUALITY CONTROL DATA

Project: Worcester Twp
Pace Project No.: 30121444

QC Batch: MPRP/13099 Analysis Method: EPA 6010B
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 30121444001, 30121444002, 30121444003, 30121444004, 30121444005, 30121444006, 30121444007

METHOD BLANK: 736019 Matrix: Solid
Associated Lab Samples: 30121444001, 30121444002, 30121444003, 30121444004, 30121444005, 30121444006, 30121444007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/kg	0.60 U	0.60	05/30/14 06:58	
Arsenic	mg/kg	0.50 U	0.50	05/30/14 06:58	
Barium	mg/kg	2.0 U	2.0	05/30/14 06:58	
Beryllium	mg/kg	0.20 U	0.20	05/30/14 06:58	
Cadmium	mg/kg	0.30 U	0.30	05/30/14 06:58	
Chromium	mg/kg	0.50 U	0.50	05/30/14 06:58	
Copper	mg/kg	1.0 U	1.0	05/30/14 06:58	
Lead	mg/kg	0.50 U	0.50	05/30/14 06:58	
Nickel	mg/kg	2.0 U	2.0	05/30/14 06:58	
Selenium	mg/kg	0.80 U	0.80	05/30/14 06:58	
Silver	mg/kg	0.60 U	0.60	05/30/14 06:58	
Thallium	mg/kg	2.0 U	2.0	05/30/14 06:58	
Vanadium	mg/kg	1.0 U	1.0	05/30/14 06:58	
Zinc	mg/kg	1.0 U	1.0	05/30/14 06:58	

LABORATORY CONTROL SAMPLE: 736020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	50	51.4	103	80-120	
Arsenic	mg/kg	50	50.6	101	80-120	
Barium	mg/kg	50	51.2	102	80-120	
Beryllium	mg/kg	50	52.8	106	80-120	
Cadmium	mg/kg	50	51.2	102	80-120	
Chromium	mg/kg	50	53.2	106	80-120	
Copper	mg/kg	50	50.6	101	80-120	
Lead	mg/kg	50	48.8	98	80-120	
Nickel	mg/kg	50	52.4	105	80-120	
Selenium	mg/kg	50	49.1	98	80-120	
Silver	mg/kg	25	25.5	102	80-120	
Thallium	mg/kg	50	46.8	94	80-120	
Vanadium	mg/kg	50	52.9	106	80-120	
Zinc	mg/kg	50	51.2	102	80-120	

MATRIX SPIKE SAMPLE: 736022

Parameter	Units	30121444001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	0.52 U	41.7	11.2	27	75-125	M1
Arsenic	mg/kg	5.7	41.7	38.1	78	75-125	

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QUALITY CONTROL DATA

Project: Worcester Twp

Pace Project No.: 30121444

MATRIX SPIKE SAMPLE: 736022

Parameter	Units	30121444001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/kg	101	41.7	139	90	75-125	
Beryllium	mg/kg	1.0	41.7	36.3	84	75-125	
Cadmium	mg/kg	0.29	41.7	34.3	81	75-125	
Chromium	mg/kg	21.2	41.7	55.0	81	75-125	
Copper	mg/kg	16.0	41.7	51.5	85	75-125	
Lead	mg/kg	30.0	41.7	68.3	92	75-125	
Nickel	mg/kg	14.1	41.7	46.1	76	75-125	
Selenium	mg/kg	0.69 U	41.7	30.8	74	75-125	M1
Silver	mg/kg	0.52 U	20.9	16.5	79	75-125	
Thallium	mg/kg	1.7 U	41.7	34.2	82	75-125	
Vanadium	mg/kg	32.0	41.7	67.5	85	75-125	
Zinc	mg/kg	54.1	41.7	87.1	79	75-125	

SAMPLE DUPLICATE: 736021

Parameter	Units	30121444001 Result	Dup Result	RPD	Max RPD	Qualifiers
Antimony	mg/kg	0.52 U	0.49 U		20	
Arsenic	mg/kg	5.7	6.0	6	20	
Barium	mg/kg	101	97.9	3	20	
Beryllium	mg/kg	1.0	1.1	8	20	
Cadmium	mg/kg	0.29	0.26	12	20	
Chromium	mg/kg	21.2	28.7	30	20	D6
Copper	mg/kg	16.0	18.1	12	20	
Lead	mg/kg	30.0	29.1	3	20	
Nickel	mg/kg	14.1	14.3	1	20	
Selenium	mg/kg	0.69 U	0.66 U		20	
Silver	mg/kg	0.52 U	0.49 U		20	
Thallium	mg/kg	1.7 U	1.6 U		20	
Vanadium	mg/kg	32.0	38.0	17	20	
Zinc	mg/kg	54.1	55.0	2	20	

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QUALITY CONTROL DATA

Project: Worcester Twp

Pace Project No.: 30121444

QC Batch: MSV/19778 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30121444001, 30121444002, 30121444003

METHOD BLANK: 736914 Matrix: Solid

Associated Lab Samples: 30121444001, 30121444002, 30121444003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,1,2,2-Tetrachloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,1,2-Trichloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,1-Dichloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,1-Dichloroethene	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,2-Dichloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,2-Dichloropropane	ug/kg	5.0 U	5.0	05/30/14 13:08	
Acrolein	ug/kg	50.0 U	50.0	05/30/14 13:08	
Benzene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Bromodichloromethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
Bromoform	ug/kg	5.0 U	5.0	05/30/14 13:08	
Bromomethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
Carbon tetrachloride	ug/kg	5.0 U	5.0	05/30/14 13:08	
Chlorobenzene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Chloroethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
Chloroform	ug/kg	5.0 U	5.0	05/30/14 13:08	
Chloromethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
cis-1,3-Dichloropropene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Dibromochloromethane	ug/kg	5.0 U	5.0	05/30/14 13:08	
Ethylbenzene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Methylene Chloride	ug/kg	5.0 U	5.0	05/30/14 13:08	
Tetrachloroethene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Toluene	ug/kg	5.0 U	5.0	05/30/14 13:08	
trans-1,2-Dichloroethene	ug/kg	5.0 U	5.0	05/30/14 13:08	
trans-1,3-Dichloropropene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Trichloroethene	ug/kg	5.0 U	5.0	05/30/14 13:08	
Vinyl chloride	ug/kg	5.0 U	5.0	05/30/14 13:08	
1,2-Dichloroethane-d4 (S)	%	100	80-120	05/30/14 13:08	
4-Bromofluorobenzene (S)	%	101	74-121	05/30/14 13:08	
Toluene-d8 (S)	%	101	81-117	05/30/14 13:08	

LABORATORY CONTROL SAMPLE:

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
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QUALITY CONTROL DATA

Project: Worcester Twp

Pace Project No.: 30121444

QC Batch: MSV/19813

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV UST-SOIL

Associated Lab Samples:

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QUALITY CONTROL DATA

Project: Worcester Twp
Pace Project No.: 30121444

QC Batch:	OEXT/19461	Analysis Method:	EPA 8082
QC Batch Method:	EPA 3546	Analysis Description:	8082 GCS PCB

Associated Lab Samples:

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Worcester Twp

Pace Project No.: 30121444

QC Batch: OEXT/19444

Analysis Method: EPA 8270C by SIM

QC Batch Method: EPA 3546

Analysis Description: 8270/3546 MSSV PAH by SIM

Associated Lab Samples:

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QUALITY CONTROL DATA

Project: Worcester Twp
Pace Project No.: 30121444

QC Batch:	OEXT/19433	Analysis Method:	EPA 8270C
QC Batch Method:	EPA 3546	Analysis Description:	8270 Solid MSSV Microwave

Associated Lab Samples:

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QUALITY CONTROL DATA

Project: Worcester Twp
Pace Project No.: 30121444

QC Batch:	PMST/4537	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture

Associated Lab Samples:

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QUALIFIERS

Project: Worcester Twp

Pace Project No.: 30121444

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1810473 of _____

Section A
 Required Client Information:
 Company: Env. S&S Inc
 Address: 4401 VFW Dr
 Email To: JV@envsands.com
 Phone: 610.935.5577
 Requested Due Date (TAT): 2/14/14

Section B
 Required Project Information:
 Report To: J Kravick
 Copy To: _____
 Purchase Order No.: _____
 Project Name: Watermeter Pump
 Project Number: 20140456.A, Pk 2

Section C
 Invoice Information:
 Attention: J Kravick
 Company Name: Env. S&S Inc
 Address: Same
 Pace Quote Reference: _____
 Pace Project Manager: _____
 Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location: PA
 STATE: _____

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB						
1	<u>B-5502C 6"</u>	<u>B-5501C 6"</u>	<u>92</u>	<u>05/22/14</u>	<u>1320</u>	<u>05/22/14</u>	<u>1</u>	Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₈ Methanol Other	<u>Y</u>		<u>001</u>
2	<u>B-5502C 6"</u>			<u>1330</u>					<u>X</u>		<u>002</u>
3	<u>B-5503C 6"</u>			<u>1350</u>					<u>X</u>		<u>003</u>
4	<u>T-5501C 3"</u>			<u>1430</u>					<u>X</u>		<u>004</u>
5	<u>T-5502C 3"</u>			<u>1445</u>					<u>X</u>		<u>005</u>
6	<u>G-5501C 3"</u>			<u>1500</u>					<u>X</u>		<u>006</u>
7	<u>G-5501C 3"</u>			<u>1510</u>					<u>X</u>		<u>007</u>

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION DATE TIME

ACCEPTED BY / AFFILIATION DATE TIME

SAMPLE CONDITIONS

Received on Ice (Y/N) _____
 Sealed Cooler (Y/N) _____
 Custody (Y/N) _____
 Samples Intact (Y/N) _____

Temp in °C _____

DATE SIGNED (MM/DD/YY): 05.22.14

SAMPLER NAME AND SIGNATURE: Mark D. Hagedorn

PRINT Name of SAMPLER: _____

SIGNATURE of SAMPLER: _____

ORIGINAL



Sample Condition Upon Receipt

30121444

Client Name: Environmental Standards Inc. Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 8024 7545 4483

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other foam

Thermometer Used 6 7 8 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4.2
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: JSH 5/24/14

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>Soil vials not labeled. sample labeled "G-55 @ 3" 1510" -> match th: to the sample on chain w/ time "1510"</u>
-Includes date/time/ID/Analysis Matrix: <u>SL</u>		<u>JSH 5/24/14</u>
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>JSH</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 5-28-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Project Number: **30121444**

Client Name: **ESI**

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal / 1 gal.L)	Cubitrainer (500 ml / 4L)	Ziploc	Other	Other
100	75	1	3																					
100	75	1	3																					

July 18, 2014

Mr. David Pichette
Pace Analytical Services, Inc.
1638 Roseytown Road
Suite 2, 3 & 4
Greensburg, PA 15601

Certificate of Analysis

Revised Report - 7/18/2014 11:17:59 AM - See workorder comment section for explanation

Project Name:	Worcester Township	Workorder:	2016344
Purchase Order:		Workorder ID:	30124254

Dear Mr. Pichette:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, July 8, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mr. Brad W Kintzer (Project Coordinator) at (717) 944-5541.

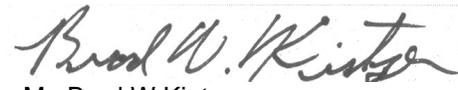
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Emailed Reports

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.



Mr. Brad W Kintzer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2016344 30124254

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2016344001	L SB01 @ 1.5'	Solid	5/27/2014 12:15	7/8/2014 08:50	Collected by Client
2016344002	L SB01 @ 8'	Solid	5/27/2014 12:20	7/8/2014 08:50	Collected by Client
2016344003	L SB02 @ 1.5'	Solid	5/27/2014 12:30	7/8/2014 08:50	Collected by Client
2016344004	L SB02 @ 7'	Solid	5/27/2014 12:35	7/8/2014 08:50	Collected by Client
2016344005	M SB01 @ 1.5'	Solid	5/27/2014 11:05	7/8/2014 08:50	Collected by Client
2016344006	M SB01 @ 9.5'	Solid	5/27/2014 11:10	7/8/2014 08:50	Collected by Client
2016344007	M SB02 @ 1.5'	Solid	5/27/2014 11:20	7/8/2014 08:50	Collected by Client
2016344008	M SB02 @ 9.5'	Solid	5/27/2014 11:25	7/8/2014 08:50	Collected by Client
2016344009	M SB03 @ 1.5'	Solid	5/27/2014 11:30	7/8/2014 08:50	Collected by Client
2016344010	M SB03 @ 9.0'	Solid	5/27/2014 11:35	7/8/2014 08:50	Collected by Client
2016344011	M SB04 @ 1.5'	Solid	5/27/2014 11:50	7/8/2014 08:50	Collected by Client
2016344012	M SB04 @ 9.5'	Solid	5/27/2014 12:00	7/8/2014 08:50	Collected by Client

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SAMPLE SUMMARY

Workorder: 2016344 30124254

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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PROJECT SUMMARY

Workorder: 2016344 30124254

Workorder Comments

This report was modified on 7/18/14, as per the clients request, to change the sample id names and add an EDD. BWK

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344001**
 Sample ID: **L SB01 @ 1.5'**

Date Collected: 5/27/2014 12:15 Matrix: Solid
 Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	35.2		%	0.1	S2540G-97	7/15/14 RMR	7/15/14 12:20	RMR	A
Perchlorate	ND		ug/kg	61.5	EPA 314.0	7/17/14 MBW	7/17/14 13:09	MBW	A1
Total Solids	64.8	1	%	0.1	S2540G-97	7/15/14 RMR	7/15/14 12:20	RMR	A



Mr. Brad W Kintzer
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344002**
Sample ID: **L SB01 @ 8'**

Date Collected: 5/27/2014 12:20 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	22.9		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	52.1	EPA 314.0	7/17/14 MBW	7/17/14 13:23	MBW	A1
Total Solids	77.1	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344003**
Sample ID: **L SB02 @ 1.5'**

Date Collected: 5/27/2014 12:30 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	18.6		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	48.9	EPA 314.0	7/17/14 MBW	7/17/14 13:37	MBW	A1
Total Solids	81.4	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344004**
Sample ID: **L SB02 @ 7'**

Date Collected: 5/27/2014 12:35 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	19.9		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	50.1	EPA 314.0	7/17/14 MBW	7/17/14 13:51	MBW	A1
Total Solids	80.1	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344005**
 Sample ID: **M SB01 @ 1.5'**

Date Collected: 5/27/2014 11:05 Matrix: Solid
 Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	10.6		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	44.6	EPA 314.0	7/17/14 MBW	7/17/14 14:05	MBW	A1
Total Solids	89.4	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344006**
Sample ID: **M SB01 @ 9.5'**

Date Collected: 5/27/2014 11:10 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	18.9		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	49.6	EPA 314.0	7/17/14 MBW	7/17/14 14:19	MBW	A1
Total Solids	81.1	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344007**
Sample ID: **M SB02 @ 1.5'**

Date Collected: 5/27/2014 11:20 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	22.3		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	51.6	EPA 314.0	7/17/14 MBW	7/17/14 14:33	MBW	A1
Total Solids	77.7	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344008**
Sample ID: **M SB02 @ 9.5'**

Date Collected: 5/27/2014 11:25 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	29.8		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	57.1	EPA 314.0	7/17/14 MBW	7/17/14 14:47	MBW	A1
Total Solids	70.2	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344009**
Sample ID: **M SB03 @ 1.5'**

Date Collected: 5/27/2014 11:30 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	26.4		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	54.2	EPA 314.0	7/17/14 MBW	7/17/14 15:01	MBW	A1
Total Solids	73.6	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344010**
 Sample ID: **M SB03 @ 9.0'**

Date Collected: 5/27/2014 11:35 Matrix: Solid
 Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	26.1		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	54.3	EPA 314.0	7/17/14 MBW	7/17/14 15:15	MBW	A1
Total Solids	73.9	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344011**
Sample ID: **M SB04 @ 1.5'**

Date Collected: 5/27/2014 11:50 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	25.7		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	53.7	EPA 314.0	7/17/14 MBW	7/17/14 16:24	MBW	A1
Total Solids	74.3	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
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ANALYTICAL RESULTS

Workorder: 2016344 30124254

Lab ID: **2016344012**
Sample ID: **M SB04 @ 9.5'**

Date Collected: 5/27/2014 12:00 Matrix: Solid
Date Received: 7/8/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Moisture	34.3		%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A
Perchlorate	ND		ug/kg	61.0	EPA 314.0	7/17/14 MBW	7/17/14 16:38	MBW	A1
Total Solids	65.7	1	%	0.1	S2540G-97	7/12/14 RMR	7/12/14 11:49	RMR	A



Mr. Brad W Kintzer
Project Coordinator

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PARAMETER QUALIFIERS

#	Lab ID	Sample ID	Analytical Method	Analyte
1	2016344001	L SB01 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344002	L SB01 @ 8'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344003	L SB02 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344004	L SB02 @ 7'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344005	M SB01 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344006	M SB01 @ 9.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344007	M SB02 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344008	M SB02 @ 9.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344009	M SB03 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344010	M SB03 @ 9.0'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344011	M SB04 @ 1.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				
1	2016344012	M SB04 @ 9.5'	S2540G-97	Total Solids
Analyte was analyzed past the 14 day holding time.				

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Analytical Services Request Purchase Order



Pace Analytical Services, Inc.
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone: (724) 850-5600
FAX: (724) 850-5601

www.pacelabs.com

Subcontractor Project No.:
P.O. No: **ASR-30124254**

Request Date: 7/7/14 Analysis Due Date: 7/11/14
Shipped By: FedEx

Certification Required: PA

Pace Project No.: 30124254
Report/Invoice to: Dave Pichette

Page of

Pace Sample ID:	Matrix:	Collection Date:	Time:	Analysis Requested:	Analytical Method:	Detection Limits:	Units Requested:	Price
1	SL	5/27/2014	12:15	Perchlorate	314.0			\$ 200.00
2	SL	5/27/2014	12:20	Perchlorate	314.0			\$ 200.00
3	SL	5/27/2014	12:30	Perchlorate	314.0			\$ 200.00
4	SL	5/27/2014	12:35	Perchlorate	314.0			\$ 200.00
5	SL	5/27/2014	11:05	Perchlorate	314.0			\$ 200.00
6	SL	5/27/2014	11:10	Perchlorate	314.0			\$ 200.00
7	SL	5/27/2014	11:20	Perchlorate	314.0			\$ 200.00
8	SL	5/27/2014	11:25	Perchlorate	314.0			\$ 200.00
9	SL	5/27/2014	11:30	Perchlorate	314.0			\$ 200.00
10	SL	5/27/2014	11:35	Perchlorate	314.0			\$ 200.00
11	SL	5/27/2014	11:50	Perchlorate	314.0			\$ 200.00
12	SL	5/27/2014	12:00	Perchlorate	314.0			\$ 200.00

Email to PGHSubcon@pacelabs.com

Special Requirements: **PLEASE INCLUDE CLIENT SAMPLE ID'S IN FINAL REPORT**

Subcontract Lab: Analytical Laboratory Services, Inc.
Address: 34 Dogwood Lane
Middletown, PA 17057
Contact: Sample Receiving
Phone: 717-944-5541
Proposal No.:

Unit Price Total: \$ 2,400.00
Discount/Surcharge Factors: \$ -
Analytical Subtotal: \$ 2,400.00
Additional Charges: \$ -
Subtotal this Page: \$ 2,400.00
Total: \$ 2,400.00

Instructions:

Please fill in your Project Number on both the Purchase Order and the Chain of Custody, sign Acceptance of Terms, and complete the Chain of Custody information. Please return one copy of the Chain of Custody to Pace Analytical Services, Inc. with the Final Report. Thank you. Email to PGHSubcon@pacelabs.com

PLEASE REFERENCE THE ABOVE P.O. NUMBER ON ALL CORRESPONDENCE



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Environmental Standards	Report To:	Joe Kraycik	Attention:	Joe Kraycik
Address:	1140 Valley Forge Road Valley Forge, PA	Copy To:		Company Name:	Environmental Standards
Email To:	jkraycik@envstd.com	Purchase Order No.:		Address:	Same
Phone:	610.935.5577	Project Name:	Worcester Township	Pace Cause Reference:	
Requested Due Date (TAT):	Std TAT	Project Number:	20146466.A	Pace Project Manager:	
				Pace Profile #:	

Page: 2 of 2

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location: _____ STATE: PA

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody	Sealed Cooler	Samples Intact
					DATE	TIME									
1	M SB02 @ 1.5	DRINKING WATER	SL G	G	05/27/14	1120	4	Unpreserved	Analysis Test	Y					
2	M SB02 @ 9.5	WASTE WATER	SL G	G	05/27/14	1125	4	Unpreserved	Analysis Test	Y					
3	M SB03 @ 1.5	WASTE WATER	SL G	G	05/27/14	1130	4	Unpreserved	Analysis Test	Y					
4	M SB03 @ 9.0	WASTE WATER	SL G	G	05/27/14	1135	4	Unpreserved	Analysis Test	Y					
5	M SB04 @ 1.5	WASTE WATER	SL G	G	05/27/14	1150	4	Unpreserved	Analysis Test	Y					
6	M SB04 @ 9.5	WASTE WATER	SL G	G	05/27/14	1200	4	Unpreserved	Analysis Test	Y					
7	O 01 SB01 @ 10'	WASTE WATER	SL G	G	05/27/14	1015	4	Unpreserved	Analysis Test	Y					
8	O 01 SB02 @ 10'	WASTE WATER	SL G	G	05/27/14	1000	4	Unpreserved	Analysis Test	Y					
9	O 01 SB03 @ 10'	WASTE WATER	SL G	G	05/27/14	0945	4	Unpreserved	Analysis Test	Y					
10	O 01 SB04 @ 10'	WASTE WATER	SL G	G	05/27/14	1035	4	Unpreserved	Analysis Test	Y					
11	TOP BACK - 052714	WASTE WATER	WT MA	MA	5/27/14	0800	3	Unpreserved	Analysis Test	Y					

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: MCGRAW HILL
DATE: 5/27/14 1:20 PM

ACCEPTED BY / AFFILIATION: J. J. [Signature]
DATE: 5/28/14 10:00 AM

SAMPLE CONDITIONS

Temp in °C: 68.1

Received on: 5/28/14

Custody: Y

Sealed Cooler: N

Samples Intact: Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MEGAN FILIPANTS

SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YY): 05/27/14

30121605
L7A
7-316

Chain of Custody



Pace Analytical Services, Inc.
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone: (724) 850-5600
 FAX: (724) 850-5601

Subcontractor Project No.:
 P.O. No: ASR- 30121605

Request Date: 6/6/14 Analysis Due Date: 6/3/2014
 Shipped By: FedEx

Certification Required: PA

Page _____ of _____
 Pace Project No.: 30121605
 Report/Invoice to: TIM REED

Pace Sample ID:	Matrix:	Collection Date:	Time:	Analysis Requested:	Analytical Method:	Detection Limits:	Units Requested:
1	SL	5/27/14	12:15	PERCHLORATE	304		
2	SL	5/27/14	12:20	PERCHLORATE	304		
3	SL	5/27/14	12:30	PERCHLORATE	304		
4	SL	5/27/14	12:35	PERCHLORATE	304		
5	SL	5/27/14	11:05	PERCHLORATE	304		
6	SL	5/27/14	11:10	PERCHLORATE	304		
7	SL	5/27/14	11:20	PERCHLORATE	304		
8	SL	5/27/14	11:25	PERCHLORATE	304		
9	SL	5/27/14	11:30	PERCHLORATE	304		
10	SL	5/27/14	11:35	PERCHLORATE	304		
11	SL	5/27/14	11:50	PERCHLORATE	304		
12	SL	5/27/14	12:00	PERCHLORATE	304		

Special Requirements:

14060773-001012 ST

Subcontract Lab: Summit Environmental Technologies, Inc.
 Address: 3310 Win Street
 Cuyahoga Falls, OH 44223
 Phone: 330-253-8211

Analysis Authorized By:

Acceptance of Terms By:

Pace Agent Name Title

Subcontract Lab Agent Title

Relinquished By: [Signature] 6-16-14 16:10 (Date) (Time)

Relinquished By: [Signature] 6-16-14 16:10 (Date) (Time)

Comments:

Received By: [Signature] SET 6/11/14 09:30 (Date) (Time)
 Received By: [Signature] (Date) (Time)

[Signature] ALS 6/8/14

Analytical Services Request Purchase Order



Pace Analytical Services, Inc.
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone: (724) 850-5600
 FAX: (724) 850-5601

Subcontractor Project No.:
 P.O. No: ASR-30121605

Request Date: 6/6/14 Analysis Due Date: 6/3/14
 Shipped By: FedEx

Certification Required: PA

Pace Project No.: 30121605
 Report/invoice to: TIM REED

Page _____ of _____

Pace Sample ID:	Matrix:	Collection Date:	Time:	Analysis Requested:	Analytical Method:	Detection Limits:	Units Requested:	Price
1	30121605 007	5/27/2014	12:15	PERCHLORATE	304			\$ 75.00
2	30121605 008	5/27/2014	12:20	PERCHLORATE	304			\$ 75.00
3	30121605 009	5/27/2014	12:30	PERCHLORATE	304			\$ 75.00
4	30121605 010	5/27/2014	12:35	PERCHLORATE	304			\$ 75.00
5	30121605 011	5/27/2014	11:05	PERCHLORATE	304			\$ 75.00
6	30121605 012	5/27/2014	11:10	PERCHLORATE	304			\$ 75.00
7	30121605 013	5/27/2014	11:20	PERCHLORATE	304			\$ 75.00
8	30121605 014	5/27/2014	11:25	PERCHLORATE	304			\$ 75.00
9	30121605 015	5/27/2014	11:30	PERCHLORATE	304			\$ 75.00
10	30121605 016	5/27/2014	11:35	PERCHLORATE	304			\$ 75.00
11	30121605 017	5/27/2014	11:50	PERCHLORATE	304			\$ 75.00
12	30121605 018	5/27/2014	12:00	PERCHLORATE	304			\$ 75.00

Special Requirements:

Subcontract Lab: Summit Environmental Technologies, Inc.
 Address: 3310 Win Street
 Cuyahoga Falls, OH 44223
 Contact: Sample Receiving
 Phone: 330-253-8211
 Proposal No.:

Unit Price Total: \$ 900.00
 Discount/Surcharge Factors: \$ -
 Analytical Subtotal: \$ 900.00
 Additional Charges: \$ -
 Subtotal this Page: \$ 900.00
 Total: \$ 900.00

Instructions:

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PLEASE REFERENCE THE ABOVE P.O. NUMBER ON ALL CORRESPONDENCE

July 18, 2014

Mark Haslett
Environmental Standards, Inc.
1140 valley Forge Rd
PO Box 810
Valley Forge, PA 19482

RE: Project: Worcester Township
Pace Project No.: 30121605

Dear Mark Haslett:

Enclosed are the analytical results for sample(s) received by the laboratory on May 29, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

The samples were subcontracted to Summit Environmental, 3310 Win Street, Cuyahoga Falls, OH 44223 for Perchlorate analysis. Results of the analysis are reported on the Summit Environmental data tables.

Revised July 3, 2014, to add o, m & p Cresol to sample 30121605-014 (M SB02@9.5').

Revised July 17, 2014, to adjust the reporting limits and add qualifiers and MDLs to the results.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



REPORT OF LABORATORY ANALYSIS

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July 18, 2014
Page 2



David A. Pichette for
Timothy Reed
timothy.reed@pacelabs.com
Project Manager

Enclosures

cc: Joe Kraycik, Environmental Standards, Inc.
Angela Powley, Environmental Standards



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Worcester Township

Pace Project No.: 30121605

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601

AClass DOD-ELAP Accreditation #: ADE-1544

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California/TNI Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Guam/PADEP Certification

Hawaii/PADEP Certification

Idaho Certification

Illinois/PADEP Certification

Indiana/PADEP Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188

Utah/TNI Certification #: PA014572014-4

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin/PADEP Certification

Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Worcester Township
Pace Project No.: 30121605

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30121605001	O 09 SS01 @ 6"	Solid	05/27/14 12:55	05/29/14 10:00
30121605002	E SB01 @ 10'	Solid	05/27/14 13:00	05/29/14 10:00
30121605003	K SB01 @ 4'	Solid	05/27/14 08:55	05/29/14 10:00
30121605004	K SB02 @ 4'	Solid	05/27/14 08:50	05/29/14 10:00
30121605005	K SB03 @ 4'	Solid	05/27/14 09:10	05/29/14 10:00
30121605006	K SB04 @ 4'	Solid	05/27/14 09:05	05/29/14 10:00
30121605007	L SB01 @ 1.5'	Solid	05/27/14 12:15	05/29/14 10:00
30121605008	L SB01 @ 8'	Solid	05/27/14 12:20	05/29/14 10:00
30121605009	L SB02 @ 1.5'	Solid	05/27/14 12:30	05/29/14 10:00
30121605010	L SB02 @ 7'	Solid	05/27/14 12:35	05/29/14 10:00
30121605011	M SB01 @ 1.5'	Solid	05/27/14 11:05	05/29/14 10:00
30121605012	M SB01 @ 9.5'	Solid	05/27/14 11:10	05/29/14 10:00
30121605013	M SB02 @ 1.5'	Solid	05/27/14 11:20	05/29/14 10:00
30121605014	M SB02 @ 9.5'	Solid	05/27/14 11:25	05/29/14 10:00
30121605015	M SB03 @ 1.5'	Solid	05/27/14 11:30	05/29/14 10:00
30121605016	M SB03 @ 9.0'	Solid	05/27/14 11:35	05/29/14 10:00
30121605017	M SB04 @ 1.5'	Solid	05/27/14 11:50	05/29/14 10:00
30121605018	M SB04 @ 9.5'	Solid	05/27/14 12:00	05/29/14 10:00
30121605019	O 01 SB01 @ 10'	Solid	05/27/14 10:15	05/29/14 10:00
30121605020	O 01 SB02 @ 10'	Solid	05/27/14 10:00	05/29/14 10:00
30121605021	O 01 SB03 @ 10'	Solid	05/27/14 09:45	05/29/14 10:00
30121605022	O 01 SB04 @ 10'	Solid	05/27/14 10:35	05/29/14 10:00
30121605023	Trip Blank_052714	Solid	05/27/14 08:00	05/29/14 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Worcester Township

Pace Project No.: 30121605

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30121605001	O 09 SS01 @ 6"	EPA 6010B	CTS	1
		EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605002	E SB01 @ 10'	EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605003	K SB01 @ 4'	EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	11
		EPA 8260B	JEW	5
30121605004	K SB02 @ 4'	ASTM D2974-87	MAC	1
		EPA 6010B	CTS	1
		EPA 8270C by SIM	HEK	11
30121605005	K SB03 @ 4'	EPA 8260B	JEW	5
		ASTM D2974-87	MAC	1
		EPA 6010B	CTS	1
30121605006	K SB04 @ 4'	EPA 8270C by SIM	HEK	11
		EPA 8260B	JEW	5
		ASTM D2974-87	MAC	1
30121605007	L SB01 @ 1.5'	EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
30121605008	L SB01 @ 8'	EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	4
30121605009	L SB02 @ 1.5'	ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Worcester Township
Pace Project No.: 30121605

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30121605010	L SB02 @ 7'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
30121605011	M SB01 @ 1.5'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
30121605012	M SB01 @ 9.5'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
30121605013	M SB02 @ 1.5'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
30121605014	M SB02 @ 9.5'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
30121605015	M SB03 @ 1.5'	EPA 8260B	JEW	4
		ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Worcester Township
Pace Project No.: 30121605

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30121605016	M SB03 @ 9.0'	ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	4
30121605017	M SB04 @ 1.5'	ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	4
30121605018	M SB04 @ 9.5'	ASTM D2974-87	MAC	1
		EPA 8015B	CWB	2
		EPA 6010B	CTS	14
		EPA 7471A	RTW	1
		EPA 8270C	HEK	64
		EPA 8260B	JEW	4
30121605019	O 01 SB01 @ 10'	ASTM D2974-87	MAC	1
		EPA 6010B	CTS	1
		EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605020	O 01 SB02 @ 10'	EPA 6010B	CTS	1
		EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605021	O 01 SB03 @ 10'	EPA 6010B	CTS	1
		EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605022	O 01 SB04 @ 10'	EPA 6010B	CTS	1
		EPA 8260B	JEW	11
		ASTM D2974-87	MAC	1
30121605023	Trip Blank_052714	EPA 8260B	JEW	4

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8015B

Description: 8015 TPH Microwave

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

12 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19487

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- M SB01 @ 1.5' (Lab ID: 30121605011)
- o-Terphenyl (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/19487

1c: The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

- M SB01 @ 1.5' (Lab ID: 30121605011)
 - TPH (C10-C28)
- M SB01 @ 9.5' (Lab ID: 30121605012)
 - TPH (C10-C28)
- M SB03 @ 1.5' (Lab ID: 30121605015)
 - TPH (C10-C28)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 6010B

Description: 6010 MET ICP

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

21 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/13119

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121605001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 737513)
- Antimony

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 7471A

Description: 7471 Mercury

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

12 samples were analyzed for EPA 7471A. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7471A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8270C by SIM

Description: 8270 MSSV PAH by SIM

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

4 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19444

S0: Surrogate recovery outside laboratory control limits.

- LCS (Lab ID: 736953)
- 2-Fluorobiphenyl (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19444

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121245001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 736954)
 - Phenanthrene
- MSD (Lab ID: 736955)
 - Phenanthrene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8270C

Description: 8270 MSSV FULL LIST MICROWAVE

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

12 samples were analyzed for EPA 8270C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

QC Batch: OEXT/19452

IS: The internal standard response is below criteria. Results may be biased high.

- L SB01 @ 8' (Lab ID: 30121605008)
 - Benzidine

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19452

S0: Surrogate recovery outside laboratory control limits.

- BLANK (Lab ID: 737328)
 - 2-Fluorophenol (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19452

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121605014

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 737332)

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8270C

Description: 8270 MSSV FULL LIST MICROWAVE

Client: Environmental Standards, Inc.

Date: July 18, 2014

QC Batch: OEXT/19452

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30121605014

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- 2,4-Dimethylphenol
- 2-Nitrophenol
- MSD (Lab ID: 737333)
 - 2,4-Dimethylphenol
 - 2-Nitrophenol

Additional Comments:

Analyte Comments:

QC Batch: OEXT/19452

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 737328)
 - Azobenzene
- L SB01 @ 1.5' (Lab ID: 30121605007)
 - Azobenzene
- L SB01 @ 8' (Lab ID: 30121605008)
 - Azobenzene
- L SB02 @ 1.5' (Lab ID: 30121605009)
 - Azobenzene
- L SB02 @ 7' (Lab ID: 30121605010)
 - Azobenzene
- M SB01 @ 1.5' (Lab ID: 30121605011)
 - Azobenzene
- M SB01 @ 9.5' (Lab ID: 30121605012)
 - Azobenzene
- M SB02 @ 1.5' (Lab ID: 30121605013)
 - Azobenzene
- M SB02 @ 9.5' (Lab ID: 30121605014)
 - Azobenzene
- M SB03 @ 1.5' (Lab ID: 30121605015)
 - Azobenzene
- M SB03 @ 9.0' (Lab ID: 30121605016)
 - Azobenzene
- M SB04 @ 1.5' (Lab ID: 30121605017)
 - Azobenzene
- M SB04 @ 9.5' (Lab ID: 30121605018)
 - Azobenzene

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8260B

Description: 8260 MSV 5030 Low Level

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

13 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/19821

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/19823

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8260B

Description: 8260 MSV PA UST

Client: Environmental Standards, Inc.

Date: July 18, 2014

General Information:

10 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/19819

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- E SB01 @ 10' (Lab ID: 30121605002)
 - 1,2-Dichloroethane-d4 (S)
- K SB01 @ 4' (Lab ID: 30121605003)
 - 1,2-Dichloroethane-d4 (S)
- K SB02 @ 4' (Lab ID: 30121605004)
 - 1,2-Dichloroethane-d4 (S)
- K SB03 @ 4' (Lab ID: 30121605005)
 - 1,2-Dichloroethane-d4 (S)
- K SB04 @ 4' (Lab ID: 30121605006)
 - 1,2-Dichloroethane-d4 (S)
- O 01 SB01 @ 10' (Lab ID: 30121605019)
 - 1,2-Dichloroethane-d4 (S)
- O 01 SB02 @ 10' (Lab ID: 30121605020)
 - 1,2-Dichloroethane-d4 (S)
- O 01 SB03 @ 10' (Lab ID: 30121605021)
 - 1,2-Dichloroethane-d4 (S)
- O 01 SB04 @ 10' (Lab ID: 30121605022)
 - 1,2-Dichloroethane-d4 (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30121605

Method: EPA 8260B

Description: 8260 MSV PA UST

Client: Environmental Standards, Inc.

Date: July 18, 2014

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/19819

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: O 09 SS01 @ 6" **Lab ID: 30121605001** Collected: 05/27/14 12:55 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	49.0	mg/kg	0.79	0.045	1	06/02/14 11:44	06/03/14 11:43	7440-62-2	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	5.1 U	ug/kg	5.1	0.80	1		06/03/14 12:54	71-43-2	
Ethylbenzene	5.1 U	ug/kg	5.1	2.6	1		06/03/14 12:54	100-41-4	
Isopropylbenzene (Cumene)	5.1 U	ug/kg	5.1	1.1	1		06/03/14 12:54	98-82-8	
Methyl-tert-butyl ether	5.1 U	ug/kg	5.1	0.73	1		06/03/14 12:54	1634-04-4	
Naphthalene	5.1 U	ug/kg	5.1	2.6	1		06/03/14 12:54	91-20-3	
Toluene	5.1 U	ug/kg	5.1	0.66	1		06/03/14 12:54	108-88-3	
1,2,4-Trimethylbenzene	5.1 U	ug/kg	5.1	1.2	1		06/03/14 12:54	95-63-6	
1,3,5-Trimethylbenzene	5.1 U	ug/kg	5.1	1.4	1		06/03/14 12:54	108-67-8	
Surrogates									
Toluene-d8 (S)	94 %		81-117		1		06/03/14 12:54	2037-26-5	
4-Bromofluorobenzene (S)	101 %		74-121		1		06/03/14 12:54	460-00-4	
1,2-Dichloroethane-d4 (S)	119 %		80-120		1		06/03/14 12:54	17060-07-0	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	19.2	%	0.10	0.10	1		06/03/14 18:08		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: E SB01 @ 10' **Lab ID: 30121605002** Collected: 05/27/14 13:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	5.1 U	ug/kg	5.1	0.80	1		06/03/14 13:16	71-43-2	
Ethylbenzene	5.1 U	ug/kg	5.1	2.6	1		06/03/14 13:16	100-41-4	
Isopropylbenzene (Cumene)	5.1 U	ug/kg	5.1	1.1	1		06/03/14 13:16	98-82-8	
Methyl-tert-butyl ether	5.1 U	ug/kg	5.1	0.73	1		06/03/14 13:16	1634-04-4	
Naphthalene	5.1 U	ug/kg	5.1	2.6	1		06/03/14 13:16	91-20-3	
Toluene	5.1 U	ug/kg	5.1	0.66	1		06/03/14 13:16	108-88-3	
1,2,4-Trimethylbenzene	5.1 U	ug/kg	5.1	1.2	1		06/03/14 13:16	95-63-6	
1,3,5-Trimethylbenzene	5.1 U	ug/kg	5.1	1.4	1		06/03/14 13:16	108-67-8	
Surrogates									
Toluene-d8 (S)	94	%	81-117		1		06/03/14 13:16	2037-26-5	
4-Bromofluorobenzene (S)	106	%	74-121		1		06/03/14 13:16	460-00-4	
1,2-Dichloroethane-d4 (S)	121	%	80-120		1		06/03/14 13:16	17060-07-0	S3
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	20.8	%	0.10	0.10	1		06/03/14 18:10		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: K SB01 @ 4' **Lab ID: 30121605003** Collected: 05/27/14 08:55 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	23.3	mg/kg	0.87	0.049	1	06/02/14 11:44	06/03/14 11:49	7440-62-2	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	8.4 U	ug/kg	8.4	1.1	1	05/31/14 05:45	06/05/14 12:12	120-12-7	
Benzo(a)anthracene	8.4 U	ug/kg	8.4	0.56	1	05/31/14 05:45	06/05/14 12:12	56-55-3	
Benzo(a)pyrene	8.4 U	ug/kg	8.4	0.49	1	05/31/14 05:45	06/05/14 12:12	50-32-8	
Benzo(b)fluoranthene	8.4 U	ug/kg	8.4	0.78	1	05/31/14 05:45	06/05/14 12:12	205-99-2	
Benzo(g,h,i)perylene	8.4 U	ug/kg	8.4	0.68	1	05/31/14 05:45	06/05/14 12:12	191-24-2	
Chrysene	8.4 U	ug/kg	8.4	1.1	1	05/31/14 05:45	06/05/14 12:12	218-01-9	
Fluorene	8.4 U	ug/kg	8.4	1.4	1	05/31/14 05:45	06/05/14 12:12	86-73-7	
Phenanthrene	8.4 U	ug/kg	8.4	1.1	1	05/31/14 05:45	06/05/14 12:12	85-01-8	
Pyrene	8.4 U	ug/kg	8.4	0.88	1	05/31/14 05:45	06/05/14 12:12	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	83 %		30-90		1	05/31/14 05:45	06/05/14 12:12	321-60-8	
Terphenyl-d14 (S)	98 %		53-124		1	05/31/14 05:45	06/05/14 12:12	1718-51-0	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	5.4 U	ug/kg	5.4	0.84	1		06/03/14 13:39	71-43-2	
Naphthalene	5.4 U	ug/kg	5.4	2.7	1		06/03/14 13:39	91-20-3	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/03/14 13:39	2037-26-5	
4-Bromofluorobenzene (S)	103 %		74-121		1		06/03/14 13:39	460-00-4	
1,2-Dichloroethane-d4 (S)	122 %		80-120		1		06/03/14 13:39	17060-07-0	S3
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	20.9 %		0.10	0.10	1		06/03/14 18:10		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: K SB02 @ 4' **Lab ID: 30121605004** Collected: 05/27/14 08:50 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	26.9	mg/kg	0.89	0.051	1	06/02/14 11:44	06/03/14 11:52	7440-62-2	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	8.5 U	ug/kg	8.5	1.1	1	05/31/14 05:45	06/05/14 12:30	120-12-7	
Benzo(a)anthracene	8.5 U	ug/kg	8.5	0.57	1	05/31/14 05:45	06/05/14 12:30	56-55-3	
Benzo(a)pyrene	8.5 U	ug/kg	8.5	0.50	1	05/31/14 05:45	06/05/14 12:30	50-32-8	
Benzo(b)fluoranthene	8.5 U	ug/kg	8.5	0.79	1	05/31/14 05:45	06/05/14 12:30	205-99-2	
Benzo(g,h,i)perylene	8.5 U	ug/kg	8.5	0.69	1	05/31/14 05:45	06/05/14 12:30	191-24-2	
Chrysene	8.5 U	ug/kg	8.5	1.1	1	05/31/14 05:45	06/05/14 12:30	218-01-9	
Fluorene	8.5 U	ug/kg	8.5	1.4	1	05/31/14 05:45	06/05/14 12:30	86-73-7	
Phenanthrene	8.5 U	ug/kg	8.5	1.1	1	05/31/14 05:45	06/05/14 12:30	85-01-8	
Pyrene	8.5 U	ug/kg	8.5	0.89	1	05/31/14 05:45	06/05/14 12:30	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75 %		30-90		1	05/31/14 05:45	06/05/14 12:30	321-60-8	
Terphenyl-d14 (S)	94 %		53-124		1	05/31/14 05:45	06/05/14 12:30	1718-51-0	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	5.9 U	ug/kg	5.9	0.92	1		06/03/14 14:01	71-43-2	
Naphthalene	5.9 U	ug/kg	5.9	3.0	1		06/03/14 14:01	91-20-3	
Surrogates									
Toluene-d8 (S)	94 %		81-117		1		06/03/14 14:01	2037-26-5	
4-Bromofluorobenzene (S)	103 %		74-121		1		06/03/14 14:01	460-00-4	
1,2-Dichloroethane-d4 (S)	124 %		80-120		1		06/03/14 14:01	17060-07-0	S3
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	22.2	%	0.10	0.10	1		06/03/14 18:10		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: K SB03 @ 4' **Lab ID: 30121605005** Collected: 05/27/14 09:10 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	20.6	mg/kg	0.90	0.051	1	06/02/14 11:44	06/03/14 11:54	7440-62-2	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	8.3 U	ug/kg	8.3	1.1	1	05/31/14 05:45	06/05/14 12:48	120-12-7	
Benzo(a)anthracene	8.3 U	ug/kg	8.3	0.56	1	05/31/14 05:45	06/05/14 12:48	56-55-3	
Benzo(a)pyrene	8.3 U	ug/kg	8.3	0.49	1	05/31/14 05:45	06/05/14 12:48	50-32-8	
Benzo(b)fluoranthene	8.3 U	ug/kg	8.3	0.78	1	05/31/14 05:45	06/05/14 12:48	205-99-2	
Benzo(g,h,i)perylene	8.3 U	ug/kg	8.3	0.68	1	05/31/14 05:45	06/05/14 12:48	191-24-2	
Chrysene	8.3 U	ug/kg	8.3	1.0	1	05/31/14 05:45	06/05/14 12:48	218-01-9	
Fluorene	8.3 U	ug/kg	8.3	1.4	1	05/31/14 05:45	06/05/14 12:48	86-73-7	
Phenanthrene	8.3 U	ug/kg	8.3	1.1	1	05/31/14 05:45	06/05/14 12:48	85-01-8	
Pyrene	8.3 U	ug/kg	8.3	0.87	1	05/31/14 05:45	06/05/14 12:48	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76 %		30-90		1	05/31/14 05:45	06/05/14 12:48	321-60-8	
Terphenyl-d14 (S)	92 %		53-124		1	05/31/14 05:45	06/05/14 12:48	1718-51-0	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	5.0 U	ug/kg	5.0	0.78	1		06/03/14 14:24	71-43-2	
Naphthalene	5.0 U	ug/kg	5.0	2.5	1		06/03/14 14:24	91-20-3	
Surrogates									
Toluene-d8 (S)	95 %		81-117		1		06/03/14 14:24	2037-26-5	
4-Bromofluorobenzene (S)	105 %		74-121		1		06/03/14 14:24	460-00-4	
1,2-Dichloroethane-d4 (S)	123 %		80-120		1		06/03/14 14:24	17060-07-0	S3
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	20.6	%	0.10	0.10	1		06/03/14 18:11		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: K SB04 @ 4' **Lab ID: 30121605006** Collected: 05/27/14 09:05 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	32.4	mg/kg	0.86	0.049	1	06/02/14 11:44	06/03/14 11:56	7440-62-2	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3546									
Anthracene	8.1 U	ug/kg	8.1	1.0	1	05/31/14 05:45	06/05/14 13:06	120-12-7	
Benzo(a)anthracene	8.1 U	ug/kg	8.1	0.55	1	05/31/14 05:45	06/05/14 13:06	56-55-3	
Benzo(a)pyrene	8.1 U	ug/kg	8.1	0.48	1	05/31/14 05:45	06/05/14 13:06	50-32-8	
Benzo(b)fluoranthene	8.1 U	ug/kg	8.1	0.76	1	05/31/14 05:45	06/05/14 13:06	205-99-2	
Benzo(g,h,i)perylene	8.1 U	ug/kg	8.1	0.66	1	05/31/14 05:45	06/05/14 13:06	191-24-2	
Chrysene	8.1 U	ug/kg	8.1	1.0	1	05/31/14 05:45	06/05/14 13:06	218-01-9	
Fluorene	8.1 U	ug/kg	8.1	1.4	1	05/31/14 05:45	06/05/14 13:06	86-73-7	
Phenanthrene	8.1 U	ug/kg	8.1	1.0	1	05/31/14 05:45	06/05/14 13:06	85-01-8	
Pyrene	8.1 U	ug/kg	8.1	0.85	1	05/31/14 05:45	06/05/14 13:06	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70 %		30-90		1	05/31/14 05:45	06/05/14 13:06	321-60-8	
Terphenyl-d14 (S)	90 %		53-124		1	05/31/14 05:45	06/05/14 13:06	1718-51-0	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	4.6 U	ug/kg	4.6	0.72	1		06/03/14 14:46	71-43-2	
Naphthalene	4.6 U	ug/kg	4.6	2.3	1		06/03/14 14:46	91-20-3	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/03/14 14:46	2037-26-5	
4-Bromofluorobenzene (S)	105 %		74-121		1		06/03/14 14:46	460-00-4	
1,2-Dichloroethane-d4 (S)	121 %		80-120		1		06/03/14 14:46	17060-07-0	S3
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	17.9	%	0.10	0.10	1		06/03/14 18:11		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB01 @ 1.5' **Lab ID: 30121605007** Collected: 05/27/14 12:15 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	3.2J	mg/kg	8.0	1.3	1	06/04/14 09:00	06/06/14 13:22		
Surrogates									
o-Terphenyl (S)	54 %		20-129		1	06/04/14 09:00	06/06/14 13:22	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.49 U	mg/kg	0.49	0.31	1	06/02/14 11:44	06/03/14 11:58	7440-36-0	
Arsenic	5.1	mg/kg	0.41	0.29	1	06/02/14 11:44	06/03/14 11:58	7440-38-2	
Barium	73.8	mg/kg	1.6	0.046	1	06/02/14 11:44	06/03/14 11:58	7440-39-3	
Beryllium	0.80	mg/kg	0.16	0.019	1	06/02/14 11:44	06/03/14 11:58	7440-41-7	
Cadmium	0.25 U	mg/kg	0.25	0.032	1	06/02/14 11:44	06/03/14 11:58	7440-43-9	
Chromium	26.8	mg/kg	0.41	0.057	1	06/02/14 11:44	06/03/14 11:58	7440-47-3	
Copper	16.9	mg/kg	0.82	0.15	1	06/02/14 11:44	06/03/14 11:58	7440-50-8	
Lead	20.9	mg/kg	0.41	0.22	1	06/02/14 11:44	06/03/14 11:58	7439-92-1	
Nickel	15.2	mg/kg	1.6	0.11	1	06/02/14 11:44	06/03/14 11:58	7440-02-0	
Selenium	0.66 U	mg/kg	0.66	0.47	1	06/02/14 11:44	06/03/14 11:58	7782-49-2	
Silver	0.49 U	mg/kg	0.49	0.044	1	06/02/14 11:44	06/03/14 11:58	7440-22-4	
Thallium	1.6 U	mg/kg	1.6	0.27	1	06/02/14 11:44	06/03/14 11:58	7440-28-0	
Vanadium	35.3	mg/kg	0.82	0.047	1	06/02/14 11:44	06/03/14 11:58	7440-62-2	
Zinc	42.7	mg/kg	0.82	0.37	1	06/02/14 11:44	06/03/14 11:58	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.016J	mg/kg	0.12	0.0026	1	06/02/14 11:56	06/03/14 14:49	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	395 U	ug/kg	395	46.1	1	06/02/14 16:30	06/05/14 16:41	83-32-9	
Acenaphthylene	395 U	ug/kg	395	45.5	1	06/02/14 16:30	06/05/14 16:41	208-96-8	
Anthracene	395 U	ug/kg	395	61.9	1	06/02/14 16:30	06/05/14 16:41	120-12-7	
Azobenzene	395 U	ug/kg	395	41.4	1	06/02/14 16:30	06/05/14 16:41	103-33-3	N2
Benzidine	3920 U	ug/kg	3920	3920	1	06/02/14 16:30	06/27/14 17:22	92-87-5	
Benzo(a)anthracene	395 U	ug/kg	395	45.7	1	06/02/14 16:30	06/05/14 16:41	56-55-3	
Benzo(a)pyrene	395 U	ug/kg	395	133	1	06/02/14 16:30	06/05/14 16:41	50-32-8	
Benzo(b)fluoranthene	395 U	ug/kg	395	78.0	1	06/02/14 16:30	06/05/14 16:41	205-99-2	
Benzo(g,h,i)perylene	395 U	ug/kg	395	113	1	06/02/14 16:30	06/05/14 16:41	191-24-2	
Benzo(k)fluoranthene	395 U	ug/kg	395	141	1	06/02/14 16:30	06/05/14 16:41	207-08-9	
4-Bromophenylphenyl ether	395 U	ug/kg	395	58.4	1	06/02/14 16:30	06/05/14 16:41	101-55-3	
Butylbenzylphthalate	395 U	ug/kg	395	45.4	1	06/02/14 16:30	06/05/14 16:41	85-68-7	
bis(2-Chloroethoxy)methane	395 U	ug/kg	395	64.7	1	06/02/14 16:30	06/05/14 16:41	111-91-1	
bis(2-Chloroethyl) ether	395 U	ug/kg	395	186	1	06/02/14 16:30	06/05/14 16:41	111-44-4	
bis(2-Chloroisopropyl) ether	395 U	ug/kg	395	52.5	1	06/02/14 16:30	06/05/14 16:41	108-60-1	
2-Chloronaphthalene	395 U	ug/kg	395	41.6	1	06/02/14 16:30	06/05/14 16:41	91-58-7	
2-Chlorophenol	395 U	ug/kg	395	50.5	1	06/02/14 16:30	06/05/14 16:41	95-57-8	
4-Chlorophenylphenyl ether	395 U	ug/kg	395	53.9	1	06/02/14 16:30	06/05/14 16:41	7005-72-3	
Chrysene	395 U	ug/kg	395	85.1	1	06/02/14 16:30	06/05/14 16:41	218-01-9	
Dibenz(a,h)anthracene	395 U	ug/kg	395	133	1	06/02/14 16:30	06/05/14 16:41	53-70-3	
1,2-Dichlorobenzene	395 U	ug/kg	395	58.8	1	06/02/14 16:30	06/05/14 16:41	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB01 @ 1.5' **Lab ID: 30121605007** Collected: 05/27/14 12:15 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	395 U	ug/kg	395	65.7	1	06/02/14 16:30	06/05/14 16:41	541-73-1	
1,4-Dichlorobenzene	395 U	ug/kg	395	55.7	1	06/02/14 16:30	06/05/14 16:41	106-46-7	
3,3'-Dichlorobenzidine	395 U	ug/kg	395	43.1	1	06/02/14 16:30	06/05/14 16:41	91-94-1	
2,4-Dichlorophenol	395 U	ug/kg	395	67.9	1	06/02/14 16:30	06/05/14 16:41	120-83-2	
Diethylphthalate	395 U	ug/kg	395	43.6	1	06/02/14 16:30	06/05/14 16:41	84-66-2	
2,4-Dimethylphenol	395 U	ug/kg	395	69.8	1	06/02/14 16:30	06/05/14 16:41	105-67-9	
Dimethylphthalate	395 U	ug/kg	395	56.2	1	06/02/14 16:30	06/05/14 16:41	131-11-3	
Di-n-butylphthalate	395 U	ug/kg	395	65.5	1	06/02/14 16:30	06/05/14 16:41	84-74-2	
4,6-Dinitro-2-methylphenol	989 U	ug/kg	989	112	1	06/02/14 16:30	06/05/14 16:41	534-52-1	
2,4-Dinitrophenol	989 U	ug/kg	989	359	1	06/02/14 16:30	06/05/14 16:41	51-28-5	
2,4-Dinitrotoluene	395 U	ug/kg	395	82.8	1	06/02/14 16:30	06/05/14 16:41	121-14-2	
2,6-Dinitrotoluene	395 U	ug/kg	395	51.9	1	06/02/14 16:30	06/05/14 16:41	606-20-2	
Di-n-octylphthalate	395 U	ug/kg	395	72.9	1	06/02/14 16:30	06/05/14 16:41	117-84-0	
bis(2-Ethylhexyl)phthalate	395 U	ug/kg	395	135	1	06/02/14 16:30	06/05/14 16:41	117-81-7	
Fluoranthene	395 U	ug/kg	395	60.4	1	06/02/14 16:30	06/05/14 16:41	206-44-0	
Fluorene	395 U	ug/kg	395	55.7	1	06/02/14 16:30	06/05/14 16:41	86-73-7	
Hexachloro-1,3-butadiene	395 U	ug/kg	395	70.1	1	06/02/14 16:30	06/05/14 16:41	87-68-3	
Hexachlorobenzene	395 U	ug/kg	395	51.1	1	06/02/14 16:30	06/05/14 16:41	118-74-1	
Hexachlorocyclopentadiene	395 U	ug/kg	395	127	1	06/02/14 16:30	06/05/14 16:41	77-47-4	
Hexachloroethane	395 U	ug/kg	395	60.8	1	06/02/14 16:30	06/05/14 16:41	67-72-1	
Indeno(1,2,3-cd)pyrene	395 U	ug/kg	395	96.5	1	06/02/14 16:30	06/05/14 16:41	193-39-5	
Isophorone	395 U	ug/kg	395	43.2	1	06/02/14 16:30	06/05/14 16:41	78-59-1	
2-Methylphenol(o-Cresol)	395 U	ug/kg	395	69.9	1	06/02/14 16:30	06/05/14 16:41	95-48-7	
3&4-Methylphenol(m&p Cresol)	791 U	ug/kg	791	79.7	1	06/02/14 16:30	06/05/14 16:41		
Naphthalene	395 U	ug/kg	395	52.7	1	06/02/14 16:30	06/05/14 16:41	91-20-3	
Nitrobenzene	395 U	ug/kg	395	62.1	1	06/02/14 16:30	06/05/14 16:41	98-95-3	
2-Nitrophenol	395 U	ug/kg	395	44.4	1	06/02/14 16:30	06/05/14 16:41	88-75-5	
4-Nitrophenol	395 U	ug/kg	395	164	1	06/02/14 16:30	06/05/14 16:41	100-02-7	
N-Nitrosodimethylamine	395 U	ug/kg	395	50.8	1	06/02/14 16:30	06/05/14 16:41	62-75-9	
N-Nitroso-di-n-propylamine	395 U	ug/kg	395	46.8	1	06/02/14 16:30	06/05/14 16:41	621-64-7	
N-Nitrosodiphenylamine	395 U	ug/kg	395	40.0	1	06/02/14 16:30	06/05/14 16:41	86-30-6	
Pentachlorophenol	989 U	ug/kg	989	98.9	1	06/02/14 16:30	06/05/14 16:41	87-86-5	
Phenanthrene	395 U	ug/kg	395	73.0	1	06/02/14 16:30	06/05/14 16:41	85-01-8	
Phenol	395 U	ug/kg	395	96.1	1	06/02/14 16:30	06/05/14 16:41	108-95-2	
Pyrene	395 U	ug/kg	395	60.2	1	06/02/14 16:30	06/05/14 16:41	129-00-0	
1,2,4-Trichlorobenzene	395 U	ug/kg	395	60.6	1	06/02/14 16:30	06/05/14 16:41	120-82-1	
2,4,6-Trichlorophenol	395 U	ug/kg	395	72.3	1	06/02/14 16:30	06/05/14 16:41	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	86 %		34-107		1	06/02/14 16:30	06/05/14 16:41	4165-60-0	
2-Fluorobiphenyl (S)	88 %		38-107		1	06/02/14 16:30	06/05/14 16:41	321-60-8	
Terphenyl-d14 (S)	90 %		34-129		1	06/02/14 16:30	06/05/14 16:41	1718-51-0	
Phenol-d6 (S)	76 %		20-102		1	06/02/14 16:30	06/05/14 16:41	13127-88-3	
2-Fluorophenol (S)	76 %		29-88		1	06/02/14 16:30	06/05/14 16:41	367-12-4	
2,4,6-Tribromophenol (S)	88 %		13-114		1	06/02/14 16:30	06/05/14 16:41	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB01 @ 1.5' **Lab ID: 30121605007** Collected: 05/27/14 12:15 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	97.9 U	ug/kg	97.9	29.9	1		06/03/14 12:56	123-91-1	
Surrogates									
Toluene-d8 (S)	90	%	81-117		1		06/04/14 14:25	2037-26-5	
4-Bromofluorobenzene (S)	105	%	74-121		1		06/04/14 14:25	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	80-120		1		06/04/14 14:25	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	16.8	%	0.10	0.10	1		06/03/14 18:12		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: L SB01 @ 8' **Lab ID: 30121605008** Collected: 05/27/14 12:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	1.4J	mg/kg	7.8	1.3	1	06/04/14 09:00	06/06/14 13:59		
Surrogates									
o-Terphenyl (S)	58 %		20-129		1	06/04/14 09:00	06/06/14 13:59	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.47 U	mg/kg	0.47	0.29	1	06/02/14 11:44	06/03/14 12:17	7440-36-0	
Arsenic	3.5	mg/kg	0.39	0.28	1	06/02/14 11:44	06/03/14 12:17	7440-38-2	
Barium	209	mg/kg	15.7	0.44	10	06/02/14 11:44	06/03/14 13:01	7440-39-3	
Beryllium	1.8	mg/kg	1.6	0.18	10	06/02/14 11:44	06/03/14 13:01	7440-41-7	
Cadmium	0.23J	mg/kg	0.24	0.031	1	06/02/14 11:44	06/03/14 12:17	7440-43-9	
Chromium	20.7	mg/kg	0.39	0.054	1	06/02/14 11:44	06/03/14 12:17	7440-47-3	
Copper	15.0	mg/kg	7.8	1.4	10	06/02/14 11:44	06/03/14 13:01	7440-50-8	
Lead	27.6	mg/kg	0.39	0.21	1	06/02/14 11:44	06/03/14 12:17	7439-92-1	
Nickel	27.7	mg/kg	1.6	0.11	1	06/02/14 11:44	06/03/14 12:17	7440-02-0	
Selenium	0.63 U	mg/kg	0.63	0.45	1	06/02/14 11:44	06/03/14 12:17	7782-49-2	
Silver	0.47 U	mg/kg	0.47	0.042	1	06/02/14 11:44	06/03/14 12:17	7440-22-4	
Thallium	1.6 U	mg/kg	1.6	0.26	1	06/02/14 11:44	06/03/14 12:17	7440-28-0	
Vanadium	13.4	mg/kg	0.78	0.045	1	06/02/14 11:44	06/03/14 12:17	7440-62-2	
Zinc	72.1	mg/kg	0.78	0.35	1	06/02/14 11:44	06/03/14 12:17	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.0049J	mg/kg	0.12	0.0025	1	06/02/14 11:56	06/03/14 14:54	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	391 U	ug/kg	391	45.5	1	06/02/14 16:30	06/05/14 17:00	83-32-9	
Acenaphthylene	391 U	ug/kg	391	44.9	1	06/02/14 16:30	06/05/14 17:00	208-96-8	
Anthracene	391 U	ug/kg	391	61.1	1	06/02/14 16:30	06/05/14 17:00	120-12-7	
Azobenzene	391 U	ug/kg	391	40.9	1	06/02/14 16:30	06/05/14 17:00	103-33-3	N2
Benzidine	3870 U	ug/kg	3870	3870	1	06/02/14 16:30	06/27/14 17:42	92-87-5	IS
Benzo(a)anthracene	391 U	ug/kg	391	45.2	1	06/02/14 16:30	06/05/14 17:00	56-55-3	
Benzo(a)pyrene	391 U	ug/kg	391	131	1	06/02/14 16:30	06/05/14 17:00	50-32-8	
Benzo(b)fluoranthene	391 U	ug/kg	391	77.1	1	06/02/14 16:30	06/05/14 17:00	205-99-2	
Benzo(g,h,i)perylene	391 U	ug/kg	391	112	1	06/02/14 16:30	06/05/14 17:00	191-24-2	
Benzo(k)fluoranthene	391 U	ug/kg	391	140	1	06/02/14 16:30	06/05/14 17:00	207-08-9	
4-Bromophenylphenyl ether	391 U	ug/kg	391	57.7	1	06/02/14 16:30	06/05/14 17:00	101-55-3	
Butylbenzylphthalate	391 U	ug/kg	391	44.8	1	06/02/14 16:30	06/05/14 17:00	85-68-7	
bis(2-Chloroethoxy)methane	391 U	ug/kg	391	63.9	1	06/02/14 16:30	06/05/14 17:00	111-91-1	
bis(2-Chloroethyl) ether	391 U	ug/kg	391	184	1	06/02/14 16:30	06/05/14 17:00	111-44-4	
bis(2-Chloroisopropyl) ether	391 U	ug/kg	391	51.8	1	06/02/14 16:30	06/05/14 17:00	108-60-1	
2-Chloronaphthalene	391 U	ug/kg	391	41.1	1	06/02/14 16:30	06/05/14 17:00	91-58-7	
2-Chlorophenol	391 U	ug/kg	391	49.8	1	06/02/14 16:30	06/05/14 17:00	95-57-8	
4-Chlorophenylphenyl ether	391 U	ug/kg	391	53.3	1	06/02/14 16:30	06/05/14 17:00	7005-72-3	
Chrysene	391 U	ug/kg	391	84.1	1	06/02/14 16:30	06/05/14 17:00	218-01-9	
Dibenz(a,h)anthracene	391 U	ug/kg	391	131	1	06/02/14 16:30	06/05/14 17:00	53-70-3	
1,2-Dichlorobenzene	391 U	ug/kg	391	58.1	1	06/02/14 16:30	06/05/14 17:00	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB01 @ 8' **Lab ID: 30121605008** Collected: 05/27/14 12:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	391 U	ug/kg	391	64.9	1	06/02/14 16:30	06/05/14 17:00	541-73-1	
1,4-Dichlorobenzene	391 U	ug/kg	391	55.0	1	06/02/14 16:30	06/05/14 17:00	106-46-7	
3,3'-Dichlorobenzidine	391 U	ug/kg	391	42.6	1	06/02/14 16:30	06/05/14 17:00	91-94-1	
2,4-Dichlorophenol	391 U	ug/kg	391	67.1	1	06/02/14 16:30	06/05/14 17:00	120-83-2	
Diethylphthalate	391 U	ug/kg	391	43.0	1	06/02/14 16:30	06/05/14 17:00	84-66-2	
2,4-Dimethylphenol	391 U	ug/kg	391	69.0	1	06/02/14 16:30	06/05/14 17:00	105-67-9	
Dimethylphthalate	391 U	ug/kg	391	55.5	1	06/02/14 16:30	06/05/14 17:00	131-11-3	
Di-n-butylphthalate	391 U	ug/kg	391	64.7	1	06/02/14 16:30	06/05/14 17:00	84-74-2	
4,6-Dinitro-2-methylphenol	977 U	ug/kg	977	111	1	06/02/14 16:30	06/05/14 17:00	534-52-1	
2,4-Dinitrophenol	977 U	ug/kg	977	354	1	06/02/14 16:30	06/05/14 17:00	51-28-5	
2,4-Dinitrotoluene	391 U	ug/kg	391	81.8	1	06/02/14 16:30	06/05/14 17:00	121-14-2	
2,6-Dinitrotoluene	391 U	ug/kg	391	51.3	1	06/02/14 16:30	06/05/14 17:00	606-20-2	
Di-n-octylphthalate	391 U	ug/kg	391	72.0	1	06/02/14 16:30	06/05/14 17:00	117-84-0	
bis(2-Ethylhexyl)phthalate	302J	ug/kg	391	134	1	06/02/14 16:30	06/05/14 17:00	117-81-7	
Fluoranthene	391 U	ug/kg	391	59.7	1	06/02/14 16:30	06/05/14 17:00	206-44-0	
Fluorene	391 U	ug/kg	391	55.0	1	06/02/14 16:30	06/05/14 17:00	86-73-7	
Hexachloro-1,3-butadiene	391 U	ug/kg	391	69.2	1	06/02/14 16:30	06/05/14 17:00	87-68-3	
Hexachlorobenzene	391 U	ug/kg	391	50.4	1	06/02/14 16:30	06/05/14 17:00	118-74-1	
Hexachlorocyclopentadiene	391 U	ug/kg	391	126	1	06/02/14 16:30	06/05/14 17:00	77-47-4	
Hexachloroethane	391 U	ug/kg	391	60.1	1	06/02/14 16:30	06/05/14 17:00	67-72-1	
Indeno(1,2,3-cd)pyrene	391 U	ug/kg	391	95.4	1	06/02/14 16:30	06/05/14 17:00	193-39-5	
Isophorone	391 U	ug/kg	391	42.7	1	06/02/14 16:30	06/05/14 17:00	78-59-1	
2-Methylphenol(o-Cresol)	391 U	ug/kg	391	69.1	1	06/02/14 16:30	06/05/14 17:00	95-48-7	
3&4-Methylphenol(m&p Cresol)	781 U	ug/kg	781	78.7	1	06/02/14 16:30	06/05/14 17:00		
Naphthalene	391 U	ug/kg	391	52.1	1	06/02/14 16:30	06/05/14 17:00	91-20-3	
Nitrobenzene	391 U	ug/kg	391	61.3	1	06/02/14 16:30	06/05/14 17:00	98-95-3	
2-Nitrophenol	391 U	ug/kg	391	43.9	1	06/02/14 16:30	06/05/14 17:00	88-75-5	
4-Nitrophenol	391 U	ug/kg	391	162	1	06/02/14 16:30	06/05/14 17:00	100-02-7	
N-Nitrosodimethylamine	391 U	ug/kg	391	50.2	1	06/02/14 16:30	06/05/14 17:00	62-75-9	
N-Nitroso-di-n-propylamine	391 U	ug/kg	391	46.2	1	06/02/14 16:30	06/05/14 17:00	621-64-7	
N-Nitrosodiphenylamine	391 U	ug/kg	391	39.5	1	06/02/14 16:30	06/05/14 17:00	86-30-6	
Pentachlorophenol	977 U	ug/kg	977	97.7	1	06/02/14 16:30	06/05/14 17:00	87-86-5	
Phenanthrene	391 U	ug/kg	391	72.1	1	06/02/14 16:30	06/05/14 17:00	85-01-8	
Phenol	391 U	ug/kg	391	94.9	1	06/02/14 16:30	06/05/14 17:00	108-95-2	
Pyrene	391 U	ug/kg	391	59.5	1	06/02/14 16:30	06/05/14 17:00	129-00-0	
1,2,4-Trichlorobenzene	391 U	ug/kg	391	59.8	1	06/02/14 16:30	06/05/14 17:00	120-82-1	
2,4,6-Trichlorophenol	391 U	ug/kg	391	71.4	1	06/02/14 16:30	06/05/14 17:00	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	88 %		34-107		1	06/02/14 16:30	06/05/14 17:00	4165-60-0	
2-Fluorobiphenyl (S)	89 %		38-107		1	06/02/14 16:30	06/05/14 17:00	321-60-8	
Terphenyl-d14 (S)	87 %		34-129		1	06/02/14 16:30	06/05/14 17:00	1718-51-0	
Phenol-d6 (S)	71 %		20-102		1	06/02/14 16:30	06/05/14 17:00	13127-88-3	
2-Fluorophenol (S)	75 %		29-88		1	06/02/14 16:30	06/05/14 17:00	367-12-4	
2,4,6-Tribromophenol (S)	83 %		13-114		1	06/02/14 16:30	06/05/14 17:00	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB01 @ 8' **Lab ID: 30121605008** Collected: 05/27/14 12:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	97.4 U	ug/kg	97.4	29.8	1		06/03/14 16:08	123-91-1	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/04/14 14:52	2037-26-5	
4-Bromofluorobenzene (S)	103 %		74-121		1		06/04/14 14:52	460-00-4	
1,2-Dichloroethane-d4 (S)	121 %		80-120		1		06/04/14 14:52	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	15.0 %		0.10	0.10	1		06/03/14 18:12		

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: L SB02 @ 1.5' **Lab ID: 30121605009** Collected: 05/27/14 12:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	3.7J	mg/kg	7.8	1.3	1	06/04/14 09:00	06/06/14 14:17		
Surrogates									
o-Terphenyl (S)	61 %		20-129		1	06/04/14 09:00	06/06/14 14:17	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.46 U	mg/kg	0.46	0.29	1	06/02/14 11:44	06/03/14 12:20	7440-36-0	
Arsenic	4.6	mg/kg	0.39	0.28	1	06/02/14 11:44	06/03/14 12:20	7440-38-2	
Barium	117	mg/kg	1.5	0.043	1	06/02/14 11:44	06/03/14 12:20	7440-39-3	
Beryllium	1.1	mg/kg	0.15	0.018	1	06/02/14 11:44	06/03/14 12:20	7440-41-7	
Cadmium	0.098J	mg/kg	0.23	0.030	1	06/02/14 11:44	06/03/14 12:20	7440-43-9	
Chromium	28.4	mg/kg	0.39	0.053	1	06/02/14 11:44	06/03/14 12:20	7440-47-3	
Copper	27.1	mg/kg	0.77	0.14	1	06/02/14 11:44	06/03/14 12:20	7440-50-8	
Lead	26.5	mg/kg	0.39	0.21	1	06/02/14 11:44	06/03/14 12:20	7439-92-1	
Nickel	19.3	mg/kg	1.5	0.11	1	06/02/14 11:44	06/03/14 12:20	7440-02-0	
Selenium	0.62 U	mg/kg	0.62	0.45	1	06/02/14 11:44	06/03/14 12:20	7782-49-2	
Silver	0.46 U	mg/kg	0.46	0.041	1	06/02/14 11:44	06/03/14 12:20	7440-22-4	
Thallium	1.5 U	mg/kg	1.5	0.25	1	06/02/14 11:44	06/03/14 12:20	7440-28-0	
Vanadium	36.9	mg/kg	0.77	0.044	1	06/02/14 11:44	06/03/14 12:20	7440-62-2	
Zinc	60.1	mg/kg	0.77	0.35	1	06/02/14 11:44	06/03/14 12:20	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.015J	mg/kg	0.11	0.0024	1	06/02/14 11:56	06/03/14 14:56	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	1940 U	ug/kg	1940	227	5	06/02/14 16:30	06/05/14 17:20	83-32-9	
Acenaphthylene	1940 U	ug/kg	1940	224	5	06/02/14 16:30	06/05/14 17:20	208-96-8	
Anthracene	1940 U	ug/kg	1940	304	5	06/02/14 16:30	06/05/14 17:20	120-12-7	
Azobenzene	1940 U	ug/kg	1940	204	5	06/02/14 16:30	06/05/14 17:20	103-33-3	N2
Benzidine	3850 U	ug/kg	3850	3850	1	06/02/14 16:30	06/27/14 18:02	92-87-5	
Benzo(a)anthracene	1940 U	ug/kg	1940	225	5	06/02/14 16:30	06/05/14 17:20	56-55-3	
Benzo(a)pyrene	1940 U	ug/kg	1940	654	5	06/02/14 16:30	06/05/14 17:20	50-32-8	
Benzo(b)fluoranthene	1940 U	ug/kg	1940	384	5	06/02/14 16:30	06/05/14 17:20	205-99-2	
Benzo(g,h,i)perylene	1940 U	ug/kg	1940	558	5	06/02/14 16:30	06/05/14 17:20	191-24-2	
Benzo(k)fluoranthene	1940 U	ug/kg	1940	695	5	06/02/14 16:30	06/05/14 17:20	207-08-9	
4-Bromophenylphenyl ether	1940 U	ug/kg	1940	287	5	06/02/14 16:30	06/05/14 17:20	101-55-3	
Butylbenzylphthalate	1940 U	ug/kg	1940	223	5	06/02/14 16:30	06/05/14 17:20	85-68-7	
bis(2-Chloroethoxy)methane	1940 U	ug/kg	1940	318	5	06/02/14 16:30	06/05/14 17:20	111-91-1	
bis(2-Chloroethyl) ether	1940 U	ug/kg	1940	917	5	06/02/14 16:30	06/05/14 17:20	111-44-4	
bis(2-Chloroisopropyl) ether	1940 U	ug/kg	1940	258	5	06/02/14 16:30	06/05/14 17:20	108-60-1	
2-Chloronaphthalene	1940 U	ug/kg	1940	204	5	06/02/14 16:30	06/05/14 17:20	91-58-7	
2-Chlorophenol	1940 U	ug/kg	1940	248	5	06/02/14 16:30	06/05/14 17:20	95-57-8	
4-Chlorophenylphenyl ether	1940 U	ug/kg	1940	265	5	06/02/14 16:30	06/05/14 17:20	7005-72-3	
Chrysene	1940 U	ug/kg	1940	419	5	06/02/14 16:30	06/05/14 17:20	218-01-9	
Dibenz(a,h)anthracene	1940 U	ug/kg	1940	654	5	06/02/14 16:30	06/05/14 17:20	53-70-3	
1,2-Dichlorobenzene	1940 U	ug/kg	1940	289	5	06/02/14 16:30	06/05/14 17:20	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB02 @ 1.5' **Lab ID: 30121605009** Collected: 05/27/14 12:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	1940 U	ug/kg	1940	323	5	06/02/14 16:30	06/05/14 17:20	541-73-1	
1,4-Dichlorobenzene	1940 U	ug/kg	1940	274	5	06/02/14 16:30	06/05/14 17:20	106-46-7	
3,3'-Dichlorobenzidine	1940 U	ug/kg	1940	212	5	06/02/14 16:30	06/05/14 17:20	91-94-1	
2,4-Dichlorophenol	1940 U	ug/kg	1940	334	5	06/02/14 16:30	06/05/14 17:20	120-83-2	
Diethylphthalate	1940 U	ug/kg	1940	214	5	06/02/14 16:30	06/05/14 17:20	84-66-2	
2,4-Dimethylphenol	1940 U	ug/kg	1940	343	5	06/02/14 16:30	06/05/14 17:20	105-67-9	
Dimethylphthalate	1940 U	ug/kg	1940	276	5	06/02/14 16:30	06/05/14 17:20	131-11-3	
Di-n-butylphthalate	1940 U	ug/kg	1940	322	5	06/02/14 16:30	06/05/14 17:20	84-74-2	
4,6-Dinitro-2-methylphenol	4870 U	ug/kg	4870	551	5	06/02/14 16:30	06/05/14 17:20	534-52-1	
2,4-Dinitrophenol	4870 U	ug/kg	4870	1760	5	06/02/14 16:30	06/05/14 17:20	51-28-5	
2,4-Dinitrotoluene	1940 U	ug/kg	1940	407	5	06/02/14 16:30	06/05/14 17:20	121-14-2	
2,6-Dinitrotoluene	1940 U	ug/kg	1940	255	5	06/02/14 16:30	06/05/14 17:20	606-20-2	
Di-n-octylphthalate	1940 U	ug/kg	1940	359	5	06/02/14 16:30	06/05/14 17:20	117-84-0	
bis(2-Ethylhexyl)phthalate	1940 U	ug/kg	1940	666	5	06/02/14 16:30	06/05/14 17:20	117-81-7	
Fluoranthene	1940 U	ug/kg	1940	297	5	06/02/14 16:30	06/05/14 17:20	206-44-0	
Fluorene	1940 U	ug/kg	1940	274	5	06/02/14 16:30	06/05/14 17:20	86-73-7	
Hexachloro-1,3-butadiene	1940 U	ug/kg	1940	345	5	06/02/14 16:30	06/05/14 17:20	87-68-3	
Hexachlorobenzene	1940 U	ug/kg	1940	251	5	06/02/14 16:30	06/05/14 17:20	118-74-1	
Hexachlorocyclopentadiene	1940 U	ug/kg	1940	625	5	06/02/14 16:30	06/05/14 17:20	77-47-4	
Hexachloroethane	1940 U	ug/kg	1940	299	5	06/02/14 16:30	06/05/14 17:20	67-72-1	
Indeno(1,2,3-cd)pyrene	1940 U	ug/kg	1940	475	5	06/02/14 16:30	06/05/14 17:20	193-39-5	
Isophorone	1940 U	ug/kg	1940	213	5	06/02/14 16:30	06/05/14 17:20	78-59-1	
2-Methylphenol(o-Cresol)	1940 U	ug/kg	1940	344	5	06/02/14 16:30	06/05/14 17:20	95-48-7	
3&4-Methylphenol(m&p Cresol)	3890 U	ug/kg	3890	392	5	06/02/14 16:30	06/05/14 17:20		
Naphthalene	1940 U	ug/kg	1940	259	5	06/02/14 16:30	06/05/14 17:20	91-20-3	
Nitrobenzene	1940 U	ug/kg	1940	305	5	06/02/14 16:30	06/05/14 17:20	98-95-3	
2-Nitrophenol	1940 U	ug/kg	1940	218	5	06/02/14 16:30	06/05/14 17:20	88-75-5	
4-Nitrophenol	1940 U	ug/kg	1940	806	5	06/02/14 16:30	06/05/14 17:20	100-02-7	
N-Nitrosodimethylamine	1940 U	ug/kg	1940	250	5	06/02/14 16:30	06/05/14 17:20	62-75-9	
N-Nitroso-di-n-propylamine	1940 U	ug/kg	1940	230	5	06/02/14 16:30	06/05/14 17:20	621-64-7	
N-Nitrosodiphenylamine	1940 U	ug/kg	1940	197	5	06/02/14 16:30	06/05/14 17:20	86-30-6	
Pentachlorophenol	4870 U	ug/kg	4870	487	5	06/02/14 16:30	06/05/14 17:20	87-86-5	
Phenanthrene	1940 U	ug/kg	1940	359	5	06/02/14 16:30	06/05/14 17:20	85-01-8	
Phenol	1940 U	ug/kg	1940	472	5	06/02/14 16:30	06/05/14 17:20	108-95-2	
Pyrene	1940 U	ug/kg	1940	296	5	06/02/14 16:30	06/05/14 17:20	129-00-0	
1,2,4-Trichlorobenzene	1940 U	ug/kg	1940	298	5	06/02/14 16:30	06/05/14 17:20	120-82-1	
2,4,6-Trichlorophenol	1940 U	ug/kg	1940	356	5	06/02/14 16:30	06/05/14 17:20	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	74 %		34-107		5	06/02/14 16:30	06/05/14 17:20	4165-60-0	
2-Fluorobiphenyl (S)	78 %		38-107		5	06/02/14 16:30	06/05/14 17:20	321-60-8	
Terphenyl-d14 (S)	77 %		34-129		5	06/02/14 16:30	06/05/14 17:20	1718-51-0	
Phenol-d6 (S)	62 %		20-102		5	06/02/14 16:30	06/05/14 17:20	13127-88-3	
2-Fluorophenol (S)	68 %		29-88		5	06/02/14 16:30	06/05/14 17:20	367-12-4	
2,4,6-Tribromophenol (S)	66 %		13-114		5	06/02/14 16:30	06/05/14 17:20	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB02 @ 1.5' **Lab ID: 30121605009** Collected: 05/27/14 12:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	95.5 U	ug/kg	95.5	29.2	1		06/03/14 13:50	123-91-1	
Surrogates									
Toluene-d8 (S)	95 %		81-117		1		06/04/14 13:45	2037-26-5	
4-Bromofluorobenzene (S)	103 %		74-121		1		06/04/14 13:45	460-00-4	
1,2-Dichloroethane-d4 (S)	113 %		80-120		1		06/04/14 13:45	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	15.0 %		0.10	0.10	1		06/03/14 18:13		

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: L SB02 @ 7' **Lab ID: 30121605010** Collected: 05/27/14 12:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	1.8J	mg/kg	7.5	1.2	1	06/04/14 09:00	06/06/14 14:36		
Surrogates									
o-Terphenyl (S)	50 %		20-129		1	06/04/14 09:00	06/06/14 14:36	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.50 U	mg/kg	0.50	0.31	1	06/02/14 11:44	06/03/14 12:22	7440-36-0	
Arsenic	19.2	mg/kg	0.41	0.29	1	06/02/14 11:44	06/03/14 12:22	7440-38-2	
Barium	277	mg/kg	1.7	0.046	1	06/02/14 11:44	06/03/14 12:22	7440-39-3	
Beryllium	1.5	mg/kg	0.17	0.019	1	06/02/14 11:44	06/03/14 12:22	7440-41-7	
Cadmium	0.054J	mg/kg	0.25	0.033	1	06/02/14 11:44	06/03/14 12:22	7440-43-9	
Chromium	36.6	mg/kg	0.41	0.057	1	06/02/14 11:44	06/03/14 12:22	7440-47-3	
Copper	43.8	mg/kg	0.83	0.15	1	06/02/14 11:44	06/03/14 12:22	7440-50-8	
Lead	26.3	mg/kg	0.41	0.22	1	06/02/14 11:44	06/03/14 12:22	7439-92-1	
Nickel	29.1	mg/kg	1.7	0.11	1	06/02/14 11:44	06/03/14 12:22	7440-02-0	
Selenium	0.66 U	mg/kg	0.66	0.48	1	06/02/14 11:44	06/03/14 12:22	7782-49-2	
Silver	0.50 U	mg/kg	0.50	0.044	1	06/02/14 11:44	06/03/14 12:22	7440-22-4	
Thallium	1.7 U	mg/kg	1.7	0.27	1	06/02/14 11:44	06/03/14 12:22	7440-28-0	
Vanadium	72.1	mg/kg	0.83	0.047	1	06/02/14 11:44	06/03/14 12:22	7440-62-2	
Zinc	88.1	mg/kg	0.83	0.37	1	06/02/14 11:44	06/03/14 12:22	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.10 U	mg/kg	0.10	0.0022	1	06/02/14 11:56	06/03/14 14:58	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	374 U	ug/kg	374	43.6	1	06/02/14 16:30	06/05/14 17:40	83-32-9	
Acenaphthylene	374 U	ug/kg	374	43.0	1	06/02/14 16:30	06/05/14 17:40	208-96-8	
Anthracene	374 U	ug/kg	374	58.5	1	06/02/14 16:30	06/05/14 17:40	120-12-7	
Azobenzene	374 U	ug/kg	374	39.2	1	06/02/14 16:30	06/05/14 17:40	103-33-3	N2
Benzidine	3710 U	ug/kg	3710	3710	1	06/02/14 16:30	06/27/14 18:22	92-87-5	
Benzo(a)anthracene	374 U	ug/kg	374	43.2	1	06/02/14 16:30	06/05/14 17:40	56-55-3	
Benzo(a)pyrene	374 U	ug/kg	374	126	1	06/02/14 16:30	06/05/14 17:40	50-32-8	
Benzo(b)fluoranthene	374 U	ug/kg	374	73.8	1	06/02/14 16:30	06/05/14 17:40	205-99-2	
Benzo(g,h,i)perylene	374 U	ug/kg	374	107	1	06/02/14 16:30	06/05/14 17:40	191-24-2	
Benzo(k)fluoranthene	374 U	ug/kg	374	134	1	06/02/14 16:30	06/05/14 17:40	207-08-9	
4-Bromophenylphenyl ether	374 U	ug/kg	374	55.2	1	06/02/14 16:30	06/05/14 17:40	101-55-3	
Butylbenzylphthalate	374 U	ug/kg	374	42.9	1	06/02/14 16:30	06/05/14 17:40	85-68-7	
bis(2-Chloroethoxy)methane	374 U	ug/kg	374	61.2	1	06/02/14 16:30	06/05/14 17:40	111-91-1	
bis(2-Chloroethyl) ether	374 U	ug/kg	374	176	1	06/02/14 16:30	06/05/14 17:40	111-44-4	
bis(2-Chloroisopropyl) ether	374 U	ug/kg	374	49.6	1	06/02/14 16:30	06/05/14 17:40	108-60-1	
2-Chloronaphthalene	374 U	ug/kg	374	39.3	1	06/02/14 16:30	06/05/14 17:40	91-58-7	
2-Chlorophenol	374 U	ug/kg	374	47.7	1	06/02/14 16:30	06/05/14 17:40	95-57-8	
4-Chlorophenylphenyl ether	374 U	ug/kg	374	51.0	1	06/02/14 16:30	06/05/14 17:40	7005-72-3	
Chrysene	374 U	ug/kg	374	80.5	1	06/02/14 16:30	06/05/14 17:40	218-01-9	
Dibenz(a,h)anthracene	374 U	ug/kg	374	126	1	06/02/14 16:30	06/05/14 17:40	53-70-3	
1,2-Dichlorobenzene	374 U	ug/kg	374	55.6	1	06/02/14 16:30	06/05/14 17:40	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB02 @ 7' **Lab ID: 30121605010** Collected: 05/27/14 12:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	374 U	ug/kg	374	62.1	1	06/02/14 16:30	06/05/14 17:40	541-73-1	
1,4-Dichlorobenzene	374 U	ug/kg	374	52.7	1	06/02/14 16:30	06/05/14 17:40	106-46-7	
3,3'-Dichlorobenzidine	374 U	ug/kg	374	40.8	1	06/02/14 16:30	06/05/14 17:40	91-94-1	
2,4-Dichlorophenol	374 U	ug/kg	374	64.2	1	06/02/14 16:30	06/05/14 17:40	120-83-2	
Diethylphthalate	374 U	ug/kg	374	41.2	1	06/02/14 16:30	06/05/14 17:40	84-66-2	
2,4-Dimethylphenol	374 U	ug/kg	374	66.0	1	06/02/14 16:30	06/05/14 17:40	105-67-9	
Dimethylphthalate	374 U	ug/kg	374	53.1	1	06/02/14 16:30	06/05/14 17:40	131-11-3	
Di-n-butylphthalate	374 U	ug/kg	374	62.0	1	06/02/14 16:30	06/05/14 17:40	84-74-2	
4,6-Dinitro-2-methylphenol	935 U	ug/kg	935	106	1	06/02/14 16:30	06/05/14 17:40	534-52-1	
2,4-Dinitrophenol	935 U	ug/kg	935	339	1	06/02/14 16:30	06/05/14 17:40	51-28-5	
2,4-Dinitrotoluene	374 U	ug/kg	374	78.3	1	06/02/14 16:30	06/05/14 17:40	121-14-2	
2,6-Dinitrotoluene	374 U	ug/kg	374	49.1	1	06/02/14 16:30	06/05/14 17:40	606-20-2	
Di-n-octylphthalate	374 U	ug/kg	374	68.9	1	06/02/14 16:30	06/05/14 17:40	117-84-0	
bis(2-Ethylhexyl)phthalate	292J	ug/kg	374	128	1	06/02/14 16:30	06/05/14 17:40	117-81-7	
Fluoranthene	374 U	ug/kg	374	57.2	1	06/02/14 16:30	06/05/14 17:40	206-44-0	
Fluorene	374 U	ug/kg	374	52.7	1	06/02/14 16:30	06/05/14 17:40	86-73-7	
Hexachloro-1,3-butadiene	374 U	ug/kg	374	66.3	1	06/02/14 16:30	06/05/14 17:40	87-68-3	
Hexachlorobenzene	374 U	ug/kg	374	48.3	1	06/02/14 16:30	06/05/14 17:40	118-74-1	
Hexachlorocyclopentadiene	374 U	ug/kg	374	120	1	06/02/14 16:30	06/05/14 17:40	77-47-4	
Hexachloroethane	374 U	ug/kg	374	57.5	1	06/02/14 16:30	06/05/14 17:40	67-72-1	
Indeno(1,2,3-cd)pyrene	374 U	ug/kg	374	91.3	1	06/02/14 16:30	06/05/14 17:40	193-39-5	
Isophorone	374 U	ug/kg	374	40.9	1	06/02/14 16:30	06/05/14 17:40	78-59-1	
2-Methylphenol(o-Cresol)	374 U	ug/kg	374	66.1	1	06/02/14 16:30	06/05/14 17:40	95-48-7	
3&4-Methylphenol(m&p Cresol)	748 U	ug/kg	748	75.3	1	06/02/14 16:30	06/05/14 17:40		
Naphthalene	374 U	ug/kg	374	49.9	1	06/02/14 16:30	06/05/14 17:40	91-20-3	
Nitrobenzene	374 U	ug/kg	374	58.7	1	06/02/14 16:30	06/05/14 17:40	98-95-3	
2-Nitrophenol	374 U	ug/kg	374	42.0	1	06/02/14 16:30	06/05/14 17:40	88-75-5	
4-Nitrophenol	374 U	ug/kg	374	155	1	06/02/14 16:30	06/05/14 17:40	100-02-7	
N-Nitrosodimethylamine	374 U	ug/kg	374	48.1	1	06/02/14 16:30	06/05/14 17:40	62-75-9	
N-Nitroso-di-n-propylamine	374 U	ug/kg	374	44.2	1	06/02/14 16:30	06/05/14 17:40	621-64-7	
N-Nitrosodiphenylamine	374 U	ug/kg	374	37.8	1	06/02/14 16:30	06/05/14 17:40	86-30-6	
Pentachlorophenol	935 U	ug/kg	935	93.5	1	06/02/14 16:30	06/05/14 17:40	87-86-5	
Phenanthrene	374 U	ug/kg	374	69.1	1	06/02/14 16:30	06/05/14 17:40	85-01-8	
Phenol	374 U	ug/kg	374	90.8	1	06/02/14 16:30	06/05/14 17:40	108-95-2	
Pyrene	374 U	ug/kg	374	56.9	1	06/02/14 16:30	06/05/14 17:40	129-00-0	
1,2,4-Trichlorobenzene	374 U	ug/kg	374	57.3	1	06/02/14 16:30	06/05/14 17:40	120-82-1	
2,4,6-Trichlorophenol	374 U	ug/kg	374	68.4	1	06/02/14 16:30	06/05/14 17:40	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	87 %		34-107		1	06/02/14 16:30	06/05/14 17:40	4165-60-0	
2-Fluorobiphenyl (S)	91 %		38-107		1	06/02/14 16:30	06/05/14 17:40	321-60-8	
Terphenyl-d14 (S)	86 %		34-129		1	06/02/14 16:30	06/05/14 17:40	1718-51-0	
Phenol-d6 (S)	68 %		20-102		1	06/02/14 16:30	06/05/14 17:40	13127-88-3	
2-Fluorophenol (S)	60 %		29-88		1	06/02/14 16:30	06/05/14 17:40	367-12-4	
2,4,6-Tribromophenol (S)	77 %		13-114		1	06/02/14 16:30	06/05/14 17:40	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: L SB02 @ 7' **Lab ID: 30121605010** Collected: 05/27/14 12:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	115 U	ug/kg	115	35.2	1		06/03/14 14:17	123-91-1	
Surrogates									
Toluene-d8 (S)	89 %		81-117		1		06/04/14 15:19	2037-26-5	
4-Bromofluorobenzene (S)	115 %		74-121		1		06/04/14 15:19	460-00-4	
1,2-Dichloroethane-d4 (S)	112 %		80-120		1		06/04/14 15:19	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	11.2 %		0.10	0.10	1		06/03/14 18:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB01 @ 1.5' **Lab ID: 30121605011** Collected: 05/27/14 11:05 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	74.5	mg/kg	70.9	11.5	10	06/04/14 09:00	06/06/14 14:55		1c
Surrogates									
o-Terphenyl (S)	47	%	20-129		10	06/04/14 09:00	06/06/14 14:55	84-15-1	S4
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.41	U mg/kg	0.41	0.26	1	06/02/14 11:44	06/03/14 12:24	7440-36-0	
Arsenic	5.5	mg/kg	0.35	0.25	1	06/02/14 11:44	06/03/14 12:24	7440-38-2	
Barium	154	mg/kg	1.4	0.038	1	06/02/14 11:44	06/03/14 12:24	7440-39-3	
Beryllium	0.80	mg/kg	0.14	0.016	1	06/02/14 11:44	06/03/14 12:24	7440-41-7	
Cadmium	0.86	mg/kg	0.21	0.027	1	06/02/14 11:44	06/03/14 12:24	7440-43-9	
Chromium	119	mg/kg	0.35	0.048	1	06/02/14 11:44	06/03/14 12:24	7440-47-3	
Copper	41.9	mg/kg	0.69	0.13	1	06/02/14 11:44	06/03/14 12:24	7440-50-8	
Lead	299	mg/kg	0.35	0.19	1	06/02/14 11:44	06/03/14 12:24	7439-92-1	
Nickel	19.9	mg/kg	1.4	0.094	1	06/02/14 11:44	06/03/14 12:24	7440-02-0	
Selenium	0.55	U mg/kg	0.55	0.40	1	06/02/14 11:44	06/03/14 12:24	7782-49-2	
Silver	0.41	U mg/kg	0.41	0.037	1	06/02/14 11:44	06/03/14 12:24	7440-22-4	
Thallium	1.4	U mg/kg	1.4	0.23	1	06/02/14 11:44	06/03/14 12:24	7440-28-0	
Vanadium	63.3	mg/kg	0.69	0.039	1	06/02/14 11:44	06/03/14 12:24	7440-62-2	
Zinc	159	mg/kg	0.69	0.31	1	06/02/14 11:44	06/03/14 12:24	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.017	J mg/kg	0.10	0.0022	1	06/02/14 11:56	06/03/14 14:59	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	6940	U ug/kg	6940	808	20	06/02/14 16:30	06/05/14 18:00	83-32-9	
Acenaphthylene	1260	J ug/kg	6940	798	20	06/02/14 16:30	06/05/14 18:00	208-96-8	
Anthracene	6940	U ug/kg	6940	1090	20	06/02/14 16:30	06/05/14 18:00	120-12-7	
Azobenzene	6940	U ug/kg	6940	727	20	06/02/14 16:30	06/05/14 18:00	103-33-3	N2
Benzidine	34400	U ug/kg	34400	34400	10	06/02/14 16:30	06/27/14 18:42	92-87-5	
Benzo(a)anthracene	4320	J ug/kg	6940	802	20	06/02/14 16:30	06/05/14 18:00	56-55-3	
Benzo(a)pyrene	4990	J ug/kg	6940	2330	20	06/02/14 16:30	06/05/14 18:00	50-32-8	
Benzo(b)fluoranthene	6720	J ug/kg	6940	1370	20	06/02/14 16:30	06/05/14 18:00	205-99-2	
Benzo(g,h,i)perylene	3270	J ug/kg	6940	1990	20	06/02/14 16:30	06/05/14 18:00	191-24-2	
Benzo(k)fluoranthene	3090	J ug/kg	6940	2480	20	06/02/14 16:30	06/05/14 18:00	207-08-9	
4-Bromophenylphenyl ether	6940	U ug/kg	6940	1020	20	06/02/14 16:30	06/05/14 18:00	101-55-3	
Butylbenzylphthalate	6940	U ug/kg	6940	796	20	06/02/14 16:30	06/05/14 18:00	85-68-7	
bis(2-Chloroethoxy)methane	6940	U ug/kg	6940	1140	20	06/02/14 16:30	06/05/14 18:00	111-91-1	
bis(2-Chloroethyl) ether	6940	U ug/kg	6940	3270	20	06/02/14 16:30	06/05/14 18:00	111-44-4	
bis(2-Chloroisopropyl) ether	6940	U ug/kg	6940	921	20	06/02/14 16:30	06/05/14 18:00	108-60-1	
2-Chloronaphthalene	6940	U ug/kg	6940	729	20	06/02/14 16:30	06/05/14 18:00	91-58-7	
2-Chlorophenol	6940	U ug/kg	6940	885	20	06/02/14 16:30	06/05/14 18:00	95-57-8	
4-Chlorophenylphenyl ether	6940	U ug/kg	6940	946	20	06/02/14 16:30	06/05/14 18:00	7005-72-3	
Chrysene	5050	J ug/kg	6940	1490	20	06/02/14 16:30	06/05/14 18:00	218-01-9	
Dibenz(a,h)anthracene	6940	U ug/kg	6940	2330	20	06/02/14 16:30	06/05/14 18:00	53-70-3	
1,2-Dichlorobenzene	6940	U ug/kg	6940	1030	20	06/02/14 16:30	06/05/14 18:00	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB01 @ 1.5' **Lab ID: 30121605011** Collected: 05/27/14 11:05 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	6940 U	ug/kg	6940	1150	20	06/02/14 16:30	06/05/14 18:00	541-73-1	
1,4-Dichlorobenzene	6940 U	ug/kg	6940	977	20	06/02/14 16:30	06/05/14 18:00	106-46-7	
3,3'-Dichlorobenzidine	6940 U	ug/kg	6940	756	20	06/02/14 16:30	06/05/14 18:00	91-94-1	
2,4-Dichlorophenol	6940 U	ug/kg	6940	1190	20	06/02/14 16:30	06/05/14 18:00	120-83-2	
Diethylphthalate	6940 U	ug/kg	6940	764	20	06/02/14 16:30	06/05/14 18:00	84-66-2	
2,4-Dimethylphenol	6940 U	ug/kg	6940	1220	20	06/02/14 16:30	06/05/14 18:00	105-67-9	
Dimethylphthalate	6940 U	ug/kg	6940	985	20	06/02/14 16:30	06/05/14 18:00	131-11-3	
Di-n-butylphthalate	6940 U	ug/kg	6940	1150	20	06/02/14 16:30	06/05/14 18:00	84-74-2	
4,6-Dinitro-2-methylphenol	17300 U	ug/kg	17300	1970	20	06/02/14 16:30	06/05/14 18:00	534-52-1	
2,4-Dinitrophenol	17300 U	ug/kg	17300	6290	20	06/02/14 16:30	06/05/14 18:00	51-28-5	
2,4-Dinitrotoluene	6940 U	ug/kg	6940	1450	20	06/02/14 16:30	06/05/14 18:00	121-14-2	
2,6-Dinitrotoluene	6940 U	ug/kg	6940	910	20	06/02/14 16:30	06/05/14 18:00	606-20-2	
Di-n-octylphthalate	6940 U	ug/kg	6940	1280	20	06/02/14 16:30	06/05/14 18:00	117-84-0	
bis(2-Ethylhexyl)phthalate	6940 U	ug/kg	6940	2370	20	06/02/14 16:30	06/05/14 18:00	117-81-7	
Fluoranthene	6740J	ug/kg	6940	1060	20	06/02/14 16:30	06/05/14 18:00	206-44-0	
Fluorene	6940 U	ug/kg	6940	977	20	06/02/14 16:30	06/05/14 18:00	86-73-7	
Hexachloro-1,3-butadiene	6940 U	ug/kg	6940	1230	20	06/02/14 16:30	06/05/14 18:00	87-68-3	
Hexachlorobenzene	6940 U	ug/kg	6940	896	20	06/02/14 16:30	06/05/14 18:00	118-74-1	
Hexachlorocyclopentadiene	6940 U	ug/kg	6940	2230	20	06/02/14 16:30	06/05/14 18:00	77-47-4	
Hexachloroethane	6940 U	ug/kg	6940	1070	20	06/02/14 16:30	06/05/14 18:00	67-72-1	
Indeno(1,2,3-cd)pyrene	3260J	ug/kg	6940	1690	20	06/02/14 16:30	06/05/14 18:00	193-39-5	
Isophorone	6940 U	ug/kg	6940	758	20	06/02/14 16:30	06/05/14 18:00	78-59-1	
2-Methylphenol(o-Cresol)	6940 U	ug/kg	6940	1230	20	06/02/14 16:30	06/05/14 18:00	95-48-7	
3&4-Methylphenol(m&p Cresol)	13900 U	ug/kg	13900	1400	20	06/02/14 16:30	06/05/14 18:00		
Naphthalene	6940 U	ug/kg	6940	925	20	06/02/14 16:30	06/05/14 18:00	91-20-3	
Nitrobenzene	6940 U	ug/kg	6940	1090	20	06/02/14 16:30	06/05/14 18:00	98-95-3	
2-Nitrophenol	6940 U	ug/kg	6940	779	20	06/02/14 16:30	06/05/14 18:00	88-75-5	
4-Nitrophenol	6940 U	ug/kg	6940	2870	20	06/02/14 16:30	06/05/14 18:00	100-02-7	
N-Nitrosodimethylamine	6940 U	ug/kg	6940	891	20	06/02/14 16:30	06/05/14 18:00	62-75-9	
N-Nitroso-di-n-propylamine	6940 U	ug/kg	6940	821	20	06/02/14 16:30	06/05/14 18:00	621-64-7	
N-Nitrosodiphenylamine	6940 U	ug/kg	6940	702	20	06/02/14 16:30	06/05/14 18:00	86-30-6	
Pentachlorophenol	17300 U	ug/kg	17300	1730	20	06/02/14 16:30	06/05/14 18:00	87-86-5	
Phenanthrene	2070J	ug/kg	6940	1280	20	06/02/14 16:30	06/05/14 18:00	85-01-8	
Phenol	6940 U	ug/kg	6940	1690	20	06/02/14 16:30	06/05/14 18:00	108-95-2	
Pyrene	5930J	ug/kg	6940	1060	20	06/02/14 16:30	06/05/14 18:00	129-00-0	
1,2,4-Trichlorobenzene	6940 U	ug/kg	6940	1060	20	06/02/14 16:30	06/05/14 18:00	120-82-1	
2,4,6-Trichlorophenol	6940 U	ug/kg	6940	1270	20	06/02/14 16:30	06/05/14 18:00	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	76 %		34-107		20	06/02/14 16:30	06/05/14 18:00	4165-60-0	
2-Fluorobiphenyl (S)	79 %		38-107		20	06/02/14 16:30	06/05/14 18:00	321-60-8	
Terphenyl-d14 (S)	86 %		34-129		20	06/02/14 16:30	06/05/14 18:00	1718-51-0	
Phenol-d6 (S)	64 %		20-102		20	06/02/14 16:30	06/05/14 18:00	13127-88-3	
2-Fluorophenol (S)	65 %		29-88		20	06/02/14 16:30	06/05/14 18:00	367-12-4	
2,4,6-Tribromophenol (S)	35 %		13-114		20	06/02/14 16:30	06/05/14 18:00	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB01 @ 1.5' **Lab ID: 30121605011** Collected: 05/27/14 11:05 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	84.1 U	ug/kg	84.1	25.7	1		06/03/14 14:44	123-91-1	
Surrogates									
Toluene-d8 (S)	98 %		81-117		1		06/04/14 15:47	2037-26-5	
4-Bromofluorobenzene (S)	107 %		74-121		1		06/04/14 15:47	460-00-4	
1,2-Dichloroethane-d4 (S)	115 %		80-120		1		06/04/14 15:47	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	6.1 %		0.10	0.10	1		06/03/14 18:14		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: M SB01 @ 9.5' **Lab ID: 30121605012** Collected: 05/27/14 11:10 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	7.9	mg/kg	7.8	1.3	1	06/04/14 09:00	06/06/14 15:14		1c
Surrogates									
o-Terphenyl (S)	70	%	20-129		1	06/04/14 09:00	06/06/14 15:14	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.48	U mg/kg	0.48	0.30	1	06/02/14 11:44	06/03/14 12:26	7440-36-0	
Arsenic	6.9	mg/kg	0.40	0.29	1	06/02/14 11:44	06/03/14 12:26	7440-38-2	
Barium	92.4	mg/kg	1.6	0.045	1	06/02/14 11:44	06/03/14 12:26	7440-39-3	
Beryllium	1.2	mg/kg	0.16	0.019	1	06/02/14 11:44	06/03/14 12:26	7440-41-7	
Cadmium	0.24	U mg/kg	0.24	0.032	1	06/02/14 11:44	06/03/14 12:26	7440-43-9	
Chromium	30.7	mg/kg	0.40	0.055	1	06/02/14 11:44	06/03/14 12:26	7440-47-3	
Copper	26.6	mg/kg	0.81	0.15	1	06/02/14 11:44	06/03/14 12:26	7440-50-8	
Lead	21.6	mg/kg	0.40	0.22	1	06/02/14 11:44	06/03/14 12:26	7439-92-1	
Nickel	16.6	mg/kg	1.6	0.11	1	06/02/14 11:44	06/03/14 12:26	7440-02-0	
Selenium	0.65	U mg/kg	0.65	0.47	1	06/02/14 11:44	06/03/14 12:26	7782-49-2	
Silver	0.48	U mg/kg	0.48	0.043	1	06/02/14 11:44	06/03/14 12:26	7440-22-4	
Thallium	1.6	U mg/kg	1.6	0.26	1	06/02/14 11:44	06/03/14 12:26	7440-28-0	
Vanadium	42.1	mg/kg	0.81	0.046	1	06/02/14 11:44	06/03/14 12:26	7440-62-2	
Zinc	45.5	mg/kg	0.81	0.36	1	06/02/14 11:44	06/03/14 12:26	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.11	U mg/kg	0.11	0.0023	1	06/02/14 11:56	06/03/14 15:01	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	386	U ug/kg	386	44.9	1	06/02/14 16:30	06/05/14 18:20	83-32-9	
Acenaphthylene	386	U ug/kg	386	44.3	1	06/02/14 16:30	06/05/14 18:20	208-96-8	
Anthracene	386	U ug/kg	386	60.3	1	06/02/14 16:30	06/05/14 18:20	120-12-7	
Azobenzene	386	U ug/kg	386	40.4	1	06/02/14 16:30	06/05/14 18:20	103-33-3	N2
Benzidine	3820	U ug/kg	3820	3820	1	06/02/14 16:30	06/27/14 19:01	92-87-5	
Benzo(a)anthracene	386	U ug/kg	386	44.6	1	06/02/14 16:30	06/05/14 18:20	56-55-3	
Benzo(a)pyrene	386	U ug/kg	386	130	1	06/02/14 16:30	06/05/14 18:20	50-32-8	
Benzo(b)fluoranthene	127	J ug/kg	386	76.1	1	06/02/14 16:30	06/05/14 18:20	205-99-2	
Benzo(g,h,i)perylene	386	U ug/kg	386	111	1	06/02/14 16:30	06/05/14 18:20	191-24-2	
Benzo(k)fluoranthene	386	U ug/kg	386	138	1	06/02/14 16:30	06/05/14 18:20	207-08-9	
4-Bromophenylphenyl ether	386	U ug/kg	386	57.0	1	06/02/14 16:30	06/05/14 18:20	101-55-3	
Butylbenzylphthalate	386	U ug/kg	386	44.2	1	06/02/14 16:30	06/05/14 18:20	85-68-7	
bis(2-Chloroethoxy)methane	386	U ug/kg	386	63.1	1	06/02/14 16:30	06/05/14 18:20	111-91-1	
bis(2-Chloroethyl) ether	386	U ug/kg	386	182	1	06/02/14 16:30	06/05/14 18:20	111-44-4	
bis(2-Chloroisopropyl) ether	386	U ug/kg	386	51.2	1	06/02/14 16:30	06/05/14 18:20	108-60-1	
2-Chloronaphthalene	386	U ug/kg	386	40.5	1	06/02/14 16:30	06/05/14 18:20	91-58-7	
2-Chlorophenol	386	U ug/kg	386	49.2	1	06/02/14 16:30	06/05/14 18:20	95-57-8	
4-Chlorophenylphenyl ether	386	U ug/kg	386	52.6	1	06/02/14 16:30	06/05/14 18:20	7005-72-3	
Chrysene	386	U ug/kg	386	83.0	1	06/02/14 16:30	06/05/14 18:20	218-01-9	
Dibenz(a,h)anthracene	386	U ug/kg	386	130	1	06/02/14 16:30	06/05/14 18:20	53-70-3	
1,2-Dichlorobenzene	386	U ug/kg	386	57.3	1	06/02/14 16:30	06/05/14 18:20	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB01 @ 9.5' **Lab ID: 30121605012** Collected: 05/27/14 11:10 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	386 U	ug/kg	386	64.0	1	06/02/14 16:30	06/05/14 18:20	541-73-1	
1,4-Dichlorobenzene	386 U	ug/kg	386	54.3	1	06/02/14 16:30	06/05/14 18:20	106-46-7	
3,3'-Dichlorobenzidine	386 U	ug/kg	386	42.0	1	06/02/14 16:30	06/05/14 18:20	91-94-1	
2,4-Dichlorophenol	386 U	ug/kg	386	66.2	1	06/02/14 16:30	06/05/14 18:20	120-83-2	
Diethylphthalate	386 U	ug/kg	386	42.5	1	06/02/14 16:30	06/05/14 18:20	84-66-2	
2,4-Dimethylphenol	386 U	ug/kg	386	68.1	1	06/02/14 16:30	06/05/14 18:20	105-67-9	
Dimethylphthalate	386 U	ug/kg	386	54.8	1	06/02/14 16:30	06/05/14 18:20	131-11-3	
Di-n-butylphthalate	386 U	ug/kg	386	63.9	1	06/02/14 16:30	06/05/14 18:20	84-74-2	
4,6-Dinitro-2-methylphenol	965 U	ug/kg	965	109	1	06/02/14 16:30	06/05/14 18:20	534-52-1	
2,4-Dinitrophenol	965 U	ug/kg	965	350	1	06/02/14 16:30	06/05/14 18:20	51-28-5	
2,4-Dinitrotoluene	386 U	ug/kg	386	80.7	1	06/02/14 16:30	06/05/14 18:20	121-14-2	
2,6-Dinitrotoluene	386 U	ug/kg	386	50.6	1	06/02/14 16:30	06/05/14 18:20	606-20-2	
Di-n-octylphthalate	386 U	ug/kg	386	71.1	1	06/02/14 16:30	06/05/14 18:20	117-84-0	
bis(2-Ethylhexyl)phthalate	144J	ug/kg	386	132	1	06/02/14 16:30	06/05/14 18:20	117-81-7	
Fluoranthene	386 U	ug/kg	386	58.9	1	06/02/14 16:30	06/05/14 18:20	206-44-0	
Fluorene	386 U	ug/kg	386	54.3	1	06/02/14 16:30	06/05/14 18:20	86-73-7	
Hexachloro-1,3-butadiene	386 U	ug/kg	386	68.3	1	06/02/14 16:30	06/05/14 18:20	87-68-3	
Hexachlorobenzene	386 U	ug/kg	386	49.8	1	06/02/14 16:30	06/05/14 18:20	118-74-1	
Hexachlorocyclopentadiene	386 U	ug/kg	386	124	1	06/02/14 16:30	06/05/14 18:20	77-47-4	
Hexachloroethane	386 U	ug/kg	386	59.3	1	06/02/14 16:30	06/05/14 18:20	67-72-1	
Indeno(1,2,3-cd)pyrene	386 U	ug/kg	386	94.1	1	06/02/14 16:30	06/05/14 18:20	193-39-5	
Isophorone	386 U	ug/kg	386	42.1	1	06/02/14 16:30	06/05/14 18:20	78-59-1	
2-Methylphenol(o-Cresol)	386 U	ug/kg	386	68.2	1	06/02/14 16:30	06/05/14 18:20	95-48-7	
3&4-Methylphenol(m&p Cresol)	771 U	ug/kg	771	77.7	1	06/02/14 16:30	06/05/14 18:20		
Naphthalene	386 U	ug/kg	386	51.4	1	06/02/14 16:30	06/05/14 18:20	91-20-3	
Nitrobenzene	386 U	ug/kg	386	60.6	1	06/02/14 16:30	06/05/14 18:20	98-95-3	
2-Nitrophenol	386 U	ug/kg	386	43.3	1	06/02/14 16:30	06/05/14 18:20	88-75-5	
4-Nitrophenol	386 U	ug/kg	386	160	1	06/02/14 16:30	06/05/14 18:20	100-02-7	
N-Nitrosodimethylamine	386 U	ug/kg	386	49.6	1	06/02/14 16:30	06/05/14 18:20	62-75-9	
N-Nitroso-di-n-propylamine	386 U	ug/kg	386	45.6	1	06/02/14 16:30	06/05/14 18:20	621-64-7	
N-Nitrosodiphenylamine	386 U	ug/kg	386	39.0	1	06/02/14 16:30	06/05/14 18:20	86-30-6	
Pentachlorophenol	965 U	ug/kg	965	96.5	1	06/02/14 16:30	06/05/14 18:20	87-86-5	
Phenanthrene	386 U	ug/kg	386	71.2	1	06/02/14 16:30	06/05/14 18:20	85-01-8	
Phenol	386 U	ug/kg	386	93.7	1	06/02/14 16:30	06/05/14 18:20	108-95-2	
Pyrene	386 U	ug/kg	386	58.7	1	06/02/14 16:30	06/05/14 18:20	129-00-0	
1,2,4-Trichlorobenzene	386 U	ug/kg	386	59.1	1	06/02/14 16:30	06/05/14 18:20	120-82-1	
2,4,6-Trichlorophenol	386 U	ug/kg	386	70.5	1	06/02/14 16:30	06/05/14 18:20	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	89 %		34-107		1	06/02/14 16:30	06/05/14 18:20	4165-60-0	
2-Fluorobiphenyl (S)	91 %		38-107		1	06/02/14 16:30	06/05/14 18:20	321-60-8	
Terphenyl-d14 (S)	93 %		34-129		1	06/02/14 16:30	06/05/14 18:20	1718-51-0	
Phenol-d6 (S)	84 %		20-102		1	06/02/14 16:30	06/05/14 18:20	13127-88-3	
2-Fluorophenol (S)	81 %		29-88		1	06/02/14 16:30	06/05/14 18:20	367-12-4	
2,4,6-Tribromophenol (S)	90 %		13-114		1	06/02/14 16:30	06/05/14 18:20	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB01 @ 9.5' **Lab ID: 30121605012** Collected: 05/27/14 11:10 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	97.4 U	ug/kg	97.4	29.8	1		06/03/14 15:13	123-91-1	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/04/14 16:13	2037-26-5	
4-Bromofluorobenzene (S)	107 %		74-121		1		06/04/14 16:13	460-00-4	
1,2-Dichloroethane-d4 (S)	105 %		80-120		1		06/04/14 16:13	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	15.1 %		0.10	0.10	1		06/03/14 18:14		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 1.5' **Lab ID: 30121605013** Collected: 05/27/14 11:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	12.1J	mg/kg	15.3	2.5	2	06/04/14 09:00	06/06/14 15:32		
Surrogates									
o-Terphenyl (S)	71 %		20-129		2	06/04/14 09:00	06/06/14 15:32	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.49 U	mg/kg	0.49	0.30	1	06/02/14 11:44	06/03/14 12:29	7440-36-0	
Arsenic	4.7	mg/kg	0.41	0.29	1	06/02/14 11:44	06/03/14 12:29	7440-38-2	
Barium	69.4	mg/kg	1.6	0.046	1	06/02/14 11:44	06/03/14 12:29	7440-39-3	
Beryllium	0.90	mg/kg	0.16	0.019	1	06/02/14 11:44	06/03/14 12:29	7440-41-7	
Cadmium	0.099J	mg/kg	0.25	0.032	1	06/02/14 11:44	06/03/14 12:29	7440-43-9	
Chromium	23.6	mg/kg	0.41	0.056	1	06/02/14 11:44	06/03/14 12:29	7440-47-3	
Copper	22.3	mg/kg	0.82	0.15	1	06/02/14 11:44	06/03/14 12:29	7440-50-8	
Lead	14.4	mg/kg	0.41	0.22	1	06/02/14 11:44	06/03/14 12:29	7439-92-1	
Nickel	12.9	mg/kg	1.6	0.11	1	06/02/14 11:44	06/03/14 12:29	7440-02-0	
Selenium	0.66 U	mg/kg	0.66	0.47	1	06/02/14 11:44	06/03/14 12:29	7782-49-2	
Silver	0.49 U	mg/kg	0.49	0.044	1	06/02/14 11:44	06/03/14 12:29	7440-22-4	
Thallium	1.6 U	mg/kg	1.6	0.27	1	06/02/14 11:44	06/03/14 12:29	7440-28-0	
Vanadium	35.8	mg/kg	0.82	0.047	1	06/02/14 11:44	06/03/14 12:29	7440-62-2	
Zinc	57.4	mg/kg	0.82	0.37	1	06/02/14 11:44	06/03/14 12:29	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.018J	mg/kg	0.11	0.0024	1	06/02/14 11:56	06/03/14 15:06	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	3920 U	ug/kg	3920	457	10	06/02/14 16:30	06/05/14 18:40	83-32-9	
Acenaphthylene	3920 U	ug/kg	3920	451	10	06/02/14 16:30	06/05/14 18:40	208-96-8	
Anthracene	3920 U	ug/kg	3920	614	10	06/02/14 16:30	06/05/14 18:40	120-12-7	
Azobenzene	3920 U	ug/kg	3920	411	10	06/02/14 16:30	06/05/14 18:40	103-33-3	N2
Benzidine	38900 U	ug/kg	38900	38900	10	06/02/14 16:30	06/27/14 19:21	92-87-5	
Benzo(a)anthracene	3920 U	ug/kg	3920	454	10	06/02/14 16:30	06/05/14 18:40	56-55-3	
Benzo(a)pyrene	3920 U	ug/kg	3920	1320	10	06/02/14 16:30	06/05/14 18:40	50-32-8	
Benzo(b)fluoranthene	3920 U	ug/kg	3920	774	10	06/02/14 16:30	06/05/14 18:40	205-99-2	
Benzo(g,h,i)perylene	3920 U	ug/kg	3920	1130	10	06/02/14 16:30	06/05/14 18:40	191-24-2	
Benzo(k)fluoranthene	3920 U	ug/kg	3920	1400	10	06/02/14 16:30	06/05/14 18:40	207-08-9	
4-Bromophenylphenyl ether	3920 U	ug/kg	3920	580	10	06/02/14 16:30	06/05/14 18:40	101-55-3	
Butylbenzylphthalate	3920 U	ug/kg	3920	450	10	06/02/14 16:30	06/05/14 18:40	85-68-7	
bis(2-Chloroethoxy)methane	3920 U	ug/kg	3920	642	10	06/02/14 16:30	06/05/14 18:40	111-91-1	
bis(2-Chloroethyl) ether	3920 U	ug/kg	3920	1850	10	06/02/14 16:30	06/05/14 18:40	111-44-4	
bis(2-Chloroisopropyl) ether	3920 U	ug/kg	3920	521	10	06/02/14 16:30	06/05/14 18:40	108-60-1	
2-Chloronaphthalene	3920 U	ug/kg	3920	413	10	06/02/14 16:30	06/05/14 18:40	91-58-7	
2-Chlorophenol	3920 U	ug/kg	3920	501	10	06/02/14 16:30	06/05/14 18:40	95-57-8	
4-Chlorophenylphenyl ether	3920 U	ug/kg	3920	535	10	06/02/14 16:30	06/05/14 18:40	7005-72-3	
Chrysene	3920 U	ug/kg	3920	845	10	06/02/14 16:30	06/05/14 18:40	218-01-9	
Dibenz(a,h)anthracene	3920 U	ug/kg	3920	1320	10	06/02/14 16:30	06/05/14 18:40	53-70-3	
1,2-Dichlorobenzene	3920 U	ug/kg	3920	583	10	06/02/14 16:30	06/05/14 18:40	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 1.5' **Lab ID: 30121605013** Collected: 05/27/14 11:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	3920 U	ug/kg	3920	652	10	06/02/14 16:30	06/05/14 18:40	541-73-1	
1,4-Dichlorobenzene	3920 U	ug/kg	3920	553	10	06/02/14 16:30	06/05/14 18:40	106-46-7	
3,3'-Dichlorobenzidine	3920 U	ug/kg	3920	428	10	06/02/14 16:30	06/05/14 18:40	91-94-1	
2,4-Dichlorophenol	3920 U	ug/kg	3920	674	10	06/02/14 16:30	06/05/14 18:40	120-83-2	
Diethylphthalate	3920 U	ug/kg	3920	433	10	06/02/14 16:30	06/05/14 18:40	84-66-2	
2,4-Dimethylphenol	3920 U	ug/kg	3920	693	10	06/02/14 16:30	06/05/14 18:40	105-67-9	
Dimethylphthalate	3920 U	ug/kg	3920	557	10	06/02/14 16:30	06/05/14 18:40	131-11-3	
Di-n-butylphthalate	3920 U	ug/kg	3920	651	10	06/02/14 16:30	06/05/14 18:40	84-74-2	
4,6-Dinitro-2-methylphenol	9820 U	ug/kg	9820	1110	10	06/02/14 16:30	06/05/14 18:40	534-52-1	
2,4-Dinitrophenol	9820 U	ug/kg	9820	3560	10	06/02/14 16:30	06/05/14 18:40	51-28-5	
2,4-Dinitrotoluene	3920 U	ug/kg	3920	821	10	06/02/14 16:30	06/05/14 18:40	121-14-2	
2,6-Dinitrotoluene	3920 U	ug/kg	3920	515	10	06/02/14 16:30	06/05/14 18:40	606-20-2	
Di-n-octylphthalate	3920 U	ug/kg	3920	724	10	06/02/14 16:30	06/05/14 18:40	117-84-0	
bis(2-Ethylhexyl)phthalate	3920 U	ug/kg	3920	1340	10	06/02/14 16:30	06/05/14 18:40	117-81-7	
Fluoranthene	3920 U	ug/kg	3920	600	10	06/02/14 16:30	06/05/14 18:40	206-44-0	
Fluorene	3920 U	ug/kg	3920	553	10	06/02/14 16:30	06/05/14 18:40	86-73-7	
Hexachloro-1,3-butadiene	3920 U	ug/kg	3920	695	10	06/02/14 16:30	06/05/14 18:40	87-68-3	
Hexachlorobenzene	3920 U	ug/kg	3920	507	10	06/02/14 16:30	06/05/14 18:40	118-74-1	
Hexachlorocyclopentadiene	3920 U	ug/kg	3920	1260	10	06/02/14 16:30	06/05/14 18:40	77-47-4	
Hexachloroethane	3920 U	ug/kg	3920	603	10	06/02/14 16:30	06/05/14 18:40	67-72-1	
Indeno(1,2,3-cd)pyrene	3920 U	ug/kg	3920	958	10	06/02/14 16:30	06/05/14 18:40	193-39-5	
Isophorone	3920 U	ug/kg	3920	429	10	06/02/14 16:30	06/05/14 18:40	78-59-1	
2-Methylphenol(o-Cresol)	3920 U	ug/kg	3920	694	10	06/02/14 16:30	06/05/14 18:40	95-48-7	
3&4-Methylphenol(m&p Cresol)	7850 U	ug/kg	7850	791	10	06/02/14 16:30	06/05/14 18:40		
Naphthalene	3920 U	ug/kg	3920	523	10	06/02/14 16:30	06/05/14 18:40	91-20-3	
Nitrobenzene	3920 U	ug/kg	3920	616	10	06/02/14 16:30	06/05/14 18:40	98-95-3	
2-Nitrophenol	3920 U	ug/kg	3920	441	10	06/02/14 16:30	06/05/14 18:40	88-75-5	
4-Nitrophenol	3920 U	ug/kg	3920	1630	10	06/02/14 16:30	06/05/14 18:40	100-02-7	
N-Nitrosodimethylamine	3920 U	ug/kg	3920	504	10	06/02/14 16:30	06/05/14 18:40	62-75-9	
N-Nitroso-di-n-propylamine	3920 U	ug/kg	3920	464	10	06/02/14 16:30	06/05/14 18:40	621-64-7	
N-Nitrosodiphenylamine	3920 U	ug/kg	3920	397	10	06/02/14 16:30	06/05/14 18:40	86-30-6	
Pentachlorophenol	9820 U	ug/kg	9820	982	10	06/02/14 16:30	06/05/14 18:40	87-86-5	
Phenanthrene	3920 U	ug/kg	3920	725	10	06/02/14 16:30	06/05/14 18:40	85-01-8	
Phenol	3920 U	ug/kg	3920	953	10	06/02/14 16:30	06/05/14 18:40	108-95-2	
Pyrene	3920 U	ug/kg	3920	598	10	06/02/14 16:30	06/05/14 18:40	129-00-0	
1,2,4-Trichlorobenzene	3920 U	ug/kg	3920	601	10	06/02/14 16:30	06/05/14 18:40	120-82-1	
2,4,6-Trichlorophenol	3920 U	ug/kg	3920	718	10	06/02/14 16:30	06/05/14 18:40	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	77 %		34-107		10	06/02/14 16:30	06/05/14 18:40	4165-60-0	
2-Fluorobiphenyl (S)	84 %		38-107		10	06/02/14 16:30	06/05/14 18:40	321-60-8	
Terphenyl-d14 (S)	83 %		34-129		10	06/02/14 16:30	06/05/14 18:40	1718-51-0	
Phenol-d6 (S)	67 %		20-102		10	06/02/14 16:30	06/05/14 18:40	13127-88-3	
2-Fluorophenol (S)	63 %		29-88		10	06/02/14 16:30	06/05/14 18:40	367-12-4	
2,4,6-Tribromophenol (S)	77 %		13-114		10	06/02/14 16:30	06/05/14 18:40	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 1.5' **Lab ID: 30121605013** Collected: 05/27/14 11:20 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	94.1 U	ug/kg	94.1	28.8	1		06/03/14 15:41	123-91-1	
Surrogates									
Toluene-d8 (S)	94 %		81-117		1		06/04/14 16:41	2037-26-5	
4-Bromofluorobenzene (S)	105 %		74-121		1		06/04/14 16:41	460-00-4	
1,2-Dichloroethane-d4 (S)	95 %		80-120		1		06/04/14 16:41	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	15.4 %		0.10	0.10	1		06/03/14 18:15		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 9.5' **Lab ID: 30121605014** Collected: 05/27/14 11:25 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	2.8J	mg/kg	8.5	1.4	1	06/04/14 09:00	06/06/14 15:51		
Surrogates									
o-Terphenyl (S)	58 %		20-129		1	06/04/14 09:00	06/06/14 15:51	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.53 U	mg/kg	0.53	0.33	1	06/02/14 11:44	06/03/14 12:31	7440-36-0	
Arsenic	3.4	mg/kg	0.44	0.31	1	06/02/14 11:44	06/03/14 12:31	7440-38-2	
Barium	144	mg/kg	1.8	0.049	1	06/02/14 11:44	06/03/14 12:31	7440-39-3	
Beryllium	1.7	mg/kg	0.18	0.021	1	06/02/14 11:44	06/03/14 12:31	7440-41-7	
Cadmium	0.18J	mg/kg	0.26	0.034	1	06/02/14 11:44	06/03/14 12:31	7440-43-9	
Chromium	21.7	mg/kg	0.44	0.060	1	06/02/14 11:44	06/03/14 12:31	7440-47-3	
Copper	31.1	mg/kg	0.88	0.16	1	06/02/14 11:44	06/03/14 12:31	7440-50-8	
Lead	17.9	mg/kg	0.44	0.23	1	06/02/14 11:44	06/03/14 12:31	7439-92-1	
Nickel	30.4	mg/kg	1.8	0.12	1	06/02/14 11:44	06/03/14 12:31	7440-02-0	
Selenium	0.70 U	mg/kg	0.70	0.51	1	06/02/14 11:44	06/03/14 12:31	7782-49-2	
Silver	0.53 U	mg/kg	0.53	0.047	1	06/02/14 11:44	06/03/14 12:31	7440-22-4	
Thallium	1.8 U	mg/kg	1.8	0.29	1	06/02/14 11:44	06/03/14 12:31	7440-28-0	
Vanadium	16.5	mg/kg	0.88	0.050	1	06/02/14 11:44	06/03/14 12:31	7440-62-2	
Zinc	74.2	mg/kg	0.88	0.39	1	06/02/14 11:44	06/03/14 12:31	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.0049J	mg/kg	0.13	0.0028	1	06/02/14 11:56	06/03/14 15:07	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	422 U	ug/kg	422	49.2	1	06/02/14 16:30	06/05/14 19:00	83-32-9	
Acenaphthylene	422 U	ug/kg	422	48.6	1	06/02/14 16:30	06/05/14 19:00	208-96-8	
Anthracene	422 U	ug/kg	422	66.1	1	06/02/14 16:30	06/05/14 19:00	120-12-7	
Azobenzene	422 U	ug/kg	422	44.3	1	06/02/14 16:30	06/05/14 19:00	103-33-3	N2
Benzidine	4190 U	ug/kg	4190	4190	1	06/02/14 16:30	06/27/14 19:41	92-87-5	
Benzo(a)anthracene	422 U	ug/kg	422	48.8	1	06/02/14 16:30	06/05/14 19:00	56-55-3	
Benzo(a)pyrene	422 U	ug/kg	422	142	1	06/02/14 16:30	06/05/14 19:00	50-32-8	
Benzo(b)fluoranthene	422 U	ug/kg	422	83.3	1	06/02/14 16:30	06/05/14 19:00	205-99-2	
Benzo(g,h,i)perylene	422 U	ug/kg	422	121	1	06/02/14 16:30	06/05/14 19:00	191-24-2	
Benzo(k)fluoranthene	422 U	ug/kg	422	151	1	06/02/14 16:30	06/05/14 19:00	207-08-9	
4-Bromophenylphenyl ether	422 U	ug/kg	422	62.4	1	06/02/14 16:30	06/05/14 19:00	101-55-3	
Butylbenzylphthalate	422 U	ug/kg	422	48.4	1	06/02/14 16:30	06/05/14 19:00	85-68-7	
bis(2-Chloroethoxy)methane	422 U	ug/kg	422	69.1	1	06/02/14 16:30	06/05/14 19:00	111-91-1	
bis(2-Chloroethyl) ether	422 U	ug/kg	422	199	1	06/02/14 16:30	06/05/14 19:00	111-44-4	
bis(2-Chloroisopropyl) ether	422 U	ug/kg	422	56.1	1	06/02/14 16:30	06/05/14 19:00	108-60-1	
2-Chloronaphthalene	422 U	ug/kg	422	44.4	1	06/02/14 16:30	06/05/14 19:00	91-58-7	
2-Chlorophenol	422 U	ug/kg	422	53.9	1	06/02/14 16:30	06/05/14 19:00	95-57-8	
4-Chlorophenylphenyl ether	422 U	ug/kg	422	57.6	1	06/02/14 16:30	06/05/14 19:00	7005-72-3	
Chrysene	422 U	ug/kg	422	90.9	1	06/02/14 16:30	06/05/14 19:00	218-01-9	
Dibenz(a,h)anthracene	422 U	ug/kg	422	142	1	06/02/14 16:30	06/05/14 19:00	53-70-3	
1,2-Dichlorobenzene	422 U	ug/kg	422	62.8	1	06/02/14 16:30	06/05/14 19:00	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 9.5' **Lab ID: 30121605014** Collected: 05/27/14 11:25 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	422 U	ug/kg	422	70.1	1	06/02/14 16:30	06/05/14 19:00	541-73-1	
1,4-Dichlorobenzene	422 U	ug/kg	422	59.5	1	06/02/14 16:30	06/05/14 19:00	106-46-7	
3,3'-Dichlorobenzidine	422 U	ug/kg	422	46.0	1	06/02/14 16:30	06/05/14 19:00	91-94-1	
2,4-Dichlorophenol	422 U	ug/kg	422	72.5	1	06/02/14 16:30	06/05/14 19:00	120-83-2	
Diethylphthalate	422 U	ug/kg	422	46.5	1	06/02/14 16:30	06/05/14 19:00	84-66-2	
2,4-Dimethylphenol	422 U	ug/kg	422	74.6	1	06/02/14 16:30	06/05/14 19:00	105-67-9	
Dimethylphthalate	422 U	ug/kg	422	60.0	1	06/02/14 16:30	06/05/14 19:00	131-11-3	
Di-n-butylphthalate	422 U	ug/kg	422	70.0	1	06/02/14 16:30	06/05/14 19:00	84-74-2	
4,6-Dinitro-2-methylphenol	1060 U	ug/kg	1060	120	1	06/02/14 16:30	06/05/14 19:00	534-52-1	
2,4-Dinitrophenol	1060 U	ug/kg	1060	383	1	06/02/14 16:30	06/05/14 19:00	51-28-5	
2,4-Dinitrotoluene	422 U	ug/kg	422	88.4	1	06/02/14 16:30	06/05/14 19:00	121-14-2	
2,6-Dinitrotoluene	422 U	ug/kg	422	55.4	1	06/02/14 16:30	06/05/14 19:00	606-20-2	
Di-n-octylphthalate	422 U	ug/kg	422	77.9	1	06/02/14 16:30	06/05/14 19:00	117-84-0	
bis(2-Ethylhexyl)phthalate	422 U	ug/kg	422	145	1	06/02/14 16:30	06/05/14 19:00	117-81-7	
Fluoranthene	422 U	ug/kg	422	64.6	1	06/02/14 16:30	06/05/14 19:00	206-44-0	
Fluorene	422 U	ug/kg	422	59.5	1	06/02/14 16:30	06/05/14 19:00	86-73-7	
Hexachloro-1,3-butadiene	422 U	ug/kg	422	74.8	1	06/02/14 16:30	06/05/14 19:00	87-68-3	
Hexachlorobenzene	422 U	ug/kg	422	54.5	1	06/02/14 16:30	06/05/14 19:00	118-74-1	
Hexachlorocyclopentadiene	422 U	ug/kg	422	136	1	06/02/14 16:30	06/05/14 19:00	77-47-4	
Hexachloroethane	422 U	ug/kg	422	64.9	1	06/02/14 16:30	06/05/14 19:00	67-72-1	
Indeno(1,2,3-cd)pyrene	422 U	ug/kg	422	103	1	06/02/14 16:30	06/05/14 19:00	193-39-5	
Isophorone	422 U	ug/kg	422	46.2	1	06/02/14 16:30	06/05/14 19:00	78-59-1	
2-Methylphenol(o-Cresol)	422 U	ug/kg	422	74.7	1	06/02/14 16:30	06/05/14 19:00	95-48-7	
3&4-Methylphenol(m&p Cresol)	845 U	ug/kg	845	85.1	1	06/02/14 16:30	06/05/14 19:00		
Naphthalene	422 U	ug/kg	422	56.3	1	06/02/14 16:30	06/05/14 19:00	91-20-3	
Nitrobenzene	422 U	ug/kg	422	66.3	1	06/02/14 16:30	06/05/14 19:00	98-95-3	
2-Nitrophenol	422 U	ug/kg	422	47.4	1	06/02/14 16:30	06/05/14 19:00	88-75-5	
4-Nitrophenol	422 U	ug/kg	422	175	1	06/02/14 16:30	06/05/14 19:00	100-02-7	
N-Nitrosodimethylamine	422 U	ug/kg	422	54.3	1	06/02/14 16:30	06/05/14 19:00	62-75-9	
N-Nitroso-di-n-propylamine	422 U	ug/kg	422	50.0	1	06/02/14 16:30	06/05/14 19:00	621-64-7	
N-Nitrosodiphenylamine	422 U	ug/kg	422	42.7	1	06/02/14 16:30	06/05/14 19:00	86-30-6	
Pentachlorophenol	1060 U	ug/kg	1060	106	1	06/02/14 16:30	06/05/14 19:00	87-86-5	
Phenanthrene	422 U	ug/kg	422	78.0	1	06/02/14 16:30	06/05/14 19:00	85-01-8	
Phenol	422 U	ug/kg	422	103	1	06/02/14 16:30	06/05/14 19:00	108-95-2	
Pyrene	422 U	ug/kg	422	64.3	1	06/02/14 16:30	06/05/14 19:00	129-00-0	
1,2,4-Trichlorobenzene	422 U	ug/kg	422	64.7	1	06/02/14 16:30	06/05/14 19:00	120-82-1	
2,4,6-Trichlorophenol	422 U	ug/kg	422	77.2	1	06/02/14 16:30	06/05/14 19:00	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	80 %		34-107		1	06/02/14 16:30	06/05/14 19:00	4165-60-0	
2-Fluorobiphenyl (S)	80 %		38-107		1	06/02/14 16:30	06/05/14 19:00	321-60-8	
Terphenyl-d14 (S)	87 %		34-129		1	06/02/14 16:30	06/05/14 19:00	1718-51-0	
Phenol-d6 (S)	68 %		20-102		1	06/02/14 16:30	06/05/14 19:00	13127-88-3	
2-Fluorophenol (S)	70 %		29-88		1	06/02/14 16:30	06/05/14 19:00	367-12-4	
2,4,6-Tribromophenol (S)	82 %		13-114		1	06/02/14 16:30	06/05/14 19:00	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB02 @ 9.5' **Lab ID: 30121605014** Collected: 05/27/14 11:25 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	117 U	ug/kg	117	35.8	1		06/03/14 15:27	123-91-1	
Surrogates									
Toluene-d8 (S)	98 %		81-117		1		06/04/14 17:08	2037-26-5	
4-Bromofluorobenzene (S)	104 %		74-121		1		06/04/14 17:08	460-00-4	
1,2-Dichloroethane-d4 (S)	106 %		80-120		1		06/04/14 17:08	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	22.9 %		0.10	0.10	1		06/03/14 18:16		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 1.5' **Lab ID: 30121605015** Collected: 05/27/14 11:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	9.3	mg/kg	7.8	1.3	1	06/04/14 09:00	06/06/14 16:10		1c
Surrogates									
o-Terphenyl (S)	62 %		20-129		1	06/04/14 09:00	06/06/14 16:10	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.51 U	mg/kg	0.51	0.31	1	06/02/14 11:44	06/03/14 12:33	7440-36-0	
Arsenic	5.8	mg/kg	0.42	0.30	1	06/02/14 11:44	06/03/14 12:33	7440-38-2	
Barium	103	mg/kg	1.7	0.047	1	06/02/14 11:44	06/03/14 12:33	7440-39-3	
Beryllium	1.2	mg/kg	0.17	0.020	1	06/02/14 11:44	06/03/14 12:33	7440-41-7	
Cadmium	0.11J	mg/kg	0.25	0.033	1	06/02/14 11:44	06/03/14 12:33	7440-43-9	
Chromium	20.5	mg/kg	0.42	0.058	1	06/02/14 11:44	06/03/14 12:33	7440-47-3	
Copper	17.8	mg/kg	0.85	0.16	1	06/02/14 11:44	06/03/14 12:33	7440-50-8	
Lead	21.7	mg/kg	0.42	0.23	1	06/02/14 11:44	06/03/14 12:33	7439-92-1	
Nickel	15.5	mg/kg	1.7	0.12	1	06/02/14 11:44	06/03/14 12:33	7440-02-0	
Selenium	0.68 U	mg/kg	0.68	0.49	1	06/02/14 11:44	06/03/14 12:33	7782-49-2	
Silver	0.51 U	mg/kg	0.51	0.045	1	06/02/14 11:44	06/03/14 12:33	7440-22-4	
Thallium	1.7 U	mg/kg	1.7	0.28	1	06/02/14 11:44	06/03/14 12:33	7440-28-0	
Vanadium	32.0	mg/kg	0.85	0.048	1	06/02/14 11:44	06/03/14 12:33	7440-62-2	
Zinc	49.2	mg/kg	0.85	0.38	1	06/02/14 11:44	06/03/14 12:33	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.026J	mg/kg	0.11	0.0023	1	06/02/14 11:56	06/03/14 15:09	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	379 U	ug/kg	379	44.1	1	06/02/14 16:30	06/05/14 19:59	83-32-9	
Acenaphthylene	379 U	ug/kg	379	43.6	1	06/02/14 16:30	06/05/14 19:59	208-96-8	
Anthracene	379 U	ug/kg	379	59.3	1	06/02/14 16:30	06/05/14 19:59	120-12-7	
Azobenzene	379 U	ug/kg	379	39.7	1	06/02/14 16:30	06/05/14 19:59	103-33-3	N2
Benzidine	3750 U	ug/kg	3750	3750	1	06/02/14 16:30	06/27/14 20:40	92-87-5	
Benzo(a)anthracene	379 U	ug/kg	379	43.8	1	06/02/14 16:30	06/05/14 19:59	56-55-3	
Benzo(a)pyrene	379 U	ug/kg	379	127	1	06/02/14 16:30	06/05/14 19:59	50-32-8	
Benzo(b)fluoranthene	379 U	ug/kg	379	74.8	1	06/02/14 16:30	06/05/14 19:59	205-99-2	
Benzo(g,h,i)perylene	379 U	ug/kg	379	109	1	06/02/14 16:30	06/05/14 19:59	191-24-2	
Benzo(k)fluoranthene	379 U	ug/kg	379	135	1	06/02/14 16:30	06/05/14 19:59	207-08-9	
4-Bromophenylphenyl ether	379 U	ug/kg	379	56.0	1	06/02/14 16:30	06/05/14 19:59	101-55-3	
Butylbenzylphthalate	379 U	ug/kg	379	43.5	1	06/02/14 16:30	06/05/14 19:59	85-68-7	
bis(2-Chloroethoxy)methane	379 U	ug/kg	379	62.0	1	06/02/14 16:30	06/05/14 19:59	111-91-1	
bis(2-Chloroethyl) ether	379 U	ug/kg	379	179	1	06/02/14 16:30	06/05/14 19:59	111-44-4	
bis(2-Chloroisopropyl) ether	379 U	ug/kg	379	50.3	1	06/02/14 16:30	06/05/14 19:59	108-60-1	
2-Chloronaphthalene	379 U	ug/kg	379	39.8	1	06/02/14 16:30	06/05/14 19:59	91-58-7	
2-Chlorophenol	379 U	ug/kg	379	48.4	1	06/02/14 16:30	06/05/14 19:59	95-57-8	
4-Chlorophenylphenyl ether	379 U	ug/kg	379	51.7	1	06/02/14 16:30	06/05/14 19:59	7005-72-3	
Chrysene	379 U	ug/kg	379	81.6	1	06/02/14 16:30	06/05/14 19:59	218-01-9	
Dibenz(a,h)anthracene	379 U	ug/kg	379	127	1	06/02/14 16:30	06/05/14 19:59	53-70-3	
1,2-Dichlorobenzene	379 U	ug/kg	379	56.3	1	06/02/14 16:30	06/05/14 19:59	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 1.5' **Lab ID: 30121605015** Collected: 05/27/14 11:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	379 U	ug/kg	379	62.9	1	06/02/14 16:30	06/05/14 19:59	541-73-1	
1,4-Dichlorobenzene	379 U	ug/kg	379	53.4	1	06/02/14 16:30	06/05/14 19:59	106-46-7	
3,3'-Dichlorobenzidine	379 U	ug/kg	379	41.3	1	06/02/14 16:30	06/05/14 19:59	91-94-1	
2,4-Dichlorophenol	379 U	ug/kg	379	65.1	1	06/02/14 16:30	06/05/14 19:59	120-83-2	
Diethylphthalate	379 U	ug/kg	379	41.8	1	06/02/14 16:30	06/05/14 19:59	84-66-2	
2,4-Dimethylphenol	379 U	ug/kg	379	66.9	1	06/02/14 16:30	06/05/14 19:59	105-67-9	
Dimethylphthalate	379 U	ug/kg	379	53.8	1	06/02/14 16:30	06/05/14 19:59	131-11-3	
Di-n-butylphthalate	379 U	ug/kg	379	62.8	1	06/02/14 16:30	06/05/14 19:59	84-74-2	
4,6-Dinitro-2-methylphenol	948 U	ug/kg	948	107	1	06/02/14 16:30	06/05/14 19:59	534-52-1	
2,4-Dinitrophenol	948 U	ug/kg	948	344	1	06/02/14 16:30	06/05/14 19:59	51-28-5	
2,4-Dinitrotoluene	379 U	ug/kg	379	79.3	1	06/02/14 16:30	06/05/14 19:59	121-14-2	
2,6-Dinitrotoluene	379 U	ug/kg	379	49.7	1	06/02/14 16:30	06/05/14 19:59	606-20-2	
Di-n-octylphthalate	379 U	ug/kg	379	69.9	1	06/02/14 16:30	06/05/14 19:59	117-84-0	
bis(2-Ethylhexyl)phthalate	212J	ug/kg	379	130	1	06/02/14 16:30	06/05/14 19:59	117-81-7	
Fluoranthene	379 U	ug/kg	379	57.9	1	06/02/14 16:30	06/05/14 19:59	206-44-0	
Fluorene	379 U	ug/kg	379	53.4	1	06/02/14 16:30	06/05/14 19:59	86-73-7	
Hexachloro-1,3-butadiene	379 U	ug/kg	379	67.1	1	06/02/14 16:30	06/05/14 19:59	87-68-3	
Hexachlorobenzene	379 U	ug/kg	379	48.9	1	06/02/14 16:30	06/05/14 19:59	118-74-1	
Hexachlorocyclopentadiene	379 U	ug/kg	379	122	1	06/02/14 16:30	06/05/14 19:59	77-47-4	
Hexachloroethane	379 U	ug/kg	379	58.3	1	06/02/14 16:30	06/05/14 19:59	67-72-1	
Indeno(1,2,3-cd)pyrene	379 U	ug/kg	379	92.5	1	06/02/14 16:30	06/05/14 19:59	193-39-5	
Isophorone	379 U	ug/kg	379	41.4	1	06/02/14 16:30	06/05/14 19:59	78-59-1	
2-Methylphenol(o-Cresol)	379 U	ug/kg	379	67.0	1	06/02/14 16:30	06/05/14 19:59	95-48-7	
3&4-Methylphenol(m&p Cresol)	758 U	ug/kg	758	76.3	1	06/02/14 16:30	06/05/14 19:59		
Naphthalene	379 U	ug/kg	379	50.5	1	06/02/14 16:30	06/05/14 19:59	91-20-3	
Nitrobenzene	379 U	ug/kg	379	59.5	1	06/02/14 16:30	06/05/14 19:59	98-95-3	
2-Nitrophenol	379 U	ug/kg	379	42.6	1	06/02/14 16:30	06/05/14 19:59	88-75-5	
4-Nitrophenol	379 U	ug/kg	379	157	1	06/02/14 16:30	06/05/14 19:59	100-02-7	
N-Nitrosodimethylamine	379 U	ug/kg	379	48.7	1	06/02/14 16:30	06/05/14 19:59	62-75-9	
N-Nitroso-di-n-propylamine	379 U	ug/kg	379	44.8	1	06/02/14 16:30	06/05/14 19:59	621-64-7	
N-Nitrosodiphenylamine	379 U	ug/kg	379	38.3	1	06/02/14 16:30	06/05/14 19:59	86-30-6	
Pentachlorophenol	948 U	ug/kg	948	94.8	1	06/02/14 16:30	06/05/14 19:59	87-86-5	
Phenanthrene	379 U	ug/kg	379	70.0	1	06/02/14 16:30	06/05/14 19:59	85-01-8	
Phenol	379 U	ug/kg	379	92.0	1	06/02/14 16:30	06/05/14 19:59	108-95-2	
Pyrene	379 U	ug/kg	379	57.7	1	06/02/14 16:30	06/05/14 19:59	129-00-0	
1,2,4-Trichlorobenzene	379 U	ug/kg	379	58.0	1	06/02/14 16:30	06/05/14 19:59	120-82-1	
2,4,6-Trichlorophenol	379 U	ug/kg	379	69.3	1	06/02/14 16:30	06/05/14 19:59	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	80 %		34-107		1	06/02/14 16:30	06/05/14 19:59	4165-60-0	
2-Fluorobiphenyl (S)	79 %		38-107		1	06/02/14 16:30	06/05/14 19:59	321-60-8	
Terphenyl-d14 (S)	78 %		34-129		1	06/02/14 16:30	06/05/14 19:59	1718-51-0	
Phenol-d6 (S)	60 %		20-102		1	06/02/14 16:30	06/05/14 19:59	13127-88-3	
2-Fluorophenol (S)	52 %		29-88		1	06/02/14 16:30	06/05/14 19:59	367-12-4	
2,4,6-Tribromophenol (S)	73 %		13-114		1	06/02/14 16:30	06/05/14 19:59	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 1.5' **Lab ID: 30121605015** Collected: 05/27/14 11:30 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	96.9 U	ug/kg	96.9	29.6	1		06/03/14 13:36	123-91-1	
Surrogates									
Toluene-d8 (S)	96 %		81-117		1		06/04/14 17:35	2037-26-5	
4-Bromofluorobenzene (S)	105 %		74-121		1		06/04/14 17:35	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		80-120		1		06/04/14 17:35	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	14.6 %		0.10	0.10	1		06/03/14 18:16		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 9.0' **Lab ID: 30121605016** Collected: 05/27/14 11:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	1.5J	mg/kg	7.2	1.2	1	06/04/14 09:00	06/06/14 16:29		
Surrogates									
o-Terphenyl (S)	50 %		20-129		1	06/04/14 09:00	06/06/14 16:29	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.47 U	mg/kg	0.47	0.29	1	06/02/14 11:44	06/03/14 12:36	7440-36-0	
Arsenic	2.8	mg/kg	0.39	0.28	1	06/02/14 11:44	06/03/14 12:36	7440-38-2	
Barium	129	mg/kg	1.6	0.044	1	06/02/14 11:44	06/03/14 12:36	7440-39-3	
Beryllium	1.4	mg/kg	0.16	0.018	1	06/02/14 11:44	06/03/14 12:36	7440-41-7	
Cadmium	0.16J	mg/kg	0.24	0.031	1	06/02/14 11:44	06/03/14 12:36	7440-43-9	
Chromium	24.8	mg/kg	0.39	0.054	1	06/02/14 11:44	06/03/14 12:36	7440-47-3	
Copper	26.8	mg/kg	0.79	0.14	1	06/02/14 11:44	06/03/14 12:36	7440-50-8	
Lead	19.9	mg/kg	0.39	0.21	1	06/02/14 11:44	06/03/14 12:36	7439-92-1	
Nickel	23.5	mg/kg	1.6	0.11	1	06/02/14 11:44	06/03/14 12:36	7440-02-0	
Selenium	0.63 U	mg/kg	0.63	0.45	1	06/02/14 11:44	06/03/14 12:36	7782-49-2	
Silver	0.47 U	mg/kg	0.47	0.042	1	06/02/14 11:44	06/03/14 12:36	7440-22-4	
Thallium	1.6 U	mg/kg	1.6	0.26	1	06/02/14 11:44	06/03/14 12:36	7440-28-0	
Vanadium	18.4	mg/kg	0.79	0.045	1	06/02/14 11:44	06/03/14 12:36	7440-62-2	
Zinc	65.9	mg/kg	0.79	0.35	1	06/02/14 11:44	06/03/14 12:36	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.0055J	mg/kg	0.11	0.0024	1	06/02/14 11:56	06/03/14 15:11	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	364 U	ug/kg	364	42.4	1	06/02/14 16:30	06/05/14 20:19	83-32-9	
Acenaphthylene	364 U	ug/kg	364	41.8	1	06/02/14 16:30	06/05/14 20:19	208-96-8	
Anthracene	364 U	ug/kg	364	56.9	1	06/02/14 16:30	06/05/14 20:19	120-12-7	
Azobenzene	364 U	ug/kg	364	38.1	1	06/02/14 16:30	06/05/14 20:19	103-33-3	N2
Benzidine	3600 U	ug/kg	3600	3600	1	06/02/14 16:30	06/27/14 21:00	92-87-5	
Benzo(a)anthracene	364 U	ug/kg	364	42.0	1	06/02/14 16:30	06/05/14 20:19	56-55-3	
Benzo(a)pyrene	364 U	ug/kg	364	122	1	06/02/14 16:30	06/05/14 20:19	50-32-8	
Benzo(b)fluoranthene	364 U	ug/kg	364	71.7	1	06/02/14 16:30	06/05/14 20:19	205-99-2	
Benzo(g,h,i)perylene	364 U	ug/kg	364	104	1	06/02/14 16:30	06/05/14 20:19	191-24-2	
Benzo(k)fluoranthene	364 U	ug/kg	364	130	1	06/02/14 16:30	06/05/14 20:19	207-08-9	
4-Bromophenylphenyl ether	364 U	ug/kg	364	53.7	1	06/02/14 16:30	06/05/14 20:19	101-55-3	
Butylbenzylphthalate	364 U	ug/kg	364	41.7	1	06/02/14 16:30	06/05/14 20:19	85-68-7	
bis(2-Chloroethoxy)methane	364 U	ug/kg	364	59.5	1	06/02/14 16:30	06/05/14 20:19	111-91-1	
bis(2-Chloroethyl) ether	364 U	ug/kg	364	171	1	06/02/14 16:30	06/05/14 20:19	111-44-4	
bis(2-Chloroisopropyl) ether	364 U	ug/kg	364	48.3	1	06/02/14 16:30	06/05/14 20:19	108-60-1	
2-Chloronaphthalene	364 U	ug/kg	364	38.2	1	06/02/14 16:30	06/05/14 20:19	91-58-7	
2-Chlorophenol	364 U	ug/kg	364	46.4	1	06/02/14 16:30	06/05/14 20:19	95-57-8	
4-Chlorophenylphenyl ether	364 U	ug/kg	364	49.6	1	06/02/14 16:30	06/05/14 20:19	7005-72-3	
Chrysene	364 U	ug/kg	364	78.3	1	06/02/14 16:30	06/05/14 20:19	218-01-9	
Dibenz(a,h)anthracene	364 U	ug/kg	364	122	1	06/02/14 16:30	06/05/14 20:19	53-70-3	
1,2-Dichlorobenzene	364 U	ug/kg	364	54.0	1	06/02/14 16:30	06/05/14 20:19	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 9.0' **Lab ID: 30121605016** Collected: 05/27/14 11:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	364 U	ug/kg	364	60.4	1	06/02/14 16:30	06/05/14 20:19	541-73-1	
1,4-Dichlorobenzene	364 U	ug/kg	364	51.2	1	06/02/14 16:30	06/05/14 20:19	106-46-7	
3,3'-Dichlorobenzidine	364 U	ug/kg	364	39.6	1	06/02/14 16:30	06/05/14 20:19	91-94-1	
2,4-Dichlorophenol	364 U	ug/kg	364	62.4	1	06/02/14 16:30	06/05/14 20:19	120-83-2	
Diethylphthalate	364 U	ug/kg	364	40.1	1	06/02/14 16:30	06/05/14 20:19	84-66-2	
2,4-Dimethylphenol	364 U	ug/kg	364	64.2	1	06/02/14 16:30	06/05/14 20:19	105-67-9	
Dimethylphthalate	364 U	ug/kg	364	51.6	1	06/02/14 16:30	06/05/14 20:19	131-11-3	
Di-n-butylphthalate	364 U	ug/kg	364	60.3	1	06/02/14 16:30	06/05/14 20:19	84-74-2	
4,6-Dinitro-2-methylphenol	909 U	ug/kg	909	103	1	06/02/14 16:30	06/05/14 20:19	534-52-1	
2,4-Dinitrophenol	909 U	ug/kg	909	330	1	06/02/14 16:30	06/05/14 20:19	51-28-5	
2,4-Dinitrotoluene	364 U	ug/kg	364	76.1	1	06/02/14 16:30	06/05/14 20:19	121-14-2	
2,6-Dinitrotoluene	364 U	ug/kg	364	47.7	1	06/02/14 16:30	06/05/14 20:19	606-20-2	
Di-n-octylphthalate	364 U	ug/kg	364	67.0	1	06/02/14 16:30	06/05/14 20:19	117-84-0	
bis(2-Ethylhexyl)phthalate	243J	ug/kg	364	124	1	06/02/14 16:30	06/05/14 20:19	117-81-7	
Fluoranthene	364 U	ug/kg	364	55.6	1	06/02/14 16:30	06/05/14 20:19	206-44-0	
Fluorene	364 U	ug/kg	364	51.2	1	06/02/14 16:30	06/05/14 20:19	86-73-7	
Hexachloro-1,3-butadiene	364 U	ug/kg	364	64.4	1	06/02/14 16:30	06/05/14 20:19	87-68-3	
Hexachlorobenzene	364 U	ug/kg	364	46.9	1	06/02/14 16:30	06/05/14 20:19	118-74-1	
Hexachlorocyclopentadiene	364 U	ug/kg	364	117	1	06/02/14 16:30	06/05/14 20:19	77-47-4	
Hexachloroethane	364 U	ug/kg	364	55.9	1	06/02/14 16:30	06/05/14 20:19	67-72-1	
Indeno(1,2,3-cd)pyrene	364 U	ug/kg	364	88.8	1	06/02/14 16:30	06/05/14 20:19	193-39-5	
Isophorone	364 U	ug/kg	364	39.7	1	06/02/14 16:30	06/05/14 20:19	78-59-1	
2-Methylphenol(o-Cresol)	364 U	ug/kg	364	64.3	1	06/02/14 16:30	06/05/14 20:19	95-48-7	
3&4-Methylphenol(m&p Cresol)	727 U	ug/kg	727	73.3	1	06/02/14 16:30	06/05/14 20:19		
Naphthalene	364 U	ug/kg	364	48.5	1	06/02/14 16:30	06/05/14 20:19	91-20-3	
Nitrobenzene	364 U	ug/kg	364	57.1	1	06/02/14 16:30	06/05/14 20:19	98-95-3	
2-Nitrophenol	364 U	ug/kg	364	40.8	1	06/02/14 16:30	06/05/14 20:19	88-75-5	
4-Nitrophenol	364 U	ug/kg	364	151	1	06/02/14 16:30	06/05/14 20:19	100-02-7	
N-Nitrosodimethylamine	364 U	ug/kg	364	46.7	1	06/02/14 16:30	06/05/14 20:19	62-75-9	
N-Nitroso-di-n-propylamine	364 U	ug/kg	364	43.0	1	06/02/14 16:30	06/05/14 20:19	621-64-7	
N-Nitrosodiphenylamine	364 U	ug/kg	364	36.8	1	06/02/14 16:30	06/05/14 20:19	86-30-6	
Pentachlorophenol	909 U	ug/kg	909	90.9	1	06/02/14 16:30	06/05/14 20:19	87-86-5	
Phenanthrene	364 U	ug/kg	364	67.1	1	06/02/14 16:30	06/05/14 20:19	85-01-8	
Phenol	364 U	ug/kg	364	88.3	1	06/02/14 16:30	06/05/14 20:19	108-95-2	
Pyrene	364 U	ug/kg	364	55.3	1	06/02/14 16:30	06/05/14 20:19	129-00-0	
1,2,4-Trichlorobenzene	364 U	ug/kg	364	55.7	1	06/02/14 16:30	06/05/14 20:19	120-82-1	
2,4,6-Trichlorophenol	364 U	ug/kg	364	66.5	1	06/02/14 16:30	06/05/14 20:19	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	87 %		34-107		1	06/02/14 16:30	06/05/14 20:19	4165-60-0	
2-Fluorobiphenyl (S)	86 %		38-107		1	06/02/14 16:30	06/05/14 20:19	321-60-8	
Terphenyl-d14 (S)	87 %		34-129		1	06/02/14 16:30	06/05/14 20:19	1718-51-0	
Phenol-d6 (S)	74 %		20-102		1	06/02/14 16:30	06/05/14 20:19	13127-88-3	
2-Fluorophenol (S)	77 %		29-88		1	06/02/14 16:30	06/05/14 20:19	367-12-4	
2,4,6-Tribromophenol (S)	84 %		13-114		1	06/02/14 16:30	06/05/14 20:19	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB03 @ 9.0' **Lab ID: 30121605016** Collected: 05/27/14 11:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	108 U	ug/kg	108	33.1	1		06/03/14 14:04	123-91-1	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/04/14 18:02	2037-26-5	
4-Bromofluorobenzene (S)	106 %		74-121		1		06/04/14 18:02	460-00-4	
1,2-Dichloroethane-d4 (S)	97 %		80-120		1		06/04/14 18:02	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	9.3 %		0.10	0.10	1		06/04/14 15:42		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB04 @ 1.5' **Lab ID: 30121605017** Collected: 05/27/14 11:50 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	6.7J	mg/kg	7.6	1.2	1	06/04/14 09:00	06/06/14 16:47		
Surrogates									
o-Terphenyl (S)	68 %		20-129		1	06/04/14 09:00	06/06/14 16:47	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.50 U	mg/kg	0.50	0.31	1	06/02/14 11:44	06/03/14 12:38	7440-36-0	
Arsenic	5.5	mg/kg	0.41	0.29	1	06/02/14 11:44	06/03/14 12:38	7440-38-2	
Barium	109	mg/kg	1.7	0.046	1	06/02/14 11:44	06/03/14 12:38	7440-39-3	
Beryllium	1.1	mg/kg	0.17	0.019	1	06/02/14 11:44	06/03/14 12:38	7440-41-7	
Cadmium	0.11J	mg/kg	0.25	0.032	1	06/02/14 11:44	06/03/14 12:38	7440-43-9	
Chromium	19.8	mg/kg	0.41	0.057	1	06/02/14 11:44	06/03/14 12:38	7440-47-3	
Copper	16.4	mg/kg	0.83	0.15	1	06/02/14 11:44	06/03/14 12:38	7440-50-8	
Lead	22.9	mg/kg	0.41	0.22	1	06/02/14 11:44	06/03/14 12:38	7439-92-1	
Nickel	14.2	mg/kg	1.7	0.11	1	06/02/14 11:44	06/03/14 12:38	7440-02-0	
Selenium	0.66 U	mg/kg	0.66	0.48	1	06/02/14 11:44	06/03/14 12:38	7782-49-2	
Silver	0.50 U	mg/kg	0.50	0.044	1	06/02/14 11:44	06/03/14 12:38	7440-22-4	
Thallium	1.7 U	mg/kg	1.7	0.27	1	06/02/14 11:44	06/03/14 12:38	7440-28-0	
Vanadium	32.3	mg/kg	0.83	0.047	1	06/02/14 11:44	06/03/14 12:38	7440-62-2	
Zinc	48.1	mg/kg	0.83	0.37	1	06/02/14 11:44	06/03/14 12:38	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.030J	mg/kg	0.11	0.0024	1	06/02/14 11:56	06/03/14 15:12	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	380 U	ug/kg	380	44.2	1	06/02/14 16:30	06/05/14 20:39	83-32-9	
Acenaphthylene	380 U	ug/kg	380	43.7	1	06/02/14 16:30	06/05/14 20:39	208-96-8	
Anthracene	380 U	ug/kg	380	59.4	1	06/02/14 16:30	06/05/14 20:39	120-12-7	
Azobenzene	380 U	ug/kg	380	39.8	1	06/02/14 16:30	06/05/14 20:39	103-33-3	N2
Benzidine	3760 U	ug/kg	3760	3760	1	06/02/14 16:30	06/27/14 21:20	92-87-5	
Benzo(a)anthracene	380 U	ug/kg	380	43.9	1	06/02/14 16:30	06/05/14 20:39	56-55-3	
Benzo(a)pyrene	380 U	ug/kg	380	128	1	06/02/14 16:30	06/05/14 20:39	50-32-8	
Benzo(b)fluoranthene	93.6J	ug/kg	380	74.9	1	06/02/14 16:30	06/05/14 20:39	205-99-2	
Benzo(g,h,i)perylene	380 U	ug/kg	380	109	1	06/02/14 16:30	06/05/14 20:39	191-24-2	
Benzo(k)fluoranthene	380 U	ug/kg	380	136	1	06/02/14 16:30	06/05/14 20:39	207-08-9	
4-Bromophenylphenyl ether	380 U	ug/kg	380	56.1	1	06/02/14 16:30	06/05/14 20:39	101-55-3	
Butylbenzylphthalate	380 U	ug/kg	380	43.6	1	06/02/14 16:30	06/05/14 20:39	85-68-7	
bis(2-Chloroethoxy)methane	380 U	ug/kg	380	62.2	1	06/02/14 16:30	06/05/14 20:39	111-91-1	
bis(2-Chloroethyl) ether	380 U	ug/kg	380	179	1	06/02/14 16:30	06/05/14 20:39	111-44-4	
bis(2-Chloroisopropyl) ether	380 U	ug/kg	380	50.4	1	06/02/14 16:30	06/05/14 20:39	108-60-1	
2-Chloronaphthalene	380 U	ug/kg	380	39.9	1	06/02/14 16:30	06/05/14 20:39	91-58-7	
2-Chlorophenol	380 U	ug/kg	380	48.5	1	06/02/14 16:30	06/05/14 20:39	95-57-8	
4-Chlorophenylphenyl ether	380 U	ug/kg	380	51.8	1	06/02/14 16:30	06/05/14 20:39	7005-72-3	
Chrysene	380 U	ug/kg	380	81.8	1	06/02/14 16:30	06/05/14 20:39	218-01-9	
Dibenz(a,h)anthracene	380 U	ug/kg	380	128	1	06/02/14 16:30	06/05/14 20:39	53-70-3	
1,2-Dichlorobenzene	380 U	ug/kg	380	56.5	1	06/02/14 16:30	06/05/14 20:39	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB04 @ 1.5' **Lab ID: 30121605017** Collected: 05/27/14 11:50 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	380 U	ug/kg	380	63.1	1	06/02/14 16:30	06/05/14 20:39	541-73-1	
1,4-Dichlorobenzene	380 U	ug/kg	380	53.5	1	06/02/14 16:30	06/05/14 20:39	106-46-7	
3,3'-Dichlorobenzidine	380 U	ug/kg	380	41.4	1	06/02/14 16:30	06/05/14 20:39	91-94-1	
2,4-Dichlorophenol	380 U	ug/kg	380	65.2	1	06/02/14 16:30	06/05/14 20:39	120-83-2	
Diethylphthalate	380 U	ug/kg	380	41.9	1	06/02/14 16:30	06/05/14 20:39	84-66-2	
2,4-Dimethylphenol	380 U	ug/kg	380	67.1	1	06/02/14 16:30	06/05/14 20:39	105-67-9	
Dimethylphthalate	380 U	ug/kg	380	53.9	1	06/02/14 16:30	06/05/14 20:39	131-11-3	
Di-n-butylphthalate	380 U	ug/kg	380	63.0	1	06/02/14 16:30	06/05/14 20:39	84-74-2	
4,6-Dinitro-2-methylphenol	950 U	ug/kg	950	108	1	06/02/14 16:30	06/05/14 20:39	534-52-1	
2,4-Dinitrophenol	950 U	ug/kg	950	344	1	06/02/14 16:30	06/05/14 20:39	51-28-5	
2,4-Dinitrotoluene	380 U	ug/kg	380	79.5	1	06/02/14 16:30	06/05/14 20:39	121-14-2	
2,6-Dinitrotoluene	380 U	ug/kg	380	49.8	1	06/02/14 16:30	06/05/14 20:39	606-20-2	
Di-n-octylphthalate	380 U	ug/kg	380	70.0	1	06/02/14 16:30	06/05/14 20:39	117-84-0	
bis(2-Ethylhexyl)phthalate	380 U	ug/kg	380	130	1	06/02/14 16:30	06/05/14 20:39	117-81-7	
Fluoranthene	121J	ug/kg	380	58.0	1	06/02/14 16:30	06/05/14 20:39	206-44-0	
Fluorene	380 U	ug/kg	380	53.5	1	06/02/14 16:30	06/05/14 20:39	86-73-7	
Hexachloro-1,3-butadiene	380 U	ug/kg	380	67.3	1	06/02/14 16:30	06/05/14 20:39	87-68-3	
Hexachlorobenzene	380 U	ug/kg	380	49.0	1	06/02/14 16:30	06/05/14 20:39	118-74-1	
Hexachlorocyclopentadiene	380 U	ug/kg	380	122	1	06/02/14 16:30	06/05/14 20:39	77-47-4	
Hexachloroethane	380 U	ug/kg	380	58.4	1	06/02/14 16:30	06/05/14 20:39	67-72-1	
Indeno(1,2,3-cd)pyrene	380 U	ug/kg	380	92.7	1	06/02/14 16:30	06/05/14 20:39	193-39-5	
Isophorone	380 U	ug/kg	380	41.5	1	06/02/14 16:30	06/05/14 20:39	78-59-1	
2-Methylphenol(o-Cresol)	380 U	ug/kg	380	67.2	1	06/02/14 16:30	06/05/14 20:39	95-48-7	
3&4-Methylphenol(m&p Cresol)	760 U	ug/kg	760	76.5	1	06/02/14 16:30	06/05/14 20:39		
Naphthalene	380 U	ug/kg	380	50.6	1	06/02/14 16:30	06/05/14 20:39	91-20-3	
Nitrobenzene	380 U	ug/kg	380	59.6	1	06/02/14 16:30	06/05/14 20:39	98-95-3	
2-Nitrophenol	380 U	ug/kg	380	42.7	1	06/02/14 16:30	06/05/14 20:39	88-75-5	
4-Nitrophenol	380 U	ug/kg	380	157	1	06/02/14 16:30	06/05/14 20:39	100-02-7	
N-Nitrosodimethylamine	380 U	ug/kg	380	48.8	1	06/02/14 16:30	06/05/14 20:39	62-75-9	
N-Nitroso-di-n-propylamine	380 U	ug/kg	380	44.9	1	06/02/14 16:30	06/05/14 20:39	621-64-7	
N-Nitrosodiphenylamine	380 U	ug/kg	380	38.4	1	06/02/14 16:30	06/05/14 20:39	86-30-6	
Pentachlorophenol	950 U	ug/kg	950	95.0	1	06/02/14 16:30	06/05/14 20:39	87-86-5	
Phenanthrene	111J	ug/kg	380	70.1	1	06/02/14 16:30	06/05/14 20:39	85-01-8	
Phenol	380 U	ug/kg	380	92.3	1	06/02/14 16:30	06/05/14 20:39	108-95-2	
Pyrene	85.8J	ug/kg	380	57.8	1	06/02/14 16:30	06/05/14 20:39	129-00-0	
1,2,4-Trichlorobenzene	380 U	ug/kg	380	58.2	1	06/02/14 16:30	06/05/14 20:39	120-82-1	
2,4,6-Trichlorophenol	380 U	ug/kg	380	69.5	1	06/02/14 16:30	06/05/14 20:39	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	41 %		34-107		1	06/02/14 16:30	06/05/14 20:39	4165-60-0	
2-Fluorobiphenyl (S)	43 %		38-107		1	06/02/14 16:30	06/05/14 20:39	321-60-8	
Terphenyl-d14 (S)	41 %		34-129		1	06/02/14 16:30	06/05/14 20:39	1718-51-0	
Phenol-d6 (S)	34 %		20-102		1	06/02/14 16:30	06/05/14 20:39	13127-88-3	
2-Fluorophenol (S)	35 %		29-88		1	06/02/14 16:30	06/05/14 20:39	367-12-4	
2,4,6-Tribromophenol (S)	37 %		13-114		1	06/02/14 16:30	06/05/14 20:39	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: M SB04 @ 1.5' **Lab ID: 30121605017** Collected: 05/27/14 11:50 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	88.3 U	ug/kg	88.3	27.0	1		06/03/14 14:31	123-91-1	
Surrogates									
Toluene-d8 (S)	94 %		81-117		1		06/04/14 18:29	2037-26-5	
4-Bromofluorobenzene (S)	102 %		74-121		1		06/04/14 18:29	460-00-4	
1,2-Dichloroethane-d4 (S)	93 %		80-120		1		06/04/14 18:29	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	12.4 %		0.10	0.10	1		06/04/14 15:43		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB04 @ 9.5' **Lab ID: 30121605018** Collected: 05/27/14 12:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Microwave Analytical Method: EPA 8015B Preparation Method: EPA 3546									
TPH (C10-C28)	1.7J	mg/kg	8.5	1.4	1	06/04/14 09:00	06/06/14 17:05		
Surrogates									
o-Terphenyl (S)	56 %		20-129		1	06/04/14 09:00	06/06/14 17:05	84-15-1	
6010 MET ICP Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Antimony	0.56 U	mg/kg	0.56	0.34	1	06/02/14 11:44	06/03/14 12:51	7440-36-0	
Arsenic	3.7	mg/kg	0.46	0.33	1	06/02/14 11:44	06/03/14 12:51	7440-38-2	
Barium	157	mg/kg	1.9	0.051	1	06/02/14 11:44	06/03/14 12:51	7440-39-3	
Beryllium	1.7	mg/kg	0.19	0.022	1	06/02/14 11:44	06/03/14 12:51	7440-41-7	
Cadmium	0.13J	mg/kg	0.28	0.036	1	06/02/14 11:44	06/03/14 12:51	7440-43-9	
Chromium	36.5	mg/kg	0.46	0.064	1	06/02/14 11:44	06/03/14 12:51	7440-47-3	
Copper	43.9	mg/kg	0.93	0.17	1	06/02/14 11:44	06/03/14 12:51	7440-50-8	
Lead	10.5	mg/kg	0.46	0.25	1	06/02/14 11:44	06/03/14 12:51	7439-92-1	
Nickel	28.0	mg/kg	1.9	0.13	1	06/02/14 11:44	06/03/14 12:51	7440-02-0	
Selenium	0.74 U	mg/kg	0.74	0.53	1	06/02/14 11:44	06/03/14 12:51	7782-49-2	
Silver	0.56 U	mg/kg	0.56	0.049	1	06/02/14 11:44	06/03/14 12:51	7440-22-4	
Thallium	1.9 U	mg/kg	1.9	0.30	1	06/02/14 11:44	06/03/14 12:51	7440-28-0	
Vanadium	28.1	mg/kg	0.93	0.053	1	06/02/14 11:44	06/03/14 12:51	7440-62-2	
Zinc	64.5	mg/kg	0.93	0.42	1	06/02/14 11:44	06/03/14 12:51	7440-66-6	
7471 Mercury Analytical Method: EPA 7471A Preparation Method: EPA 7471A									
Mercury	0.029J	mg/kg	0.12	0.0026	1	06/02/14 11:56	06/03/14 15:14	7439-97-6	
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
Acenaphthene	422 U	ug/kg	422	49.2	1	06/02/14 16:30	06/05/14 20:59	83-32-9	
Acenaphthylene	422 U	ug/kg	422	48.5	1	06/02/14 16:30	06/05/14 20:59	208-96-8	
Anthracene	422 U	ug/kg	422	66.0	1	06/02/14 16:30	06/05/14 20:59	120-12-7	
Azobenzene	422 U	ug/kg	422	44.2	1	06/02/14 16:30	06/05/14 20:59	103-33-3	N2
Benzidine	4180 U	ug/kg	4180	4180	1	06/02/14 16:30	06/27/14 21:40	92-87-5	
Benzo(a)anthracene	422 U	ug/kg	422	48.8	1	06/02/14 16:30	06/05/14 20:59	56-55-3	
Benzo(a)pyrene	422 U	ug/kg	422	142	1	06/02/14 16:30	06/05/14 20:59	50-32-8	
Benzo(b)fluoranthene	422 U	ug/kg	422	83.3	1	06/02/14 16:30	06/05/14 20:59	205-99-2	
Benzo(g,h,i)perylene	422 U	ug/kg	422	121	1	06/02/14 16:30	06/05/14 20:59	191-24-2	
Benzo(k)fluoranthene	422 U	ug/kg	422	151	1	06/02/14 16:30	06/05/14 20:59	207-08-9	
4-Bromophenylphenyl ether	422 U	ug/kg	422	62.3	1	06/02/14 16:30	06/05/14 20:59	101-55-3	
Butylbenzylphthalate	422 U	ug/kg	422	48.4	1	06/02/14 16:30	06/05/14 20:59	85-68-7	
bis(2-Chloroethoxy)methane	422 U	ug/kg	422	69.1	1	06/02/14 16:30	06/05/14 20:59	111-91-1	
bis(2-Chloroethyl) ether	422 U	ug/kg	422	199	1	06/02/14 16:30	06/05/14 20:59	111-44-4	
bis(2-Chloroisopropyl) ether	422 U	ug/kg	422	56.0	1	06/02/14 16:30	06/05/14 20:59	108-60-1	
2-Chloronaphthalene	422 U	ug/kg	422	44.4	1	06/02/14 16:30	06/05/14 20:59	91-58-7	
2-Chlorophenol	422 U	ug/kg	422	53.9	1	06/02/14 16:30	06/05/14 20:59	95-57-8	
4-Chlorophenylphenyl ether	422 U	ug/kg	422	57.5	1	06/02/14 16:30	06/05/14 20:59	7005-72-3	
Chrysene	422 U	ug/kg	422	90.9	1	06/02/14 16:30	06/05/14 20:59	218-01-9	
Dibenz(a,h)anthracene	422 U	ug/kg	422	142	1	06/02/14 16:30	06/05/14 20:59	53-70-3	
1,2-Dichlorobenzene	422 U	ug/kg	422	62.7	1	06/02/14 16:30	06/05/14 20:59	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30121605

Sample: M SB04 @ 9.5' **Lab ID: 30121605018** Collected: 05/27/14 12:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV FULL LIST MICROWAVE Analytical Method: EPA 8270C Preparation Method: EPA 3546									
1,3-Dichlorobenzene	422 U	ug/kg	422	70.1	1	06/02/14 16:30	06/05/14 20:59	541-73-1	
1,4-Dichlorobenzene	422 U	ug/kg	422	59.4	1	06/02/14 16:30	06/05/14 20:59	106-46-7	
3,3'-Dichlorobenzidine	422 U	ug/kg	422	46.0	1	06/02/14 16:30	06/05/14 20:59	91-94-1	
2,4-Dichlorophenol	422 U	ug/kg	422	72.5	1	06/02/14 16:30	06/05/14 20:59	120-83-2	
Diethylphthalate	422 U	ug/kg	422	46.5	1	06/02/14 16:30	06/05/14 20:59	84-66-2	
2,4-Dimethylphenol	422 U	ug/kg	422	74.5	1	06/02/14 16:30	06/05/14 20:59	105-67-9	
Dimethylphthalate	422 U	ug/kg	422	59.9	1	06/02/14 16:30	06/05/14 20:59	131-11-3	
Di-n-butylphthalate	422 U	ug/kg	422	70.0	1	06/02/14 16:30	06/05/14 20:59	84-74-2	
4,6-Dinitro-2-methylphenol	1060 U	ug/kg	1060	120	1	06/02/14 16:30	06/05/14 20:59	534-52-1	
2,4-Dinitrophenol	1060 U	ug/kg	1060	383	1	06/02/14 16:30	06/05/14 20:59	51-28-5	
2,4-Dinitrotoluene	422 U	ug/kg	422	88.3	1	06/02/14 16:30	06/05/14 20:59	121-14-2	
2,6-Dinitrotoluene	422 U	ug/kg	422	55.4	1	06/02/14 16:30	06/05/14 20:59	606-20-2	
Di-n-octylphthalate	422 U	ug/kg	422	77.8	1	06/02/14 16:30	06/05/14 20:59	117-84-0	
bis(2-Ethylhexyl)phthalate	422 U	ug/kg	422	144	1	06/02/14 16:30	06/05/14 20:59	117-81-7	
Fluoranthene	422 U	ug/kg	422	64.5	1	06/02/14 16:30	06/05/14 20:59	206-44-0	
Fluorene	422 U	ug/kg	422	59.4	1	06/02/14 16:30	06/05/14 20:59	86-73-7	
Hexachloro-1,3-butadiene	422 U	ug/kg	422	74.8	1	06/02/14 16:30	06/05/14 20:59	87-68-3	
Hexachlorobenzene	422 U	ug/kg	422	54.5	1	06/02/14 16:30	06/05/14 20:59	118-74-1	
Hexachlorocyclopentadiene	422 U	ug/kg	422	136	1	06/02/14 16:30	06/05/14 20:59	77-47-4	
Hexachloroethane	422 U	ug/kg	422	64.9	1	06/02/14 16:30	06/05/14 20:59	67-72-1	
Indeno(1,2,3-cd)pyrene	422 U	ug/kg	422	103	1	06/02/14 16:30	06/05/14 20:59	193-39-5	
Isophorone	422 U	ug/kg	422	46.1	1	06/02/14 16:30	06/05/14 20:59	78-59-1	
2-Methylphenol(o-Cresol)	422 U	ug/kg	422	74.6	1	06/02/14 16:30	06/05/14 20:59	95-48-7	
3&4-Methylphenol(m&p Cresol)	844 U	ug/kg	844	85.0	1	06/02/14 16:30	06/05/14 20:59		
Naphthalene	422 U	ug/kg	422	56.3	1	06/02/14 16:30	06/05/14 20:59	91-20-3	
Nitrobenzene	422 U	ug/kg	422	66.3	1	06/02/14 16:30	06/05/14 20:59	98-95-3	
2-Nitrophenol	422 U	ug/kg	422	47.4	1	06/02/14 16:30	06/05/14 20:59	88-75-5	
4-Nitrophenol	422 U	ug/kg	422	175	1	06/02/14 16:30	06/05/14 20:59	100-02-7	
N-Nitrosodimethylamine	422 U	ug/kg	422	54.2	1	06/02/14 16:30	06/05/14 20:59	62-75-9	
N-Nitroso-di-n-propylamine	422 U	ug/kg	422	49.9	1	06/02/14 16:30	06/05/14 20:59	621-64-7	
N-Nitrosodiphenylamine	422 U	ug/kg	422	42.7	1	06/02/14 16:30	06/05/14 20:59	86-30-6	
Pentachlorophenol	1060 U	ug/kg	1060	106	1	06/02/14 16:30	06/05/14 20:59	87-86-5	
Phenanthrene	422 U	ug/kg	422	77.9	1	06/02/14 16:30	06/05/14 20:59	85-01-8	
Phenol	422 U	ug/kg	422	103	1	06/02/14 16:30	06/05/14 20:59	108-95-2	
Pyrene	422 U	ug/kg	422	64.2	1	06/02/14 16:30	06/05/14 20:59	129-00-0	
1,2,4-Trichlorobenzene	422 U	ug/kg	422	64.6	1	06/02/14 16:30	06/05/14 20:59	120-82-1	
2,4,6-Trichlorophenol	422 U	ug/kg	422	77.2	1	06/02/14 16:30	06/05/14 20:59	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	91 %		34-107		1	06/02/14 16:30	06/05/14 20:59	4165-60-0	
2-Fluorobiphenyl (S)	91 %		38-107		1	06/02/14 16:30	06/05/14 20:59	321-60-8	
Terphenyl-d14 (S)	89 %		34-129		1	06/02/14 16:30	06/05/14 20:59	1718-51-0	
Phenol-d6 (S)	71 %		20-102		1	06/02/14 16:30	06/05/14 20:59	13127-88-3	
2-Fluorophenol (S)	76 %		29-88		1	06/02/14 16:30	06/05/14 20:59	367-12-4	
2,4,6-Tribromophenol (S)	82 %		13-114		1	06/02/14 16:30	06/05/14 20:59	118-79-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: M SB04 @ 9.5' **Lab ID: 30121605018** Collected: 05/27/14 12:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	127 U	ug/kg	127	39.0	1		06/03/14 15:00	123-91-1	
Surrogates									
Toluene-d8 (S)	94	%	81-117		1		06/04/14 18:56	2037-26-5	
4-Bromofluorobenzene (S)	108	%	74-121		1		06/04/14 18:56	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	80-120		1		06/04/14 18:56	17060-07-0	
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	22.9	%	0.10	0.10	1		06/04/14 15:43		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: O 01 SB01 @ 10' **Lab ID: 30121605019** Collected: 05/27/14 10:15 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010B Preparation Method: EPA 3050B							
Vanadium	36.6	mg/kg	0.91	0.052	1	06/02/14 11:44	06/03/14 12:54	7440-62-2	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	5.3 U	ug/kg	5.3	0.83	1		06/03/14 15:09	71-43-2	
Ethylbenzene	5.3 U	ug/kg	5.3	2.7	1		06/03/14 15:09	100-41-4	
Isopropylbenzene (Cumene)	5.3 U	ug/kg	5.3	1.1	1		06/03/14 15:09	98-82-8	
Methyl-tert-butyl ether	5.3 U	ug/kg	5.3	0.76	1		06/03/14 15:09	1634-04-4	
Naphthalene	5.3 U	ug/kg	5.3	2.7	1		06/03/14 15:09	91-20-3	
Toluene	5.3 U	ug/kg	5.3	0.68	1		06/03/14 15:09	108-88-3	
1,2,4-Trimethylbenzene	5.3 U	ug/kg	5.3	1.2	1		06/03/14 15:09	95-63-6	
1,3,5-Trimethylbenzene	5.3 U	ug/kg	5.3	1.4	1		06/03/14 15:09	108-67-8	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/03/14 15:09	2037-26-5	
4-Bromofluorobenzene (S)	107 %		74-121		1		06/03/14 15:09	460-00-4	
1,2-Dichloroethane-d4 (S)	129 %		80-120		1		06/03/14 15:09	17060-07-0	S3
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	20.0	%	0.10	0.10	1		06/04/14 15:44		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: O 01 SB02 @ 10' **Lab ID: 30121605020** Collected: 05/27/14 10:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010B Preparation Method: EPA 3050B									
Vanadium	24.4	mg/kg	0.87	0.049	1	06/02/14 11:44	06/03/14 12:56	7440-62-2	
8260 MSV PA UST									
Analytical Method: EPA 8260B									
Benzene	5.5 U	ug/kg	5.5	0.86	1		06/03/14 15:31	71-43-2	
Ethylbenzene	5.5 U	ug/kg	5.5	2.8	1		06/03/14 15:31	100-41-4	
Isopropylbenzene (Cumene)	5.5 U	ug/kg	5.5	1.2	1		06/03/14 15:31	98-82-8	
Methyl-tert-butyl ether	5.5 U	ug/kg	5.5	0.79	1		06/03/14 15:31	1634-04-4	
Naphthalene	5.5 U	ug/kg	5.5	2.8	1		06/03/14 15:31	91-20-3	
Toluene	5.5 U	ug/kg	5.5	0.71	1		06/03/14 15:31	108-88-3	
1,2,4-Trimethylbenzene	5.5 U	ug/kg	5.5	1.3	1		06/03/14 15:31	95-63-6	
1,3,5-Trimethylbenzene	5.5 U	ug/kg	5.5	1.5	1		06/03/14 15:31	108-67-8	
Surrogates									
Toluene-d8 (S)	95 %		81-117		1		06/03/14 15:31	2037-26-5	
4-Bromofluorobenzene (S)	102 %		74-121		1		06/03/14 15:31	460-00-4	
1,2-Dichloroethane-d4 (S)	123 %		80-120		1		06/03/14 15:31	17060-07-0	S3
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	22.0	%	0.10	0.10	1		06/04/14 15:44		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: O 01 SB03 @ 10' **Lab ID: 30121605021** Collected: 05/27/14 09:45 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010B Preparation Method: EPA 3050B							
Vanadium	32.7	mg/kg	0.84	0.048	1	06/02/14 11:44	06/03/14 12:58	7440-62-2	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	4.6 U	ug/kg	4.6	0.72	1		06/03/14 15:54	71-43-2	
Ethylbenzene	4.6 U	ug/kg	4.6	2.4	1		06/03/14 15:54	100-41-4	
Isopropylbenzene (Cumene)	4.6 U	ug/kg	4.6	0.98	1		06/03/14 15:54	98-82-8	
Methyl-tert-butyl ether	4.6 U	ug/kg	4.6	0.66	1		06/03/14 15:54	1634-04-4	
Naphthalene	4.6 U	ug/kg	4.6	2.3	1		06/03/14 15:54	91-20-3	
Toluene	4.6 U	ug/kg	4.6	0.59	1		06/03/14 15:54	108-88-3	
1,2,4-Trimethylbenzene	4.6 U	ug/kg	4.6	1.1	1		06/03/14 15:54	95-63-6	
1,3,5-Trimethylbenzene	4.6 U	ug/kg	4.6	1.2	1		06/03/14 15:54	108-67-8	
Surrogates									
Toluene-d8 (S)	91 %		81-117		1		06/03/14 15:54	2037-26-5	
4-Bromofluorobenzene (S)	103 %		74-121		1		06/03/14 15:54	460-00-4	
1,2-Dichloroethane-d4 (S)	129 %		80-120		1		06/03/14 15:54	17060-07-0	S3
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	18.8	%	0.10	0.10	1		06/04/14 15:44		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: O 01 SB04 @ 10' **Lab ID: 30121605022** Collected: 05/27/14 10:35 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010B Preparation Method: EPA 3050B							
Vanadium	45.0	mg/kg	0.80	0.046	1	06/02/14 11:50	06/03/14 10:28	7440-62-2	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	4.9 U	ug/kg	4.9	0.77	1		06/03/14 16:16	71-43-2	
Ethylbenzene	4.9 U	ug/kg	4.9	2.5	1		06/03/14 16:16	100-41-4	
Isopropylbenzene (Cumene)	4.9 U	ug/kg	4.9	1.0	1		06/03/14 16:16	98-82-8	
Methyl-tert-butyl ether	4.9 U	ug/kg	4.9	0.70	1		06/03/14 16:16	1634-04-4	
Naphthalene	4.9 U	ug/kg	4.9	2.5	1		06/03/14 16:16	91-20-3	
Toluene	4.9 U	ug/kg	4.9	0.63	1		06/03/14 16:16	108-88-3	
1,2,4-Trimethylbenzene	4.9 U	ug/kg	4.9	1.1	1		06/03/14 16:16	95-63-6	
1,3,5-Trimethylbenzene	4.9 U	ug/kg	4.9	1.3	1		06/03/14 16:16	108-67-8	
Surrogates									
Toluene-d8 (S)	93 %		81-117		1		06/03/14 16:16	2037-26-5	
4-Bromofluorobenzene (S)	100 %		74-121		1		06/03/14 16:16	460-00-4	
1,2-Dichloroethane-d4 (S)	126 %		80-120		1		06/03/14 16:16	17060-07-0	S3
Percent Moisture		Analytical Method: ASTM D2974-87							
Percent Moisture	11.2	%	0.10	0.10	1		06/04/14 15:45		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30121605

Sample: Trip Blank_052714 **Lab ID:** 30121605023 Collected: 05/27/14 08:00 Received: 05/29/14 10:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level		Analytical Method: EPA 8260B							
1,4-Dioxane (p-Dioxane)	100 U	ug/kg	100	30.6	1		06/03/14 13:09	123-91-1	
Surrogates									
Toluene-d8 (S)	96 %		81-117		1		06/04/14 13:58	2037-26-5	
4-Bromofluorobenzene (S)	101 %		74-121		1		06/04/14 13:58	460-00-4	
1,2-Dichloroethane-d4 (S)	117 %		80-120		1		06/04/14 13:58	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

MATRIX SPIKE SAMPLE: 737513

Parameter	Units	30121605001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	0.48 U	39.1	11.1	28	75-125	M1
Arsenic	mg/kg	7.1	39.1	39.8	83	75-125	
Barium	mg/kg	88.3	39.1	131	110	75-125	
Beryllium	mg/kg	0.83	39.1	35.9	90	75-125	
Cadmium	mg/kg	0.24 U	39.1	33.1	85	75-125	
Chromium	mg/kg	32.8	39.1	69.7	94	75-125	
Copper	mg/kg	18.1	39.1	53.8	91	75-125	
Lead	mg/kg	15.8	39.1	51.9	92	75-125	
Nickel	mg/kg	12.6	39.1	45.0	83	75-125	
Selenium	mg/kg	0.63 U	39.1	29.8	76	75-125	
Silver	mg/kg	0.48 U	19.5	16.5	84	75-125	
Thallium	mg/kg	0.53J	39.1	32.5	82	75-125	
Vanadium	mg/kg	49.0	39.1	87.5	98	75-125	
Zinc	mg/kg	38.7	39.1	74.6	92	75-125	

SAMPLE DUPLICATE: 737512

Parameter	Units	30121605001 Result	Dup Result	RPD	Max RPD	Qualifiers
Antimony	mg/kg	0.48 U	0.53 U		20	
Arsenic	mg/kg	7.1	6.9	3	20	
Barium	mg/kg	88.3	87.3	1	20	
Beryllium	mg/kg	0.83	0.75	11	20	
Cadmium	mg/kg	0.24 U	0.27 U		20	
Chromium	mg/kg	32.8	31.4	5	20	
Copper	mg/kg	18.1	18.0	1	20	
Lead	mg/kg	15.8	15.6	1	20	
Nickel	mg/kg	12.6	12.4	2	20	
Selenium	mg/kg	0.63 U	0.71 U		20	
Silver	mg/kg	0.48 U	0.53 U		20	
Thallium	mg/kg	0.53J	1.8 U		20	
Vanadium	mg/kg	49.0	48.3	1	20	
Zinc	mg/kg	38.7	38.5	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

QC Batch:	MPRP/13120	Analysis Method:	EPA 6010B
QC Batch Method:	EPA 3050B	Analysis Description:	6010 MET
Associated Lab Samples:	30121605022		

METHOD BLANK: 737518 Matrix: Solid

Associated Lab Samples: 30121605022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vanadium	mg/kg	1.0 U	1.0	06/03/14 10:24	

LABORATORY CONTROL SAMPLE: 737519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/kg	50	51.4	103	80-120	

MATRIX SPIKE SAMPLE: 737521

Parameter	Units	30121605022 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/kg	45.0	38.1	79.3	90	75-125	

SAMPLE DUPLICATE: 737520

Parameter	Units	30121605022 Result	Dup Result	RPD	Max RPD	Qualifiers
Vanadium	mg/kg	45.0	43.7	3	20	

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30121605

QC Batch: OEXT/19487 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30121605007, 30121605008, 30121605009, 30121605010, 30121605011, 30121605012, 30121605013, 30121605014, 30121605015, 30121605016, 30121605017, 30121605018

METHOD BLANK: 738382 Matrix: Solid
Associated Lab Samples: 30121605007, 30121605008, 30121605009, 30121605010, 30121605011, 30121605012, 30121605013, 30121605014, 30121605015, 30121605016, 30121605017, 30121605018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	1.2J	6.7	06/06/14 12:55	
o-Terphenyl (S)	%	81	20-129	06/06/14 12:55	

LABORATORY CONTROL SAMPLE: 738383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	66.5	100	52-126	
o-Terphenyl (S)	%			78	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 738384 738385

Parameter	Units	30121605007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	3.2J	79.9	78.1	85.8	82.7	103	102	52-126	4	25	
o-Terphenyl (S)	%						61	60	20-129			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30121605

QC Batch: OEXT/19444 Analysis Method: EPA 8270C by SIM
QC Batch Method: EPA 3546 Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 30121605003, 30121605004, 30121605005, 30121605006

METHOD BLANK: 736952 Matrix: Solid
Associated Lab Samples: 30121605003, 30121605004, 30121605005, 30121605006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Anthracene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Benzo(a)anthracene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Benzo(a)pyrene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Benzo(b)fluoranthene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Benzo(g,h,i)perylene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Chrysene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Fluorene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Phenanthrene	ug/kg	6.7 U	6.7	06/04/14 20:23	
Pyrene	ug/kg	6.7 U	6.7	06/04/14 20:23	
2-Fluorobiphenyl (S)	%	81	30-90	06/04/14 20:23	
Terphenyl-d14 (S)	%	105	53-124	06/04/14 20:23	

LABORATORY CONTROL SAMPLE: 736953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Anthracene	ug/kg	133	110	83	55-128	
Benzo(a)anthracene	ug/kg	133	137	103	56-142	
Benzo(a)pyrene	ug/kg	133	116	87	61-134	
Benzo(b)fluoranthene	ug/kg	133	135	101	51-154	
Benzo(g,h,i)perylene	ug/kg	133	130	98	53-143	
Chrysene	ug/kg	133	122	92	61-131	
Fluorene	ug/kg	133	116	87	43-114	
Phenanthrene	ug/kg	133	139	104	47-115	
Pyrene	ug/kg	133	125	94	60-130	
2-Fluorobiphenyl (S)	%			98	30-90	S0
Terphenyl-d14 (S)	%			110	53-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 736954 736955

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		30121245001 Result	Spike Conc.	Spike Conc.	Result							
Anthracene	ug/kg	ND	135	135	134	120	96	86	55-128	11	20	
Benzo(a)anthracene	ug/kg	21.3	135	135	175	168	114	109	56-142	4	20	
Benzo(a)pyrene	ug/kg	7.4	135	135	141	135	99	95	61-134	4	20	
Benzo(b)fluoranthene	ug/kg	25.2	135	135	161	161	101	101	51-154	0	20	
Benzo(g,h,i)perylene	ug/kg	ND	135	135	112	108	78	76	53-143	3	20	
Chrysene	ug/kg	17.9	135	135	146	143	95	93	61-131	2	20	
Fluorene	ug/kg	ND	135	135	120	109	86	78	43-114	9	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

Parameter	Units	30121245001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec							
Phenanthrene	ug/kg	54.2	135	135	256	231	149	131	47-115	10	20	M0			
Pyrene	ug/kg	14.4	135	135	179	165	122	112	60-130	8	20				
2-Fluorobiphenyl (S)	%						82	73	30-90						
Terphenyl-d14 (S)	%						116	111	53-124						

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30121605

QC Batch: OEXT/19452 Analysis Method: EPA 8270C
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 30121605007, 30121605008, 30121605009, 30121605010, 30121605011, 30121605012, 30121605013, 30121605014, 30121605015, 30121605016, 30121605017, 30121605018

METHOD BLANK: 737328 Matrix: Solid
Associated Lab Samples: 30121605007, 30121605008, 30121605009, 30121605010, 30121605011, 30121605012, 30121605013, 30121605014, 30121605015, 30121605016, 30121605017, 30121605018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	333 U	333	06/05/14 14:21	
1,2-Dichlorobenzene	ug/kg	333 U	333	06/05/14 14:21	
1,3-Dichlorobenzene	ug/kg	333 U	333	06/05/14 14:21	
1,4-Dichlorobenzene	ug/kg	333 U	333	06/05/14 14:21	
2,4,6-Trichlorophenol	ug/kg	333 U	333	06/05/14 14:21	
2,4-Dichlorophenol	ug/kg	333 U	333	06/05/14 14:21	
2,4-Dimethylphenol	ug/kg	333 U	333	06/05/14 14:21	
2,4-Dinitrophenol	ug/kg	833 U	833	06/05/14 14:21	
2,4-Dinitrotoluene	ug/kg	333 U	333	06/05/14 14:21	
2,6-Dinitrotoluene	ug/kg	333 U	333	06/05/14 14:21	
2-Chloronaphthalene	ug/kg	333 U	333	06/05/14 14:21	
2-Chlorophenol	ug/kg	333 U	333	06/05/14 14:21	
2-Methylphenol(o-Cresol)	ug/kg	333 U	333	06/05/14 14:21	
2-Nitrophenol	ug/kg	333 U	333	06/05/14 14:21	
3&4-Methylphenol(m&p Cresol)	ug/kg	666 U	666	06/05/14 14:21	
3,3'-Dichlorobenzidine	ug/kg	333 U	333	06/05/14 14:21	
4,6-Dinitro-2-methylphenol	ug/kg	833 U	833	06/05/14 14:21	
4-Bromophenylphenyl ether	ug/kg	333 U	333	06/05/14 14:21	
4-Chlorophenylphenyl ether	ug/kg	333 U	333	06/05/14 14:21	
4-Nitrophenol	ug/kg	333 U	333	06/05/14 14:21	
Acenaphthene	ug/kg	333 U	333	06/05/14 14:21	
Acenaphthylene	ug/kg	333 U	333	06/05/14 14:21	
Anthracene	ug/kg	333 U	333	06/05/14 14:21	
Azobenzene	ug/kg	333 U	333	06/05/14 14:21	N2
Benzidine	ug/kg	3300 U	3300	06/27/14 16:42	
Benzo(a)anthracene	ug/kg	333 U	333	06/05/14 14:21	
Benzo(a)pyrene	ug/kg	333 U	333	06/05/14 14:21	
Benzo(b)fluoranthene	ug/kg	333 U	333	06/05/14 14:21	
Benzo(g,h,i)perylene	ug/kg	333 U	333	06/05/14 14:21	
Benzo(k)fluoranthene	ug/kg	333 U	333	06/05/14 14:21	
bis(2-Chloroethoxy)methane	ug/kg	333 U	333	06/05/14 14:21	
bis(2-Chloroethyl) ether	ug/kg	333 U	333	06/05/14 14:21	
bis(2-Chloroisopropyl) ether	ug/kg	333 U	333	06/05/14 14:21	
bis(2-Ethylhexyl)phthalate	ug/kg	188J	333	06/05/14 14:21	
Butylbenzylphthalate	ug/kg	333 U	333	06/05/14 14:21	
Chrysene	ug/kg	333 U	333	06/05/14 14:21	
Di-n-butylphthalate	ug/kg	333 U	333	06/05/14 14:21	
Di-n-octylphthalate	ug/kg	333 U	333	06/05/14 14:21	
Dibenz(a,h)anthracene	ug/kg	333 U	333	06/05/14 14:21	
Diethylphthalate	ug/kg	333 U	333	06/05/14 14:21	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

METHOD BLANK: 737328

Matrix: Solid

Associated Lab Samples: 30121605007, 30121605008, 30121605009, 30121605010, 30121605011, 30121605012, 30121605013, 30121605014, 30121605015, 30121605016, 30121605017, 30121605018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dimethylphthalate	ug/kg	333 U	333	06/05/14 14:21	
Fluoranthene	ug/kg	333 U	333	06/05/14 14:21	
Fluorene	ug/kg	333 U	333	06/05/14 14:21	
Hexachloro-1,3-butadiene	ug/kg	333 U	333	06/05/14 14:21	
Hexachlorobenzene	ug/kg	333 U	333	06/05/14 14:21	
Hexachlorocyclopentadiene	ug/kg	333 U	333	06/05/14 14:21	
Hexachloroethane	ug/kg	333 U	333	06/05/14 14:21	
Indeno(1,2,3-cd)pyrene	ug/kg	333 U	333	06/05/14 14:21	
Isophorone	ug/kg	333 U	333	06/05/14 14:21	
N-Nitroso-di-n-propylamine	ug/kg	333 U	333	06/05/14 14:21	
N-Nitrosodimethylamine	ug/kg	333 U	333	06/05/14 14:21	
N-Nitrosodiphenylamine	ug/kg	333 U	333	06/05/14 14:21	
Naphthalene	ug/kg	333 U	333	06/05/14 14:21	
Nitrobenzene	ug/kg	333 U	333	06/05/14 14:21	
Pentachlorophenol	ug/kg	833 U	833	06/05/14 14:21	
Phenanthrene	ug/kg	333 U	333	06/05/14 14:21	
Phenol	ug/kg	333 U	333	06/05/14 14:21	
Pyrene	ug/kg	333 U	333	06/05/14 14:21	
2,4,6-Tribromophenol (S)	%	91	13-114	06/05/14 14:21	
2-Fluorobiphenyl (S)	%	92	38-107	06/05/14 14:21	
2-Fluorophenol (S)	%	90	29-88	06/05/14 14:21	S0
Nitrobenzene-d5 (S)	%	91	34-107	06/05/14 14:21	
Phenol-d6 (S)	%	80	20-102	06/05/14 14:21	
Terphenyl-d14 (S)	%	94	34-129	06/05/14 14:21	

LABORATORY CONTROL SAMPLE: 737329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	3330	2490	75	54-118	
1,2-Dichlorobenzene	ug/kg	3330	3110	93	61-123	
1,3-Dichlorobenzene	ug/kg	3330	2880	87	58-122	
1,4-Dichlorobenzene	ug/kg	3330	3160	95	54-119	
2,4,6-Trichlorophenol	ug/kg	3330	3240	97	69-142	
2,4-Dichlorophenol	ug/kg	3330	2570	77	64-135	
2,4-Dimethylphenol	ug/kg	3330	2410	72	66-135	
2,4-Dinitrophenol	ug/kg	3330	2250	67	10-185	
2,4-Dinitrotoluene	ug/kg	3330	3110	93	41-145	
2,6-Dinitrotoluene	ug/kg	3330	3180	95	10-182	
2-Chloronaphthalene	ug/kg	3330	2930	88	69-128	
2-Chlorophenol	ug/kg	3330	3090	93	59-122	
2-Methylphenol(o-Cresol)	ug/kg	3330	2990	90	63-130	
2-Nitrophenol	ug/kg	3330	2360	71	66-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	3330	2970	89	60-130	

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

LABORATORY CONTROL SAMPLE: 737329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
3,3'-Dichlorobenzidine	ug/kg		333 U			
4,6-Dinitro-2-methylphenol	ug/kg	3330	3280	98	26-173	
4-Bromophenylphenyl ether	ug/kg	3330	3230	97	71-139	
4-Chlorophenylphenyl ether	ug/kg	3330	3030	91	74-133	
4-Nitrophenol	ug/kg	3330	3470	104	19-139	
Acenaphthene	ug/kg	3330	3100	93	61-131	
Acenaphthylene	ug/kg	3330	3060	92	58-135	
Anthracene	ug/kg	3330	3070	92	64-131	
Benzidine	ug/kg		3300 U			
Benzo(a)anthracene	ug/kg	3330	3410	102	59-136	
Benzo(a)pyrene	ug/kg	3330	3150	95	67-135	
Benzo(b)fluoranthene	ug/kg	3330	3330	100	56-146	
Benzo(g,h,i)perylene	ug/kg	3330	4300	129	20-145	
Benzo(k)fluoranthene	ug/kg	3330	2700	81	61-163	
bis(2-Chloroethoxy)methane	ug/kg	3330	2380	71	68-133	
bis(2-Chloroethyl) ether	ug/kg	3330	2840	85	58-128	
bis(2-Chloroisopropyl) ether	ug/kg	3330	3140	94	53-137	
bis(2-Ethylhexyl)phthalate	ug/kg	3330	3420	103	66-150	
Butylbenzylphthalate	ug/kg	3330	3190	96	58-168	
Chrysene	ug/kg	3330	3170	95	62-146	
Di-n-butylphthalate	ug/kg	3330	3250	98	74-127	
Di-n-octylphthalate	ug/kg	3330	3180	95	60-156	
Dibenz(a,h)anthracene	ug/kg	3330	4030	121	20-131	
Diethylphthalate	ug/kg	3330	3150	95	70-132	
Dimethylphthalate	ug/kg	3330	3090	93	68-130	
Fluoranthene	ug/kg	3330	3200	96	55-138	
Fluorene	ug/kg	3330	3060	92	60-131	
Hexachloro-1,3-butadiene	ug/kg	3330	2610	78	68-141	
Hexachlorobenzene	ug/kg	3330	3360	101	71-142	
Hexachlorocyclopentadiene	ug/kg	3330	2470	74	38-119	
Hexachloroethane	ug/kg	3330	2970	89	56-123	
Indeno(1,2,3-cd)pyrene	ug/kg	3330	4000	120	30-144	
Isophorone	ug/kg	3330	2560	77	69-121	
N-Nitroso-di-n-propylamine	ug/kg	3330	3180	95	53-128	
N-Nitrosodiphenylamine	ug/kg	3330	3300	99	74-141	
Naphthalene	ug/kg	3330	2410	72	47-143	
Nitrobenzene	ug/kg	3330	2280	68	55-139	
Pentachlorophenol	ug/kg	3330	3420	103	10-165	
Phenanthrene	ug/kg	3330	3160	95	61-135	
Phenol	ug/kg	3330	3320	100	49-126	
Pyrene	ug/kg	3330	3110	93	39-174	
2,4,6-Tribromophenol (S)	%			96	13-114	
2-Fluorobiphenyl (S)	%			90	38-107	
2-Fluorophenol (S)	%			87	29-88	
Nitrobenzene-d5 (S)	%			67	34-107	
Phenol-d6 (S)	%			85	20-102	
Terphenyl-d14 (S)	%			94	34-129	

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30121605

Parameter	30121605014			737332								737333		
	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual		
1,2,4-Trichlorobenzene	ug/kg	422 U	4310	4280	3030	2890	70	67	54-118	5	25			
1,2-Dichlorobenzene	ug/kg	422 U	4310	4280	3730	3520	87	82	61-123	6	25			
1,3-Dichlorobenzene	ug/kg	422 U	4310	4280	3710	3410	86	80	58-122	8	25			
1,4-Dichlorobenzene	ug/kg	422 U	4310	4280	3650	3400	85	79	54-119	7	25			
2,4,6-Trichlorophenol	ug/kg	422 U	4310	4280	4180	4010	97	94	69-142	4	25			
2,4-Dichlorophenol	ug/kg	422 U	4310	4280	3170	2970	74	69	64-135	6	25			
2,4-Dimethylphenol	ug/kg	422 U	4310	4280	1940	1630	45	38	66-135	18	25	MO		
2,4-Dinitrophenol	ug/kg	1060 U	4310	4280	2110	2080	49	49	10-185	2	25			
2,4-Dinitrotoluene	ug/kg	422 U	4310	4280	4140	4100	96	96	41-145	1	25			
2,6-Dinitrotoluene	ug/kg	422 U	4310	4280	4160	4130	97	96	10-182	1	25			
2-Chloronaphthalene	ug/kg	422 U	4310	4280	3820	3660	89	85	69-128	4	25			
2-Chlorophenol	ug/kg	422 U	4310	4280	3700	3430	86	80	59-122	8	25			
2-Methylphenol(o-Cresol)	ug/kg	422 U	4310	4280	2960	2720	69	63	63-130	9	25			
2-Nitrophenol	ug/kg	422 U	4310	4280	2750	2680	64	63	66-130	2	25	MO		
3&4-Methylphenol(m&p Cresol)	ug/kg	845 U	4310	4280	3050	2720	71	64	60-130	11	25			
3,3'-Dichlorobenzidine	ug/kg	422 U			430 U	428 U						25		
4,6-Dinitro-2-methylphenol	ug/kg	1060 U	4310	4280	3680	3760	86	88	26-173	2	25			
4-Bromophenylphenyl ether	ug/kg	422 U	4310	4280	4320	4100	100	96	71-139	5	25			
4-Chlorophenylphenyl ether	ug/kg	422 U	4310	4280	4020	3960	93	93	74-133	1	25			
4-Nitrophenol	ug/kg	422 U	4310	4280	4280	4350	99	102	19-139	2	25			
Acenaphthene	ug/kg	422 U	4310	4280	4040	3920	94	92	61-131	3	25			
Acenaphthylene	ug/kg	422 U	4310	4280	3980	3900	93	91	58-135	2	25			
Anthracene	ug/kg	422 U	4310	4280	3950	3930	92	92	64-131	0	25			
Benzidine	ug/kg	4190 U			4260 U	4240 U						25		
Benzo(a)anthracene	ug/kg	422 U	4310	4280	4390	4360	102	102	59-136	1	25			
Benzo(a)pyrene	ug/kg	422 U	4310	4280	4110	4050	96	94	67-135	2	25			
Benzo(b)fluoranthene	ug/kg	422 U	4310	4280	4330	4350	101	102	56-146	1	25			
Benzo(g,h,i)perylene	ug/kg	422 U	4310	4280	3780	3820	88	89	20-145	1	25			
Benzo(k)fluoranthene	ug/kg	422 U	4310	4280	3890	3860	90	90	61-163	1	25			
bis(2-Chloroethoxy)methane	ug/kg	422 U	4310	4280	3040	2910	71	68	68-133	4	25			
bis(2-Chloroethyl) ether	ug/kg	422 U	4310	4280	3490	3260	81	76	58-128	7	25			
bis(2-Chloroisopropyl) ether	ug/kg	422 U	4310	4280	3860	3680	90	86	53-137	5	25			
bis(2-Ethylhexyl)phthalate	ug/kg	422 U	4310	4280	4490	4520	101	103	66-150	1	25			
Butylbenzylphthalate	ug/kg	422 U	4310	4280	4330	4190	101	98	58-168	3	25			
Chrysene	ug/kg	422 U	4310	4280	4140	4050	96	95	62-146	2	25			
Di-n-butylphthalate	ug/kg	422 U	4310	4280	4240	4160	99	97	74-127	2	25			
Di-n-octylphthalate	ug/kg	422 U	4310	4280	4420	4370	103	102	60-156	1	25			
Dibenz(a,h)anthracene	ug/kg	422 U	4310	4280	4050	4060	94	95	20-131	0	25			
Diethylphthalate	ug/kg	422 U	4310	4280	4130	4030	96	94	70-132	2	25			
Dimethylphthalate	ug/kg	422 U	4310	4280	4070	4040	94	94	68-130	1	25			
Fluoranthene	ug/kg	422 U	4310	4280	4120	4130	96	96	55-138	0	25			
Fluorene	ug/kg	422 U	4310	4280	4060	3970	94	93	60-131	2	25			
Hexachloro-1,3-butadiene	ug/kg	422 U	4310	4280	3160	3010	73	70	68-141	5	25			
Hexachlorobenzene	ug/kg	422 U	4310	4280	4350	4150	101	97	71-142	5	25			
Hexachlorocyclopentadiene	ug/kg	422 U	4310	4280	3170	2900	74	68	38-119	9	25			

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

Parameter	Units	30121605014		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	U	Spike Conc.	Conc.	Result	Result	% Rec	% Rec							
Hexachloroethane	ug/kg	422	U	4310	4280	3530	3260	82	76	56-123	8	25				
Indeno(1,2,3-cd)pyrene	ug/kg	422	U	4310	4280	3910	3900	91	91	30-144	0	25				
Isophorone	ug/kg	422	U	4310	4280	3280	3090	76	72	69-121	6	25				
N-Nitroso-di-n-propylamine	ug/kg	422	U	4310	4280	4150	3930	97	92	53-128	6	25				
N-Nitrosodiphenylamine	ug/kg	422	U	4310	4280	4200	4070	98	95	74-141	3	25				
Naphthalene	ug/kg	422	U	4310	4280	2990	2860	70	67	47-143	5	25				
Nitrobenzene	ug/kg	422	U	4310	4280	2830	2700	66	63	55-139	4	25				
Pentachlorophenol	ug/kg	1060	U	4310	4280	4640	4520	108	106	10-165	3	25				
Phenanthrene	ug/kg	422	U	4310	4280	4040	4020	94	94	61-135	1	25				
Phenol	ug/kg	422	U	4310	4280	3550	3290	82	77	49-126	8	25				
Pyrene	ug/kg	422	U	4310	4280	3820	3580	89	84	39-174	7	25				
2,4,6-Tribromophenol (S)	%							96	92	13-114						
2-Fluorobiphenyl (S)	%							92	85	38-107						
2-Fluorophenol (S)	%							70	64	29-88						
Nitrobenzene-d5 (S)	%							67	64	34-107						
Phenol-d6 (S)	%							73	66	20-102						
Terphenyl-d14 (S)	%							86	85	34-129						

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30121605

QC Batch: PMST/4546

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 30121605016, 30121605017, 30121605018, 30121605019, 30121605020, 30121605021, 30121605022

SAMPLE DUPLICATE: 738717

Parameter	Units	30121838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	33.5	39.9	17	20	

SAMPLE DUPLICATE: 738718

Parameter	Units	30121839001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	31.1	32.0	3	20	

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QUALIFIERS

Project: Worcester Township
Pace Project No.: 30121605

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/19819

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/19821

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/19823

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

IS The internal standard response is below criteria. Results may be biased high.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

S3 Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Worcester Township
Pace Project No.: 30121605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30121605007	L SB01 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605008	L SB01 @ 8'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605009	L SB02 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605010	L SB02 @ 7'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605011	M SB01 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605012	M SB01 @ 9.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605013	M SB02 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605014	M SB02 @ 9.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605015	M SB03 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605016	M SB03 @ 9.0'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605017	M SB04 @ 1.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605018	M SB04 @ 9.5'	EPA 3546	OEXT/19487	EPA 8015B	GCSV/6818
30121605001	O 09 SS01 @ 6"	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605003	K SB01 @ 4'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605004	K SB02 @ 4'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605005	K SB03 @ 4'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605006	K SB04 @ 4'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605007	L SB01 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605008	L SB01 @ 8'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605009	L SB02 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605010	L SB02 @ 7'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605011	M SB01 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605012	M SB01 @ 9.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605013	M SB02 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605014	M SB02 @ 9.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605015	M SB03 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605016	M SB03 @ 9.0'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605017	M SB04 @ 1.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605018	M SB04 @ 9.5'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605019	O 01 SB01 @ 10'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605020	O 01 SB02 @ 10'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605021	O 01 SB03 @ 10'	EPA 3050B	MPRP/13119	EPA 6010B	ICP/12441
30121605022	O 01 SB04 @ 10'	EPA 3050B	MPRP/13120	EPA 6010B	ICP/12442
30121605007	L SB01 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605008	L SB01 @ 8'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605009	L SB02 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605010	L SB02 @ 7'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605011	M SB01 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605012	M SB01 @ 9.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605013	M SB02 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605014	M SB02 @ 9.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605015	M SB03 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605016	M SB03 @ 9.0'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605017	M SB04 @ 1.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605018	M SB04 @ 9.5'	EPA 7471A	MERP/5532	EPA 7471A	MERC/5304
30121605003	K SB01 @ 4'	EPA 3546	OEXT/19444	EPA 8270C by SIM	MSSV/6372
30121605004	K SB02 @ 4'	EPA 3546	OEXT/19444	EPA 8270C by SIM	MSSV/6372

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Worcester Township
Pace Project No.: 30121605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30121605005	K SB03 @ 4'	EPA 3546	OEXT/19444	EPA 8270C by SIM	MSSV/6372
30121605006	K SB04 @ 4'	EPA 3546	OEXT/19444	EPA 8270C by SIM	MSSV/6372
30121605007	L SB01 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605008	L SB01 @ 8'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605009	L SB02 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605010	L SB02 @ 7'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605011	M SB01 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605012	M SB01 @ 9.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605013	M SB02 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605014	M SB02 @ 9.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605015	M SB03 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605016	M SB03 @ 9.0'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605017	M SB04 @ 1.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605018	M SB04 @ 9.5'	EPA 3546	OEXT/19452	EPA 8270C	MSSV/6387
30121605007	L SB01 @ 1.5'	EPA 8260B	MSV/19821		
30121605008	L SB01 @ 8'	EPA 8260B	MSV/19821		
30121605009	L SB02 @ 1.5'	EPA 8260B	MSV/19821		
30121605010	L SB02 @ 7'	EPA 8260B	MSV/19821		
30121605011	M SB01 @ 1.5'	EPA 8260B	MSV/19821		
30121605012	M SB01 @ 9.5'	EPA 8260B	MSV/19821		
30121605013	M SB02 @ 1.5'	EPA 8260B	MSV/19821		
30121605014	M SB02 @ 9.5'	EPA 8260B	MSV/19823		
30121605015	M SB03 @ 1.5'	EPA 8260B	MSV/19823		
30121605016	M SB03 @ 9.0'	EPA 8260B	MSV/19823		
30121605017	M SB04 @ 1.5'	EPA 8260B	MSV/19823		
30121605018	M SB04 @ 9.5'	EPA 8260B	MSV/19823		
30121605023	Trip Blank_052714	EPA 8260B	MSV/19823		
30121605001	O 09 SS01 @ 6"	EPA 8260B	MSV/19819		
30121605002	E SB01 @ 10'	EPA 8260B	MSV/19819		
30121605003	K SB01 @ 4'	EPA 8260B	MSV/19819		
30121605004	K SB02 @ 4'	EPA 8260B	MSV/19819		
30121605005	K SB03 @ 4'	EPA 8260B	MSV/19819		
30121605006	K SB04 @ 4'	EPA 8260B	MSV/19819		
30121605019	O 01 SB01 @ 10'	EPA 8260B	MSV/19819		
30121605020	O 01 SB02 @ 10'	EPA 8260B	MSV/19819		
30121605021	O 01 SB03 @ 10'	EPA 8260B	MSV/19819		
30121605022	O 01 SB04 @ 10'	EPA 8260B	MSV/19819		
30121605001	O 09 SS01 @ 6"	ASTM D2974-87	PMST/4545		
30121605002	E SB01 @ 10'	ASTM D2974-87	PMST/4545		
30121605003	K SB01 @ 4'	ASTM D2974-87	PMST/4545		
30121605004	K SB02 @ 4'	ASTM D2974-87	PMST/4545		
30121605005	K SB03 @ 4'	ASTM D2974-87	PMST/4545		
30121605006	K SB04 @ 4'	ASTM D2974-87	PMST/4545		
30121605007	L SB01 @ 1.5'	ASTM D2974-87	PMST/4545		
30121605008	L SB01 @ 8'	ASTM D2974-87	PMST/4545		
30121605009	L SB02 @ 1.5'	ASTM D2974-87	PMST/4545		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Worcester Township

Pace Project No.: 30121605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30121605010	L SB02 @ 7'	ASTM D2974-87	PMST/4545		
30121605011	M SB01 @ 1.5'	ASTM D2974-87	PMST/4545		
30121605012	M SB01 @ 9.5'	ASTM D2974-87	PMST/4545		
30121605013	M SB02 @ 1.5'	ASTM D2974-87	PMST/4545		
30121605014	M SB02 @ 9.5'	ASTM D2974-87	PMST/4545		
30121605015	M SB03 @ 1.5'	ASTM D2974-87	PMST/4545		
30121605016	M SB03 @ 9.0'	ASTM D2974-87	PMST/4546		
30121605017	M SB04 @ 1.5'	ASTM D2974-87	PMST/4546		
30121605018	M SB04 @ 9.5'	ASTM D2974-87	PMST/4546		
30121605019	O 01 SB01 @ 10'	ASTM D2974-87	PMST/4546		
30121605020	O 01 SB02 @ 10'	ASTM D2974-87	PMST/4546		
30121605021	O 01 SB03 @ 10'	ASTM D2974-87	PMST/4546		
30121605022	O 01 SB04 @ 10'	ASTM D2974-87	PMST/4546		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Environmental Standards	Report To:	Joe Kravcik	Attention:	Joe Kravcik
Address:	1140 Valley Forge Road Valley Forge, PA	Copy To:		Company Name:	Environmental Standards
Email To:	jkravcik@envstd.com	Purchase Order No.:		Address:	Same
Phone:	610.935.5577	Project Name:	Worcester Township	Pace Quote Reference:	
Requested Due Date/TAT:	Std TAT	Project Number:	20146456.A	Pace Project Manager:	
				Pace Profile #:	

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIFE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER:	SIGNATURE of SAMPLER:	DATE Signed (MM/DD/YYYY):	
		COMPOSITE START	COMPOSITE END/GRAB																	
1	O 09 SS01 @ 6"			G	SL	05/27/14	1255													
2	E SB01 @ 10'			G	SL	05/27/14	1300													
3	K SBO1 @ 4'			G	SL	05/27/14	0855													
4	K SBO2 @ 4'			G	SL	05/27/14	0850													
5	K SBO3 @ 4'			G	SL	05/27/14	0910													
6	K SBO4 @ 4'			G	SL	05/27/14	0905													
7	L SB01 @ 1.5'			G	SL	05/27/14	1215													
8	L SB01 @ 8'			G	SL	05/27/14	1220													
9	L SB02 @ 1.5'			G	SL	05/27/14	1230													
10	L SB02 @ 7'			G	SL	05/27/14	1235													
11	M SB01 @ 1.5'			G	SL	05/27/14	1105													
12	M SB01 @ 9.5'			G	SL	05/27/14	1110													

Section D		
Requested Client Information	Requested Analysis Filtered (Y/N)	
<p>SAMPLE ID (A-Z, 0-9 / -)</p> <p>Sample IDs MUST BE UNIQUE</p>	<input type="checkbox"/> PA DEP short list #2 Fuel diesel <input type="checkbox"/> Combined PA DEP short list Oils <input type="checkbox"/> Vanadium <input type="checkbox"/> PPL SVOC <input type="checkbox"/> PPL Metals + barium and vanadium <input type="checkbox"/> DRO <input type="checkbox"/> 1,4 Dioxane <input type="checkbox"/> Perchlorates	
	Preservatives	
	<input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> HNO ₃ <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> Na ₂ S ₂ O ₃ <input type="checkbox"/> Methanol <input type="checkbox"/> Other	
	# OF CONTAINERS	
	SAMPLE TEMP AT COLLECTION	
	DATE	TIME

F-ALL-Q-020rev.06, 2-Feb-2007

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition Upon Receipt

Client Name: Environmental Standards

Project # 30121605

Courier: [X] Fed Ex [] UPS [] USPS [] Client [] Commercial [] Pace Other

Tracking #: 802475455836

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: [] yes [X] no Seals intact: [] yes [] no

Packing Material: [] Bubble Wrap [] Bubble Bags [] None [X] Other foam

Thermometer Used 6 7 8

Type of Ice: [X] Wet Blue None

[X] Samples on ice, cooling process has begun

Cooler Temperature 0.9, 1.8

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SPA 5-29-14

Temp should be above freezing to 6°C

Comments:

Table with 16 rows of inspection criteria and checkboxes. Includes items like Chain of Custody Present, Short Hold Time Analysis, and Containers Intact.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review:

Date: 5-30-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)



Project Number:

Client Name: Environ Mental Standards

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubtainer (500 ml / 4L)	Ziploc	Other	Other
100	15	1	3																					
200	15		3																					
220	15	1	3																					
230	15	1	3																					

APPENDIX A-2
Groundwater Analytical Data Reports



July 15, 2014

Mark Haslett
Environmental Standards, Inc.
1140 valley Forge Rd
PO Box 810
Valley Forge, PA 19482

RE: Project: Worcester Township
Pace Project No.: 30123439

Dear Mark Haslett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised July 15, 2014, to include qualifiers and MDLs in the sample results.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



David A. Pichette
david.pichette@pacelabs.com
Project Manager

Enclosures

cc: Joe Kraycik, Environmental Standards, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Worcester Township

Pace Project No.: 30123439

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601

AClass DOD-ELAP Accreditation #: ADE-1544

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California/TNI Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Guam/PADEP Certification

Hawaii/PADEP Certification

Idaho Certification

Illinois/PADEP Certification

Indiana/PADEP Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188

Utah/TNI Certification #: PA014572014-4

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin/PADEP Certification

Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Worcester Township

Pace Project No.: 30123439

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30123439001	MW-1	Water	06/19/14 13:35	06/24/14 10:00
30123439002	MW-2	Water	06/19/14 16:40	06/24/14 10:00
30123439003	MW-3	Water	06/19/14 12:45	06/24/14 10:00
30123439004	MW-4	Water	06/19/14 15:20	06/24/14 10:00
30123439005	MW-5	Water	06/19/14 10:25	06/24/14 10:00
30123439006	Potable Well	Water	06/19/14 08:50	06/24/14 10:00
30123439007	Trip Blank	Water	06/19/14 00:01	06/24/14 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Worcester Township

Pace Project No.: 30123439

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30123439001	MW-1	EPA 8015B	SJG	2
		EPA 8082	SJG	9
		EPA 6010B	RTW	14
		EPA 7470A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JAS	32
30123439002	MW-2	EPA 8011	CWB	2
		EPA 8082	SJG	9
		EPA 6010B	RTW	1
		EPA 8270C by SIM	JSH	10
		EPA 8260B	DJL	13
30123439003	MW-3	EPA 8082	SJG	9
		EPA 6010B	RTW	1
		EPA 8270C by SIM	JSH	10
		EPA 8260B	DJL	11
30123439004	MW-4	EPA 6010B	RTW	14
		EPA 7470A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JAS	32
30123439005	MW-5	EPA 8015B	SJG	2
		EPA 8082	SJG	9
		EPA 6010B	RTW	14
		EPA 7470A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	DJL	32
30123439006	Potable Well	EPA 6010B	RTW	14
		EPA 7470A	CTS	1
		EPA 8270C	HEK	64
		EPA 8260B	JAS	32
30123439007	Trip Blank	EPA 8011	CWB	2
		EPA 8260B	DJL	13

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township
Pace Project No.: 30123439

Method: EPA 8011
Description: 8011 GCS EDB and DBCP
Client: Environmental Standards, Inc.
Date: July 15, 2014

General Information:

2 samples were analyzed for EPA 8011. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 8011 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 8015B

Description: 8015 TPH

Client: Environmental Standards, Inc.

Date: July 15, 2014

General Information:

2 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 8015B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/6902

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/19770

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 748683)
 - TPH (C10-C28)
 - o-Terphenyl (S)
- LCS (Lab ID: 748684)
 - TPH (C10-C28)
 - o-Terphenyl (S)
- MW-1 (Lab ID: 30123439001)
 - TPH (C10-C28)
 - o-Terphenyl (S)

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 8015B

Description: 8015 TPH

Client: Environmental Standards, Inc.

Date: July 15, 2014

Analyte Comments:

QC Batch: OEXT/19770

N2: The lab does not hold TNI accreditation for this parameter.

- MW-5 (Lab ID: 30123439005)
 - TPH (C10-C28)
 - o-Terphenyl (S)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township
Pace Project No.: 30123439

Method: EPA 8082
Description: 8082 GCS PCB
Client: Environmental Standards, Inc.
Date: July 15, 2014

General Information:

4 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/6931

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 6010B

Description: 6010 MET ICP,Dissolved

Client: Environmental Standards, Inc.

Date: July 15, 2014

General Information:

6 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 7470A

Description: 7470 Mercury, Dissolved

Client: Environmental Standards, Inc.

Date: July 15, 2014

General Information:

4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 8270C by SIM

Description: 8270 MSSV PAH by SIM

Client: Environmental Standards, Inc.

Date: July 15, 2014

General Information:

2 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: OEXT/19772

B: Analyte was detected in the associated method blank.

- BLANK for HBN 152830 [OEXT/197 (Lab ID: 748687)
- Phenanthrene

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSSV/6498

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 8270C

Description: 8270 MSSV Semivolatile Organic

Client: Environmental Standards, Inc.

Date: July 15, 2014

General Information:

4 samples were analyzed for EPA 8270C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: OEXT/19769

B: Analyte was detected in the associated method blank.

- BLANK for HBN 152827 [OEXT/197 (Lab ID: 748681)
- bis(2-Ethylhexyl)phthalate

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSSV/6516

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township
Pace Project No.: 30123439

Method: EPA 8270C
Description: 8270 MSSV Semivolatile Organic
Client: Environmental Standards, Inc.
Date: July 15, 2014

Analyte Comments:

QC Batch: OEXT/19769

1c: Analyte was detected in the associated method blank. No sample volume remains for re-extraction.

- MW-4 (Lab ID: 30123439004)
 - bis(2-Ethylhexyl)phthalate
- MW-5 (Lab ID: 30123439005)
 - bis(2-Ethylhexyl)phthalate

2c: The bis(2-ethylhexyl)phthalate in this sample is believed to be laboratory contamination. The sample was re-extracted out of hold and did not have bis(2-ethylhexyl)phthalate in it. Results are reported from the original in hold sample extract.

- MW-1 (Lab ID: 30123439001)
 - bis(2-Ethylhexyl)phthalate
- Potable Well (Lab ID: 30123439006)
 - bis(2-Ethylhexyl)phthalate

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 748681)
 - Azobenzene
- LCS (Lab ID: 748682)
 - Azobenzene
- MW-1 (Lab ID: 30123439001)
 - Azobenzene
- MW-4 (Lab ID: 30123439004)
 - Azobenzene
- MW-5 (Lab ID: 30123439005)
 - Azobenzene
- Potable Well (Lab ID: 30123439006)
 - Azobenzene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township
Pace Project No.: 30123439

Method: EPA 8260B
Description: 8260 MSV
Client: Environmental Standards, Inc.
Date: July 15, 2014

General Information:

4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/20105

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30123129002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MSD (Lab ID: 750478)
 - Tetrachloroethene

R1: RPD value was outside control limits.

- MS (Lab ID: 750477)
 - Bromomethane
- MSD (Lab ID: 750478)
 - Bromomethane

Additional Comments:

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PROJECT NARRATIVE

Project: Worcester Township

Pace Project No.: 30123439

Method: EPA 8260B

Description: 8260 MSV

Client: Environmental Standards, Inc.

Date: July 15, 2014

Analyte Comments:

QC Batch: MSV/20105

C9: Common Laboratory Contaminant.

- BLANK (Lab ID: 750475)
- Methylene Chloride

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Worcester Township
Pace Project No.: 30123439

Method: EPA 8260B
Description: 8260 MSV PA UST
Client: Environmental Standards, Inc.
Date: July 15, 2014

General Information:

3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30123439

Sample: MW-1 Lab ID: 30123439001 Collected: 06/19/14 13:35 Received: 06/24/14 10:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Analytical Method: EPA 8015B Preparation Method: EPA 8015B									
TPH (C10-C28)	0.14	mg/L	0.10	0.013	1	06/26/14 16:10	07/05/14 01:18		N2
Surrogates									
o-Terphenyl (S)	57 %		42-125		1	06/26/14 16:10	07/05/14 01:18	84-15-1	N2
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3510C									
PCB-1016 (Aroclor 1016)	0.26 U	ug/L	0.26	0.079	1	07/07/14 17:45	07/08/14 20:44	12674-11-2	
PCB-1221 (Aroclor 1221)	0.26 U	ug/L	0.26	0.094	1	07/07/14 17:45	07/08/14 20:44	11104-28-2	
PCB-1232 (Aroclor 1232)	0.26 U	ug/L	0.26	0.075	1	07/07/14 17:45	07/08/14 20:44	11141-16-5	
PCB-1242 (Aroclor 1242)	0.26 U	ug/L	0.26	0.033	1	07/07/14 17:45	07/08/14 20:44	53469-21-9	
PCB-1248 (Aroclor 1248)	0.26 U	ug/L	0.26	0.024	1	07/07/14 17:45	07/08/14 20:44	12672-29-6	
PCB-1254 (Aroclor 1254)	0.26 U	ug/L	0.26	0.038	1	07/07/14 17:45	07/08/14 20:44	11097-69-1	
PCB-1260 (Aroclor 1260)	0.26 U	ug/L	0.26	0.032	1	07/07/14 17:45	07/08/14 20:44	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	70 %		51-99		1	07/07/14 17:45	07/08/14 20:44	877-09-8	
Decachlorobiphenyl (S)	56 %		30-127		1	07/07/14 17:45	07/08/14 20:44	2051-24-3	
6010 MET ICP,Dissolved Analytical Method: EPA 6010B Preparation Method: EPA 3005A									
Antimony, Dissolved	6.0 U	ug/L	6.0	3.9	1	06/26/14 17:40	06/27/14 20:10	7440-36-0	
Arsenic, Dissolved	5.0 U	ug/L	5.0	3.6	1	06/26/14 17:40	06/27/14 20:10	7440-38-2	
Barium, Dissolved	84.1	ug/L	10.0	0.39	1	06/26/14 17:40	06/27/14 20:10	7440-39-3	
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.32	1	06/26/14 17:40	06/27/14 20:10	7440-41-7	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.44	1	06/26/14 17:40	06/27/14 20:10	7440-43-9	
Chromium, Dissolved	1.0J	ug/L	5.0	0.93	1	06/26/14 17:40	06/27/14 20:10	7440-47-3	
Copper, Dissolved	5.0 U	ug/L	5.0	1.9	1	06/26/14 17:40	06/27/14 20:10	7440-50-8	
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:10	7439-92-1	
Nickel, Dissolved	4.5J	ug/L	10.0	0.88	1	06/26/14 17:40	06/27/14 20:10	7440-02-0	
Selenium, Dissolved	8.0 U	ug/L	8.0	5.8	1	06/26/14 17:40	06/27/14 20:10	7782-49-2	
Silver, Dissolved	6.0 U	ug/L	6.0	0.53	1	06/26/14 17:40	06/27/14 20:10	7440-22-4	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.1	1	06/26/14 17:40	06/27/14 20:10	7440-28-0	
Vanadium, Dissolved	5.0 U	ug/L	5.0	0.50	1	06/26/14 17:40	06/27/14 20:10	7440-62-2	
Zinc, Dissolved	1.8J	ug/L	10.0	1.2	1	06/26/14 17:40	06/27/14 20:10	7440-66-6	
7470 Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	0.20 U	ug/L	0.20	0.025	1	07/01/14 14:09	07/02/14 08:51	7439-97-6	
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270C Preparation Method: EPA 3510C									
Acenaphthene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 16:41	83-32-9	
Acenaphthylene	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 16:41	208-96-8	
Anthracene	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 16:41	120-12-7	
Azobenzene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	103-33-3	N2
Benzidine	102 U	ug/L	102	102	1	06/26/14 10:15	07/07/14 16:41	92-87-5	
Benzo(a)anthracene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	56-55-3	
Benzo(a)pyrene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	50-32-8	
Benzo(b)fluoranthene	1.0 U	ug/L	1.0	0.19	1	06/26/14 10:15	07/07/14 16:41	205-99-2	
Benzo(g,h,i)perylene	1.0 U	ug/L	1.0	0.39	1	06/26/14 10:15	07/07/14 16:41	191-24-2	
Benzo(k)fluoranthene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	207-08-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-1 **Lab ID: 30123439001** Collected: 06/19/14 13:35 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic			Analytical Method: EPA 8270C Preparation Method: EPA 3510C						
4-Bromophenylphenyl ether	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 16:41	101-55-3	
Butylbenzylphthalate	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 16:41	85-68-7	
bis(2-Chloroethoxy)methane	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	111-91-1	
bis(2-Chloroethyl) ether	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 16:41	111-44-4	
bis(2-Chloroisopropyl) ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	108-60-1	
2-Chloronaphthalene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 16:41	91-58-7	
2-Chlorophenol	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 16:41	95-57-8	
4-Chlorophenylphenyl ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	7005-72-3	
Chrysene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	218-01-9	
Dibenz(a,h)anthracene	1.0 U	ug/L	1.0	0.46	1	06/26/14 10:15	07/07/14 16:41	53-70-3	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 16:41	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 16:41	106-46-7	
3,3'-Dichlorobenzidine	1.0 U	ug/L	1.0	0.31	1	06/26/14 10:15	07/07/14 16:41	91-94-1	
2,4-Dichlorophenol	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	120-83-2	
Diethylphthalate	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 16:41	84-66-2	
2,4-Dimethylphenol	1.0 U	ug/L	1.0	0.33	1	06/26/14 10:15	07/07/14 16:41	105-67-9	
Dimethylphthalate	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 16:41	131-11-3	
Di-n-butylphthalate	1.0 U	ug/L	1.0	0.39	1	06/26/14 10:15	07/07/14 16:41	84-74-2	
4,6-Dinitro-2-methylphenol	2.5 U	ug/L	2.5	0.26	1	06/26/14 10:15	07/07/14 16:41	534-52-1	
2,4-Dinitrophenol	2.5 U	ug/L	2.5	1.0	1	06/26/14 10:15	07/07/14 16:41	51-28-5	
2,4-Dinitrotoluene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 16:41	121-14-2	
2,6-Dinitrotoluene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 16:41	606-20-2	
Di-n-octylphthalate	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 16:41	117-84-0	
bis(2-Ethylhexyl)phthalate	1.6	ug/L	1.0	0.44	1	06/26/14 10:15	07/07/14 16:41	117-81-7	2c, B
Fluoranthene	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 16:41	206-44-0	
Fluorene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 16:41	86-73-7	
Hexachloro-1,3-butadiene	1.0 U	ug/L	1.0	0.33	1	06/26/14 10:15	07/07/14 16:41	87-68-3	
Hexachlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 16:41	118-74-1	
Hexachlorocyclopentadiene	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 16:41	77-47-4	
Hexachloroethane	1.0 U	ug/L	1.0	0.31	1	06/26/14 10:15	07/07/14 16:41	67-72-1	
Indeno(1,2,3-cd)pyrene	1.0 U	ug/L	1.0	0.49	1	06/26/14 10:15	07/07/14 16:41	193-39-5	
Isophorone	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 16:41	78-59-1	
2-Methylphenol(o-Cresol)	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 16:41	95-48-7	
3&4-Methylphenol(m&p Cresol)	2.0 U	ug/L	2.0	0.71	1	06/26/14 10:15	07/07/14 16:41		
Naphthalene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 16:41	91-20-3	
Nitrobenzene	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 16:41	98-95-3	
2-Nitrophenol	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 16:41	88-75-5	
4-Nitrophenol	1.0 U	ug/L	1.0	0.39	1	06/26/14 10:15	07/07/14 16:41	100-02-7	
N-Nitrosodimethylamine	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 16:41	62-75-9	
N-Nitroso-di-n-propylamine	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 16:41	621-64-7	
N-Nitrosodiphenylamine	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 16:41	86-30-6	
Pentachlorophenol	2.5 U	ug/L	2.5	0.29	1	06/26/14 10:15	07/07/14 16:41	87-86-5	
Phenanthrene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 16:41	85-01-8	
Phenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 16:41	108-95-2	
Pyrene	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 16:41	129-00-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-1 **Lab ID: 30123439001** Collected: 06/19/14 13:35 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic			Analytical Method: EPA 8270C Preparation Method: EPA 3510C						
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 16:41	120-82-1	
2,4,6-Trichlorophenol	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 16:41	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	74 %		14-104		1	06/26/14 10:15	07/07/14 16:41	4165-60-0	
2-Fluorobiphenyl (S)	78 %		13-109		1	06/26/14 10:15	07/07/14 16:41	321-60-8	
Terphenyl-d14 (S)	91 %		23-141		1	06/26/14 10:15	07/07/14 16:41	1718-51-0	
Phenol-d6 (S)	28 %		10-110		1	06/26/14 10:15	07/07/14 16:41	13127-88-3	
2-Fluorophenol (S)	44 %		21-110		1	06/26/14 10:15	07/07/14 16:41	367-12-4	
2,4,6-Tribromophenol (S)	100 %		17-103		1	06/26/14 10:15	07/07/14 16:41	118-79-6	
8260 MSV			Analytical Method: EPA 8260B						
Acrolein	2.0 U	ug/L	2.0	1.7	1		06/30/14 23:05	107-02-8	
Acrylonitrile	2.0 U	ug/L	2.0	1.6	1		06/30/14 23:05	107-13-1	
Benzene	1.0 U	ug/L	1.0	0.065	1		06/30/14 23:05	71-43-2	
Bromodichloromethane	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:05	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.25	1		06/30/14 23:05	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.37	1		06/30/14 23:05	74-83-9	
Carbon tetrachloride	1.0 U	ug/L	1.0	0.24	1		06/30/14 23:05	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:05	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.48	1		06/30/14 23:05	75-00-3	
2-Chloroethylvinyl ether	2.0 U	ug/L	2.0	2.0	1		06/30/14 23:05	110-75-8	
Chloroform	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:05	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.21	1		06/30/14 23:05	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:05	124-48-1	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:05	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:05	107-06-2	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:05	75-35-4	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		06/30/14 23:05	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:05	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:05	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:05	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:05	100-41-4	
Methylene Chloride	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:05	75-09-2	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:05	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:05	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.11	1		06/30/14 23:05	108-88-3	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:05	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:05	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:05	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.13	1		06/30/14 23:05	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100 %		85-115		1		06/30/14 23:05	460-00-4	
1,2-Dichloroethane-d4 (S)	102 %		77-119		1		06/30/14 23:05	17060-07-0	
Toluene-d8 (S)	98 %		85-115		1		06/30/14 23:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30123439

Sample: MW-2		Lab ID: 30123439002		Collected: 06/19/14 16:40		Received: 06/24/14 10:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP		Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	0.040 U	ug/L	0.040	0.014	1	06/27/14 11:06	06/27/14 20:53	106-93-4	
Surrogates									
1,1,1,2-Tetrachloroethane	83 %		60-140		1	06/27/14 11:06	06/27/14 20:53	630-20-6	
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3510C							
PCB-1016 (Aroclor 1016)	0.26 U	ug/L	0.26	0.077	1	07/07/14 17:45	07/08/14 20:52	12674-11-2	
PCB-1221 (Aroclor 1221)	0.26 U	ug/L	0.26	0.092	1	07/07/14 17:45	07/08/14 20:52	11104-28-2	
PCB-1232 (Aroclor 1232)	0.26 U	ug/L	0.26	0.073	1	07/07/14 17:45	07/08/14 20:52	11141-16-5	
PCB-1242 (Aroclor 1242)	0.26 U	ug/L	0.26	0.033	1	07/07/14 17:45	07/08/14 20:52	53469-21-9	
PCB-1248 (Aroclor 1248)	0.26 U	ug/L	0.26	0.024	1	07/07/14 17:45	07/08/14 20:52	12672-29-6	
PCB-1254 (Aroclor 1254)	0.26 U	ug/L	0.26	0.037	1	07/07/14 17:45	07/08/14 20:52	11097-69-1	
PCB-1260 (Aroclor 1260)	0.26 U	ug/L	0.26	0.031	1	07/07/14 17:45	07/08/14 20:52	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	73 %		51-99		1	07/07/14 17:45	07/08/14 20:52	877-09-8	
Decachlorobiphenyl (S)	56 %		30-127		1	07/07/14 17:45	07/08/14 20:52	2051-24-3	
6010 MET ICP,Dissolved		Analytical Method: EPA 6010B Preparation Method: EPA 3005A							
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:13	7439-92-1	
8270 MSSV PAH by SIM		Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C							
Benzo(a)anthracene	0.11 U	ug/L	0.11	0.0034	1	06/26/14 14:20	07/03/14 00:31	56-55-3	
Benzo(a)pyrene	0.11 U	ug/L	0.11	0.077	1	06/26/14 14:20	07/03/14 00:31	50-32-8	
Benzo(b)fluoranthene	0.11 U	ug/L	0.11	0.0038	1	06/26/14 14:20	07/03/14 00:31	205-99-2	
Benzo(g,h,i)perylene	0.11 U	ug/L	0.11	0.063	1	06/26/14 14:20	07/03/14 00:31	191-24-2	
Chrysene	0.11 U	ug/L	0.11	0.0018	1	06/26/14 14:20	07/03/14 00:31	218-01-9	
Indeno(1,2,3-cd)pyrene	0.11 U	ug/L	0.11	0.0033	1	06/26/14 14:20	07/03/14 00:31	193-39-5	
Phenanthrene	0.11 U	ug/L	0.11	0.018	1	06/26/14 14:20	07/03/14 00:31	85-01-8	B
Pyrene	0.11 U	ug/L	0.11	0.014	1	06/26/14 14:20	07/03/14 00:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72 %		15-107		1	06/26/14 14:20	07/03/14 00:31	321-60-8	
Terphenyl-d14 (S)	89 %		40-133		1	06/26/14 14:20	07/03/14 00:31	1718-51-0	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	1.0 U	ug/L	1.0	0.065	1		07/02/14 00:38	71-43-2	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		07/02/14 00:38	107-06-2	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:38	100-41-4	
Isopropylbenzene (Cumene)	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:38	98-82-8	
Methyl-tert-butyl ether	1.0 U	ug/L	1.0	0.19	1		07/02/14 00:38	1634-04-4	
Naphthalene	2.0 U	ug/L	2.0	0.33	1		07/02/14 00:38	91-20-3	
Toluene	1.0 U	ug/L	1.0	0.11	1		07/02/14 00:38	108-88-3	
1,2,4-Trimethylbenzene	1.0 U	ug/L	1.0	0.13	1		07/02/14 00:38	95-63-6	
1,3,5-Trimethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:38	108-67-8	
Xylene (Total)	3.0 U	ug/L	3.0	0.31	1		07/02/14 00:38	1330-20-7	
Surrogates									
Toluene-d8 (S)	93 %		85-115		1		07/02/14 00:38	2037-26-5	
4-Bromofluorobenzene (S)	100 %		85-115		1		07/02/14 00:38	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30123439

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-2		Lab ID: 30123439002		Collected: 06/19/14 16:40	Received: 06/24/14 10:00	Matrix: Water			
8260 MSV PA UST Analytical Method: EPA 8260B									
Surrogates									
1,2-Dichloroethane-d4 (S)	96 %		77-119		1		07/02/14 00:38	17060-07-0	

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-3		Lab ID: 30123439003		Collected: 06/19/14 12:45	Received: 06/24/14 10:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3510C							
PCB-1016 (Aroclor 1016)	0.26 U	ug/L	0.26	0.077	1	07/07/14 17:45	07/08/14 21:00	12674-11-2	
PCB-1221 (Aroclor 1221)	0.26 U	ug/L	0.26	0.091	1	07/07/14 17:45	07/08/14 21:00	11104-28-2	
PCB-1232 (Aroclor 1232)	0.26 U	ug/L	0.26	0.073	1	07/07/14 17:45	07/08/14 21:00	11141-16-5	
PCB-1242 (Aroclor 1242)	0.26 U	ug/L	0.26	0.033	1	07/07/14 17:45	07/08/14 21:00	53469-21-9	
PCB-1248 (Aroclor 1248)	0.26 U	ug/L	0.26	0.024	1	07/07/14 17:45	07/08/14 21:00	12672-29-6	
PCB-1254 (Aroclor 1254)	0.26 U	ug/L	0.26	0.037	1	07/07/14 17:45	07/08/14 21:00	11097-69-1	
PCB-1260 (Aroclor 1260)	0.26 U	ug/L	0.26	0.031	1	07/07/14 17:45	07/08/14 21:00	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	75 %		51-99		1	07/07/14 17:45	07/08/14 21:00	877-09-8	
Decachlorobiphenyl (S)	55 %		30-127		1	07/07/14 17:45	07/08/14 21:00	2051-24-3	
6010 MET ICP,Dissolved		Analytical Method: EPA 6010B Preparation Method: EPA 3005A							
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:17	7439-92-1	
8270 MSSV PAH by SIM		Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C							
Benzo(a)anthracene	0.10 U	ug/L	0.10	0.0034	1	06/26/14 14:20	07/03/14 00:49	56-55-3	
Benzo(a)pyrene	0.10 U	ug/L	0.10	0.076	1	06/26/14 14:20	07/03/14 00:49	50-32-8	
Benzo(b)fluoranthene	0.10 U	ug/L	0.10	0.0038	1	06/26/14 14:20	07/03/14 00:49	205-99-2	
Benzo(g,h,i)perylene	0.10 U	ug/L	0.10	0.063	1	06/26/14 14:20	07/03/14 00:49	191-24-2	
Chrysene	0.10 U	ug/L	0.10	0.0018	1	06/26/14 14:20	07/03/14 00:49	218-01-9	
Indeno(1,2,3-cd)pyrene	0.10 U	ug/L	0.10	0.0032	1	06/26/14 14:20	07/03/14 00:49	193-39-5	
Phenanthrene	0.10 U	ug/L	0.10	0.018	1	06/26/14 14:20	07/03/14 00:49	85-01-8	
Pyrene	0.10 U	ug/L	0.10	0.014	1	06/26/14 14:20	07/03/14 00:49	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	93 %		15-107		1	06/26/14 14:20	07/03/14 00:49	321-60-8	
Terphenyl-d14 (S)	94 %		40-133		1	06/26/14 14:20	07/03/14 00:49	1718-51-0	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	1.0 U	ug/L	1.0	0.065	1		07/02/14 00:13	71-43-2	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:13	100-41-4	
Isopropylbenzene (Cumene)	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:13	98-82-8	
Methyl-tert-butyl ether	1.0 U	ug/L	1.0	0.19	1		07/02/14 00:13	1634-04-4	
Naphthalene	2.0 U	ug/L	2.0	0.33	1		07/02/14 00:13	91-20-3	
Toluene	1.0 U	ug/L	1.0	0.11	1		07/02/14 00:13	108-88-3	
1,2,4-Trimethylbenzene	1.0 U	ug/L	1.0	0.13	1		07/02/14 00:13	95-63-6	
1,3,5-Trimethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/02/14 00:13	108-67-8	
Surrogates									
Toluene-d8 (S)	95 %		85-115		1		07/02/14 00:13	2037-26-5	
4-Bromofluorobenzene (S)	100 %		85-115		1		07/02/14 00:13	460-00-4	
1,2-Dichloroethane-d4 (S)	91 %		77-119		1		07/02/14 00:13	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-4 **Lab ID: 30123439004** Collected: 06/19/14 15:20 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP, Dissolved		Analytical Method: EPA 6010B Preparation Method: EPA 3005A							
Antimony, Dissolved	6.0 U	ug/L	6.0	3.9	1	06/26/14 17:40	06/27/14 20:20	7440-36-0	
Arsenic, Dissolved	5.0 U	ug/L	5.0	3.6	1	06/26/14 17:40	06/27/14 20:20	7440-38-2	
Barium, Dissolved	40.4	ug/L	10.0	0.39	1	06/26/14 17:40	06/27/14 20:20	7440-39-3	
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.32	1	06/26/14 17:40	06/27/14 20:20	7440-41-7	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.44	1	06/26/14 17:40	06/27/14 20:20	7440-43-9	
Chromium, Dissolved	1.3J	ug/L	5.0	0.93	1	06/26/14 17:40	06/27/14 20:20	7440-47-3	
Copper, Dissolved	5.0 U	ug/L	5.0	1.9	1	06/26/14 17:40	06/27/14 20:20	7440-50-8	
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:20	7439-92-1	
Nickel, Dissolved	1.2J	ug/L	10.0	0.88	1	06/26/14 17:40	06/27/14 20:20	7440-02-0	
Selenium, Dissolved	8.0 U	ug/L	8.0	5.8	1	06/26/14 17:40	06/27/14 20:20	7782-49-2	
Silver, Dissolved	0.88J	ug/L	6.0	0.53	1	06/26/14 17:40	06/27/14 20:20	7440-22-4	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.1	1	06/26/14 17:40	06/27/14 20:20	7440-28-0	
Vanadium, Dissolved	0.86J	ug/L	5.0	0.50	1	06/26/14 17:40	06/27/14 20:20	7440-62-2	
Zinc, Dissolved	1.2J	ug/L	10.0	1.2	1	06/26/14 17:40	06/27/14 20:20	7440-66-6	
7470 Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	0.20 U	ug/L	0.20	0.025	1	07/01/14 14:09	07/02/14 08:53	7439-97-6	
8270 MSSV Semivolatile Organic		Analytical Method: EPA 8270C Preparation Method: EPA 3510C							
Acenaphthene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:01	83-32-9	
Acenaphthylene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:01	208-96-8	
Anthracene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:01	120-12-7	
Azobenzene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:01	103-33-3	N2
Benidine	104 U	ug/L	104	104	1	06/26/14 10:15	07/07/14 17:01	92-87-5	
Benzo(a)anthracene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:01	56-55-3	
Benzo(a)pyrene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	50-32-8	
Benzo(b)fluoranthene	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 17:01	205-99-2	
Benzo(g,h,i)perylene	1.0 U	ug/L	1.0	0.41	1	06/26/14 10:15	07/07/14 17:01	191-24-2	
Benzo(k)fluoranthene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	207-08-9	
4-Bromophenylphenyl ether	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:01	101-55-3	
Butylbenzylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:01	85-68-7	
bis(2-Chloroethoxy)methane	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:01	111-91-1	
bis(2-Chloroethyl) ether	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:01	111-44-4	
bis(2-Chloroisopropyl) ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:01	108-60-1	
2-Chloronaphthalene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:01	91-58-7	
2-Chlorophenol	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 17:01	95-57-8	
4-Chlorophenylphenyl ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:01	7005-72-3	
Chrysene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:01	218-01-9	
Dibenz(a,h)anthracene	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 17:01	53-70-3	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:01	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:01	106-46-7	
3,3'-Dichlorobenzidine	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:01	91-94-1	
2,4-Dichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	120-83-2	
Diethylphthalate	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:01	84-66-2	
2,4-Dimethylphenol	1.0 U	ug/L	1.0	0.34	1	06/26/14 10:15	07/07/14 17:01	105-67-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-4 **Lab ID: 30123439004** Collected: 06/19/14 15:20 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270C Preparation Method: EPA 3510C									
Dimethylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:01	131-11-3	
Di-n-butylphthalate	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:01	84-74-2	
4,6-Dinitro-2-methylphenol	2.6 U	ug/L	2.6	0.26	1	06/26/14 10:15	07/07/14 17:01	534-52-1	
2,4-Dinitrophenol	2.6 U	ug/L	2.6	1.0	1	06/26/14 10:15	07/07/14 17:01	51-28-5	
2,4-Dinitrotoluene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:01	121-14-2	
2,6-Dinitrotoluene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:01	606-20-2	
Di-n-octylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:01	117-84-0	
bis(2-Ethylhexyl)phthalate	1.3	ug/L	1.0	0.45	1	06/26/14 10:15	07/07/14 17:01	117-81-7	1c
Fluoranthene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:01	206-44-0	
Fluorene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:01	86-73-7	
Hexachloro-1,3-butadiene	1.0 U	ug/L	1.0	0.34	1	06/26/14 10:15	07/07/14 17:01	87-68-3	
Hexachlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	118-74-1	
Hexachlorocyclopentadiene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:01	77-47-4	
Hexachloroethane	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:01	67-72-1	
Indeno(1,2,3-cd)pyrene	1.0 U	ug/L	1.0	0.50	1	06/26/14 10:15	07/07/14 17:01	193-39-5	
Isophorone	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:01	78-59-1	
2-Methylphenol(o-Cresol)	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:01	95-48-7	
3&4-Methylphenol(m&p Cresol)	2.1 U	ug/L	2.1	0.73	1	06/26/14 10:15	07/07/14 17:01		
Naphthalene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:01	91-20-3	
Nitrobenzene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:01	98-95-3	
2-Nitrophenol	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:01	88-75-5	
4-Nitrophenol	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:01	100-02-7	
N-Nitrosodimethylamine	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:01	62-75-9	
N-Nitroso-di-n-propylamine	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 17:01	621-64-7	
N-Nitrosodiphenylamine	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:01	86-30-6	
Pentachlorophenol	2.6 U	ug/L	2.6	0.29	1	06/26/14 10:15	07/07/14 17:01	87-86-5	
Phenanthrene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:01	85-01-8	
Phenol	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:01	108-95-2	
Pyrene	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:01	129-00-0	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:01	120-82-1	
2,4,6-Trichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:01	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	80 %		14-104		1	06/26/14 10:15	07/07/14 17:01	4165-60-0	
2-Fluorobiphenyl (S)	83 %		13-109		1	06/26/14 10:15	07/07/14 17:01	321-60-8	
Terphenyl-d14 (S)	88 %		23-141		1	06/26/14 10:15	07/07/14 17:01	1718-51-0	
Phenol-d6 (S)	30 %		10-110		1	06/26/14 10:15	07/07/14 17:01	13127-88-3	
2-Fluorophenol (S)	48 %		21-110		1	06/26/14 10:15	07/07/14 17:01	367-12-4	
2,4,6-Tribromophenol (S)	94 %		17-103		1	06/26/14 10:15	07/07/14 17:01	118-79-6	
8260 MSV Analytical Method: EPA 8260B									
Acrolein	2.0 U	ug/L	2.0	1.7	1		06/30/14 23:29	107-02-8	
Acrylonitrile	2.0 U	ug/L	2.0	1.6	1		06/30/14 23:29	107-13-1	
Benzene	1.0 U	ug/L	1.0	0.065	1		06/30/14 23:29	71-43-2	
Bromodichloromethane	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:29	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.25	1		06/30/14 23:29	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.37	1		06/30/14 23:29	74-83-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-4 **Lab ID: 30123439004** Collected: 06/19/14 15:20 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260 MSV									
Analytical Method: EPA 8260B									
Carbon tetrachloride	1.0 U	ug/L	1.0	0.24	1		06/30/14 23:29	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:29	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.48	1		06/30/14 23:29	75-00-3	
2-Chloroethylvinyl ether	2.0 U	ug/L	2.0	2.0	1		06/30/14 23:29	110-75-8	
Chloroform	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:29	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.21	1		06/30/14 23:29	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:29	124-48-1	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:29	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:29	107-06-2	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:29	75-35-4	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		06/30/14 23:29	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:29	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:29	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:29	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:29	100-41-4	
Methylene Chloride	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:29	75-09-2	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:29	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:29	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.11	1		06/30/14 23:29	108-88-3	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:29	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:29	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:29	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.13	1		06/30/14 23:29	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102 %		85-115		1		06/30/14 23:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102 %		77-119		1		06/30/14 23:29	17060-07-0	
Toluene-d8 (S)	101 %		85-115		1		06/30/14 23:29	2037-26-5	

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ANALYTICAL RESULTS

Project: Worcester Township
Pace Project No.: 30123439

Sample: MW-5 Lab ID: 30123439005 Collected: 06/19/14 10:25 Received: 06/24/14 10:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Analytical Method: EPA 8015B Preparation Method: EPA 8015B									
TPH (C10-C28)	0.046J	mg/L	0.10	0.013	1	06/26/14 16:10	07/05/14 01:27		N2
Surrogates									
o-Terphenyl (S)	74 %		42-125		1	06/26/14 16:10	07/05/14 01:27	84-15-1	N2
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3510C									
PCB-1016 (Aroclor 1016)	0.26 U	ug/L	0.26	0.077	1	07/07/14 17:45	07/08/14 21:08	12674-11-2	
PCB-1221 (Aroclor 1221)	0.26 U	ug/L	0.26	0.092	1	07/07/14 17:45	07/08/14 21:08	11104-28-2	
PCB-1232 (Aroclor 1232)	0.26 U	ug/L	0.26	0.074	1	07/07/14 17:45	07/08/14 21:08	11141-16-5	
PCB-1242 (Aroclor 1242)	0.26 U	ug/L	0.26	0.033	1	07/07/14 17:45	07/08/14 21:08	53469-21-9	
PCB-1248 (Aroclor 1248)	0.26 U	ug/L	0.26	0.024	1	07/07/14 17:45	07/08/14 21:08	12672-29-6	
PCB-1254 (Aroclor 1254)	0.26 U	ug/L	0.26	0.037	1	07/07/14 17:45	07/08/14 21:08	11097-69-1	
PCB-1260 (Aroclor 1260)	0.26 U	ug/L	0.26	0.032	1	07/07/14 17:45	07/08/14 21:08	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	76 %		51-99		1	07/07/14 17:45	07/08/14 21:08	877-09-8	
Decachlorobiphenyl (S)	63 %		30-127		1	07/07/14 17:45	07/08/14 21:08	2051-24-3	
6010 MET ICP,Dissolved Analytical Method: EPA 6010B Preparation Method: EPA 3005A									
Antimony, Dissolved	6.0 U	ug/L	6.0	3.9	1	06/26/14 17:40	06/27/14 20:24	7440-36-0	
Arsenic, Dissolved	5.0 U	ug/L	5.0	3.6	1	06/26/14 17:40	06/27/14 20:24	7440-38-2	
Barium, Dissolved	77.5	ug/L	10.0	0.39	1	06/26/14 17:40	06/27/14 20:24	7440-39-3	
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.32	1	06/26/14 17:40	06/27/14 20:24	7440-41-7	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.44	1	06/26/14 17:40	06/27/14 20:24	7440-43-9	
Chromium, Dissolved	1.5J	ug/L	5.0	0.93	1	06/26/14 17:40	06/27/14 20:24	7440-47-3	
Copper, Dissolved	5.0 U	ug/L	5.0	1.9	1	06/26/14 17:40	06/27/14 20:24	7440-50-8	
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:24	7439-92-1	
Nickel, Dissolved	1.0J	ug/L	10.0	0.88	1	06/26/14 17:40	06/27/14 20:24	7440-02-0	
Selenium, Dissolved	8.0 U	ug/L	8.0	5.8	1	06/26/14 17:40	06/27/14 20:24	7782-49-2	
Silver, Dissolved	6.0 U	ug/L	6.0	0.53	1	06/26/14 17:40	06/27/14 20:24	7440-22-4	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.1	1	06/26/14 17:40	06/27/14 20:24	7440-28-0	
Vanadium, Dissolved	1.0J	ug/L	5.0	0.50	1	06/26/14 17:40	06/27/14 20:24	7440-62-2	
Zinc, Dissolved	10.0 U	ug/L	10.0	1.2	1	06/26/14 17:40	06/27/14 20:24	7440-66-6	
7470 Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	0.20 U	ug/L	0.20	0.025	1	07/01/14 14:09	07/02/14 08:54	7439-97-6	
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270C Preparation Method: EPA 3510C									
Acenaphthene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	83-32-9	
Acenaphthylene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	208-96-8	
Anthracene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	120-12-7	
Azobenzene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:21	103-33-3	N2
Benzidine	104 U	ug/L	104	104	1	06/26/14 10:15	07/07/14 17:21	92-87-5	
Benzo(a)anthracene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:21	56-55-3	
Benzo(a)pyrene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	50-32-8	
Benzo(b)fluoranthene	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 17:21	205-99-2	
Benzo(g,h,i)perylene	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:21	191-24-2	
Benzo(k)fluoranthene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	207-08-9	

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-5 **Lab ID: 30123439005** Collected: 06/19/14 10:25 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270C Preparation Method: EPA 3510C									
4-Bromophenylphenyl ether	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	101-55-3	
Butylbenzylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:21	85-68-7	
bis(2-Chloroethoxy)methane	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:21	111-91-1	
bis(2-Chloroethyl) ether	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:21	111-44-4	
bis(2-Chloroisopropyl) ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:21	108-60-1	
2-Chloronaphthalene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:21	91-58-7	
2-Chlorophenol	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	95-57-8	
4-Chlorophenylphenyl ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:21	7005-72-3	
Chrysene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:21	218-01-9	
Dibenz(a,h)anthracene	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 17:21	53-70-3	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:21	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:21	106-46-7	
3,3'-Dichlorobenzidine	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:21	91-94-1	
2,4-Dichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	120-83-2	
Diethylphthalate	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:21	84-66-2	
2,4-Dimethylphenol	1.0 U	ug/L	1.0	0.33	1	06/26/14 10:15	07/07/14 17:21	105-67-9	
Dimethylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:21	131-11-3	
Di-n-butylphthalate	1.0 U	ug/L	1.0	0.39	1	06/26/14 10:15	07/07/14 17:21	84-74-2	
4,6-Dinitro-2-methylphenol	2.6 U	ug/L	2.6	0.26	1	06/26/14 10:15	07/07/14 17:21	534-52-1	
2,4-Dinitrophenol	2.6 U	ug/L	2.6	1.0	1	06/26/14 10:15	07/07/14 17:21	51-28-5	
2,4-Dinitrotoluene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:21	121-14-2	
2,6-Dinitrotoluene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	606-20-2	
Di-n-octylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:21	117-84-0	
bis(2-Ethylhexyl)phthalate	1.1	ug/L	1.0	0.45	1	06/26/14 10:15	07/07/14 17:21	117-81-7	1c
Fluoranthene	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 17:21	206-44-0	
Fluorene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	86-73-7	
Hexachloro-1,3-butadiene	1.0 U	ug/L	1.0	0.34	1	06/26/14 10:15	07/07/14 17:21	87-68-3	
Hexachlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	118-74-1	
Hexachlorocyclopentadiene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:21	77-47-4	
Hexachloroethane	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:21	67-72-1	
Indeno(1,2,3-cd)pyrene	1.0 U	ug/L	1.0	0.50	1	06/26/14 10:15	07/07/14 17:21	193-39-5	
Isophorone	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	78-59-1	
2-Methylphenol(o-Cresol)	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	95-48-7	
3&4-Methylphenol(m&p Cresol)	2.1 U	ug/L	2.1	0.73	1	06/26/14 10:15	07/07/14 17:21		
Naphthalene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:21	91-20-3	
Nitrobenzene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:21	98-95-3	
2-Nitrophenol	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	88-75-5	
4-Nitrophenol	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:21	100-02-7	
N-Nitrosodimethylamine	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:21	62-75-9	
N-Nitroso-di-n-propylamine	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:21	621-64-7	
N-Nitrosodiphenylamine	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:21	86-30-6	
Pentachlorophenol	2.6 U	ug/L	2.6	0.29	1	06/26/14 10:15	07/07/14 17:21	87-86-5	
Phenanthrene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:21	85-01-8	
Phenol	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:21	108-95-2	
Pyrene	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:21	129-00-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: MW-5 **Lab ID: 30123439005** Collected: 06/19/14 10:25 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic			Analytical Method: EPA 8270C Preparation Method: EPA 3510C						
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:21	120-82-1	
2,4,6-Trichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:21	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	66 %		14-104		1	06/26/14 10:15	07/07/14 17:21	4165-60-0	
2-Fluorobiphenyl (S)	67 %		13-109		1	06/26/14 10:15	07/07/14 17:21	321-60-8	
Terphenyl-d14 (S)	83 %		23-141		1	06/26/14 10:15	07/07/14 17:21	1718-51-0	
Phenol-d6 (S)	25 %		10-110		1	06/26/14 10:15	07/07/14 17:21	13127-88-3	
2-Fluorophenol (S)	39 %		21-110		1	06/26/14 10:15	07/07/14 17:21	367-12-4	
2,4,6-Tribromophenol (S)	84 %		17-103		1	06/26/14 10:15	07/07/14 17:21	118-79-6	
8260 MSV			Analytical Method: EPA 8260B						
Acrolein	2.0 U	ug/L	2.0	1.7	1		06/30/14 23:54	107-02-8	
Acrylonitrile	2.0 U	ug/L	2.0	1.6	1		06/30/14 23:54	107-13-1	
Benzene	1.0 U	ug/L	1.0	0.065	1		06/30/14 23:54	71-43-2	
Bromodichloromethane	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:54	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.25	1		06/30/14 23:54	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.37	1		06/30/14 23:54	74-83-9	
Carbon tetrachloride	1.0 U	ug/L	1.0	0.24	1		06/30/14 23:54	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:54	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.48	1		06/30/14 23:54	75-00-3	
2-Chloroethylvinyl ether	2.0 U	ug/L	2.0	2.0	1		06/30/14 23:54	110-75-8	
Chloroform	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:54	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.21	1		06/30/14 23:54	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:54	124-48-1	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.16	1		06/30/14 23:54	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:54	107-06-2	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.14	1		06/30/14 23:54	75-35-4	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		06/30/14 23:54	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:54	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:54	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:54	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:54	100-41-4	
Methylene Chloride	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:54	75-09-2	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 23:54	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.12	1		06/30/14 23:54	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.11	1		06/30/14 23:54	108-88-3	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.19	1		06/30/14 23:54	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.23	1		06/30/14 23:54	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.15	1		06/30/14 23:54	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.13	1		06/30/14 23:54	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	98 %		85-115		1		06/30/14 23:54	460-00-4	
1,2-Dichloroethane-d4 (S)	101 %		77-119		1		06/30/14 23:54	17060-07-0	
Toluene-d8 (S)	100 %		85-115		1		06/30/14 23:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: Potable Well		Lab ID: 30123439006	Collected: 06/19/14 08:50	Received: 06/24/14 10:00	Matrix: Water					
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010 MET ICP, Dissolved		Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Antimony, Dissolved	6.0 U	ug/L	6.0	3.9	1	06/26/14 17:40	06/27/14 20:27	7440-36-0		
Arsenic, Dissolved	5.0 U	ug/L	5.0	3.6	1	06/26/14 17:40	06/27/14 20:27	7440-38-2		
Barium, Dissolved	70.5	ug/L	10.0	0.39	1	06/26/14 17:40	06/27/14 20:27	7440-39-3		
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.32	1	06/26/14 17:40	06/27/14 20:27	7440-41-7		
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.44	1	06/26/14 17:40	06/27/14 20:27	7440-43-9		
Chromium, Dissolved	1.1J	ug/L	5.0	0.93	1	06/26/14 17:40	06/27/14 20:27	7440-47-3		
Copper, Dissolved	6.8	ug/L	5.0	1.9	1	06/26/14 17:40	06/27/14 20:27	7440-50-8		
Lead, Dissolved	5.0 U	ug/L	5.0	3.7	1	06/26/14 17:40	06/27/14 20:27	7439-92-1		
Nickel, Dissolved	10.0 U	ug/L	10.0	0.88	1	06/26/14 17:40	06/27/14 20:27	7440-02-0		
Selenium, Dissolved	8.0 U	ug/L	8.0	5.8	1	06/26/14 17:40	06/27/14 20:27	7782-49-2		
Silver, Dissolved	6.0 U	ug/L	6.0	0.53	1	06/26/14 17:40	06/27/14 20:27	7440-22-4		
Thallium, Dissolved	10.0 U	ug/L	10.0	2.1	1	06/26/14 17:40	06/27/14 20:27	7440-28-0		
Vanadium, Dissolved	1.9J	ug/L	5.0	0.50	1	06/26/14 17:40	06/27/14 20:27	7440-62-2		
Zinc, Dissolved	4.3J	ug/L	10.0	1.2	1	06/26/14 17:40	06/27/14 20:27	7440-66-6		
7470 Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	0.20 U	ug/L	0.20	0.025	1	07/01/14 14:09	07/02/14 08:56	7439-97-6		
8270 MSSV Semivolatile Organic		Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Acenaphthene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:41	83-32-9		
Acenaphthylene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:41	208-96-8		
Anthracene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:41	120-12-7		
Azobenzene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:41	103-33-3	N2	
Benidine	104 U	ug/L	104	104	1	06/26/14 10:15	07/07/14 17:41	92-87-5		
Benzo(a)anthracene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:41	56-55-3		
Benzo(a)pyrene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	50-32-8		
Benzo(b)fluoranthene	1.0 U	ug/L	1.0	0.20	1	06/26/14 10:15	07/07/14 17:41	205-99-2		
Benzo(g,h,i)perylene	1.0 U	ug/L	1.0	0.41	1	06/26/14 10:15	07/07/14 17:41	191-24-2		
Benzo(k)fluoranthene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	207-08-9		
4-Bromophenylphenyl ether	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:41	101-55-3		
Butylbenzylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:41	85-68-7		
bis(2-Chloroethoxy)methane	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:41	111-91-1		
bis(2-Chloroethyl) ether	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:41	111-44-4		
bis(2-Chloroisopropyl) ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:41	108-60-1		
2-Chloronaphthalene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:41	91-58-7		
2-Chlorophenol	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 17:41	95-57-8		
4-Chlorophenylphenyl ether	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:41	7005-72-3		
Chrysene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:41	218-01-9		
Dibenz(a,h)anthracene	1.0 U	ug/L	1.0	0.47	1	06/26/14 10:15	07/07/14 17:41	53-70-3		
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	95-50-1		
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:41	541-73-1		
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:41	106-46-7		
3,3'-Dichlorobenzidine	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:41	91-94-1		
2,4-Dichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	120-83-2		
Diethylphthalate	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:41	84-66-2		
2,4-Dimethylphenol	1.0 U	ug/L	1.0	0.34	1	06/26/14 10:15	07/07/14 17:41	105-67-9		

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: Potable Well **Lab ID: 30123439006** Collected: 06/19/14 08:50 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV Semivolatile Organic Analytical Method: EPA 8270C Preparation Method: EPA 3510C

Dimethylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:41	131-11-3	
Di-n-butylphthalate	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:41	84-74-2	
4,6-Dinitro-2-methylphenol	2.6 U	ug/L	2.6	0.26	1	06/26/14 10:15	07/07/14 17:41	534-52-1	
2,4-Dinitrophenol	2.6 U	ug/L	2.6	1.0	1	06/26/14 10:15	07/07/14 17:41	51-28-5	
2,4-Dinitrotoluene	1.0 U	ug/L	1.0	0.25	1	06/26/14 10:15	07/07/14 17:41	121-14-2	
2,6-Dinitrotoluene	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:41	606-20-2	
Di-n-octylphthalate	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:41	117-84-0	
bis(2-Ethylhexyl)phthalate	1.5	ug/L	1.0	0.45	1	06/26/14 10:15	07/07/14 17:41	117-81-7	2c,B
Fluoranthene	1.0 U	ug/L	1.0	0.23	1	06/26/14 10:15	07/07/14 17:41	206-44-0	
Fluorene	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:41	86-73-7	
Hexachloro-1,3-butadiene	1.0 U	ug/L	1.0	0.34	1	06/26/14 10:15	07/07/14 17:41	87-68-3	
Hexachlorobenzene	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	118-74-1	
Hexachlorocyclopentadiene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:41	77-47-4	
Hexachloroethane	1.0 U	ug/L	1.0	0.32	1	06/26/14 10:15	07/07/14 17:41	67-72-1	
Indeno(1,2,3-cd)pyrene	1.0 U	ug/L	1.0	0.50	1	06/26/14 10:15	07/07/14 17:41	193-39-5	
Isophorone	1.0 U	ug/L	1.0	0.21	1	06/26/14 10:15	07/07/14 17:41	78-59-1	
2-Methylphenol(o-Cresol)	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:41	95-48-7	
3&4-Methylphenol(m&p Cresol)	2.1 U	ug/L	2.1	0.73	1	06/26/14 10:15	07/07/14 17:41		
Naphthalene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:41	91-20-3	
Nitrobenzene	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:41	98-95-3	
2-Nitrophenol	1.0 U	ug/L	1.0	0.28	1	06/26/14 10:15	07/07/14 17:41	88-75-5	
4-Nitrophenol	1.0 U	ug/L	1.0	0.40	1	06/26/14 10:15	07/07/14 17:41	100-02-7	
N-Nitrosodimethylamine	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:41	62-75-9	
N-Nitroso-di-n-propylamine	1.0 U	ug/L	1.0	0.22	1	06/26/14 10:15	07/07/14 17:41	621-64-7	
N-Nitrosodiphenylamine	1.0 U	ug/L	1.0	0.48	1	06/26/14 10:15	07/07/14 17:41	86-30-6	
Pentachlorophenol	2.6 U	ug/L	2.6	0.29	1	06/26/14 10:15	07/07/14 17:41	87-86-5	
Phenanthrene	1.0 U	ug/L	1.0	0.24	1	06/26/14 10:15	07/07/14 17:41	85-01-8	
Phenol	1.0 U	ug/L	1.0	0.27	1	06/26/14 10:15	07/07/14 17:41	108-95-2	
Pyrene	1.0 U	ug/L	1.0	0.29	1	06/26/14 10:15	07/07/14 17:41	129-00-0	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.30	1	06/26/14 10:15	07/07/14 17:41	120-82-1	
2,4,6-Trichlorophenol	1.0 U	ug/L	1.0	0.26	1	06/26/14 10:15	07/07/14 17:41	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	80 %		14-104		1	06/26/14 10:15	07/07/14 17:41	4165-60-0	
2-Fluorobiphenyl (S)	85 %		13-109		1	06/26/14 10:15	07/07/14 17:41	321-60-8	
Terphenyl-d14 (S)	91 %		23-141		1	06/26/14 10:15	07/07/14 17:41	1718-51-0	
Phenol-d6 (S)	30 %		10-110		1	06/26/14 10:15	07/07/14 17:41	13127-88-3	
2-Fluorophenol (S)	48 %		21-110		1	06/26/14 10:15	07/07/14 17:41	367-12-4	
2,4,6-Tribromophenol (S)	96 %		17-103		1	06/26/14 10:15	07/07/14 17:41	118-79-6	

8260 MSV Analytical Method: EPA 8260B

Acrolein	2.0 U	ug/L	2.0	1.7	1		06/30/14 22:40	107-02-8	
Acrylonitrile	2.0 U	ug/L	2.0	1.6	1		06/30/14 22:40	107-13-1	
Benzene	1.0 U	ug/L	1.0	0.065	1		06/30/14 22:40	71-43-2	
Bromodichloromethane	1.0 U	ug/L	1.0	0.15	1		06/30/14 22:40	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.25	1		06/30/14 22:40	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.37	1		06/30/14 22:40	74-83-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: Potable Well **Lab ID: 30123439006** Collected: 06/19/14 08:50 Received: 06/24/14 10:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260 MSV									
Analytical Method: EPA 8260B									
Carbon tetrachloride	1.0 U	ug/L	1.0	0.24	1		06/30/14 22:40	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 22:40	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.48	1		06/30/14 22:40	75-00-3	
2-Chloroethylvinyl ether	2.0 U	ug/L	2.0	2.0	1		06/30/14 22:40	110-75-8	
Chloroform	1.0 U	ug/L	1.0	0.16	1		06/30/14 22:40	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.21	1		06/30/14 22:40	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 22:40	124-48-1	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.16	1		06/30/14 22:40	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		06/30/14 22:40	107-06-2	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.14	1		06/30/14 22:40	75-35-4	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		06/30/14 22:40	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.23	1		06/30/14 22:40	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.19	1		06/30/14 22:40	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.23	1		06/30/14 22:40	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		06/30/14 22:40	100-41-4	
Methylene Chloride	1.0 U	ug/L	1.0	0.23	1		06/30/14 22:40	75-09-2	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.22	1		06/30/14 22:40	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.12	1		06/30/14 22:40	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.11	1		06/30/14 22:40	108-88-3	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.19	1		06/30/14 22:40	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.23	1		06/30/14 22:40	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.15	1		06/30/14 22:40	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.13	1		06/30/14 22:40	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102 %		85-115		1		06/30/14 22:40	460-00-4	
1,2-Dichloroethane-d4 (S)	99 %		77-119		1		06/30/14 22:40	17060-07-0	
Toluene-d8 (S)	100 %		85-115		1		06/30/14 22:40	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Worcester Township

Pace Project No.: 30123439

Sample: Trip Blank		Lab ID: 30123439007	Collected: 06/19/14 00:01	Received: 06/24/14 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP		Analytical Method: EPA 8011		Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	0.040 U	ug/L	0.040	0.014	1	06/27/14 11:06	06/27/14 21:14	106-93-4	
Surrogates									
1,1,1,2-Tetrachloroethane	87 %		60-140		1	06/27/14 11:06	06/27/14 21:14	630-20-6	
8260 MSV PA UST		Analytical Method: EPA 8260B							
Benzene	1.0 U	ug/L	1.0	0.065	1		07/01/14 23:48	71-43-2	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.14	1		07/01/14 23:48	107-06-2	
Ethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/01/14 23:48	100-41-4	
Isopropylbenzene (Cumene)	1.0 U	ug/L	1.0	0.12	1		07/01/14 23:48	98-82-8	
Methyl-tert-butyl ether	1.0 U	ug/L	1.0	0.19	1		07/01/14 23:48	1634-04-4	
Naphthalene	2.0 U	ug/L	2.0	0.33	1		07/01/14 23:48	91-20-3	
Toluene	1.0 U	ug/L	1.0	0.11	1		07/01/14 23:48	108-88-3	
1,2,4-Trimethylbenzene	1.0 U	ug/L	1.0	0.13	1		07/01/14 23:48	95-63-6	
1,3,5-Trimethylbenzene	1.0 U	ug/L	1.0	0.12	1		07/01/14 23:48	108-67-8	
Xylene (Total)	3.0 U	ug/L	3.0	0.31	1		07/01/14 23:48	1330-20-7	
Surrogates									
Toluene-d8 (S)	97 %		85-115		1		07/01/14 23:48	2037-26-5	
4-Bromofluorobenzene (S)	99 %		85-115		1		07/01/14 23:48	460-00-4	
1,2-Dichloroethane-d4 (S)	92 %		77-119		1		07/01/14 23:48	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: GCSV/6896

Analysis Method: EPA 8011

QC Batch Method: EPA 8011

Analysis Description: GCS 8011 EDB DBCP

Associated Lab Samples: 30123439002, 30123439007

METHOD BLANK: 749473

Matrix: Water

Associated Lab Samples: 30123439002, 30123439007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	0.040 U	0.040	06/27/14 19:30	
1,1,1,2-Tetrachloroethane	%	79	60-140	06/27/14 19:30	

LABORATORY CONTROL SAMPLE: 749474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.25	0.27	107	80-120	
1,1,1,2-Tetrachloroethane	%			90	60-140	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 749475

749476

Parameter	Units	30123439002		749475		749476		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
1,2-Dibromoethane (EDB)	ug/L	0.040 U	.4	.4	0.42	0.43	106	107	60-140	1	25	
1,1,1,2-Tetrachloroethane	%						94	90	60-140			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: MERP/5627

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

METHOD BLANK: 751285

Matrix: Water

Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	0.20 U	0.20	07/02/14 08:38	

LABORATORY CONTROL SAMPLE: 751286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	100	85-115	

MATRIX SPIKE SAMPLE: 751288

Parameter	Units	30123439006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	0.20 U	2.5	2.6	103	80-120	

SAMPLE DUPLICATE: 751287

Parameter	Units	30123439006 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury, Dissolved	ug/L	0.20 U	0.20 U		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30123439

QC Batch: MPRP/13295 Analysis Method: EPA 6010B
QC Batch Method: EPA 3005A Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 30123439001, 30123439002, 30123439003, 30123439004, 30123439005, 30123439006

METHOD BLANK: 749174 Matrix: Water
Associated Lab Samples: 30123439001, 30123439002, 30123439003, 30123439004, 30123439005, 30123439006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	6.0 U	6.0	06/27/14 20:00	
Arsenic, Dissolved	ug/L	5.0 U	5.0	06/27/14 20:00	
Barium, Dissolved	ug/L	10.0 U	10.0	06/27/14 20:00	
Beryllium, Dissolved	ug/L	1.0 U	1.0	06/27/14 20:00	
Cadmium, Dissolved	ug/L	3.0 U	3.0	06/27/14 20:00	
Chromium, Dissolved	ug/L	5.0 U	5.0	06/27/14 20:00	
Copper, Dissolved	ug/L	5.0 U	5.0	06/27/14 20:00	
Lead, Dissolved	ug/L	5.0 U	5.0	06/27/14 20:00	
Nickel, Dissolved	ug/L	10.0 U	10.0	06/27/14 20:00	
Selenium, Dissolved	ug/L	8.0 U	8.0	06/27/14 20:00	
Silver, Dissolved	ug/L	0.60J	6.0	06/27/14 20:00	
Thallium, Dissolved	ug/L	10.0 U	10.0	06/27/14 20:00	
Vanadium, Dissolved	ug/L	5.0 U	5.0	06/27/14 20:00	
Zinc, Dissolved	ug/L	1.6J	10.0	06/27/14 20:00	

LABORATORY CONTROL SAMPLE: 749175

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	500	495	99	80-120	
Arsenic, Dissolved	ug/L	500	466	93	80-120	
Barium, Dissolved	ug/L	500	480	96	80-120	
Beryllium, Dissolved	ug/L	500	472	94	80-120	
Cadmium, Dissolved	ug/L	500	473	95	80-120	
Chromium, Dissolved	ug/L	500	458	92	80-120	
Copper, Dissolved	ug/L	500	476	95	80-120	
Lead, Dissolved	ug/L	500	452	90	80-120	
Nickel, Dissolved	ug/L	500	489	98	80-120	
Selenium, Dissolved	ug/L	500	482	96	80-120	
Silver, Dissolved	ug/L	250	231	93	80-120	
Thallium, Dissolved	ug/L	500	458	92	80-120	
Vanadium, Dissolved	ug/L	500	468	94	80-120	
Zinc, Dissolved	ug/L	500	476	95	80-120	

MATRIX SPIKE SAMPLE: 749177

Parameter	Units	30123439006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	6.0 U	500	542	108	75-125	
Arsenic, Dissolved	ug/L	5.0 U	500	526	105	75-125	

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

MATRIX SPIKE SAMPLE: 749177

Parameter	Units	30123439006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	70.5	500	607	107	75-125	
Beryllium, Dissolved	ug/L	1.0 U	500	532	106	75-125	
Cadmium, Dissolved	ug/L	3.0 U	500	532	106	75-125	
Chromium, Dissolved	ug/L	1.1J	500	521	104	75-125	
Lead, Dissolved	ug/L	5.0 U	500	539	108	75-125	
Nickel, Dissolved	ug/L	10.0 U	500	530	106	75-125	
Selenium, Dissolved	ug/L	8.0 U	500	535	106	75-125	
Silver, Dissolved	ug/L	6.0 U	250	266	106	75-125	
Thallium, Dissolved	ug/L	10.0 U	500	514	103	75-125	
Vanadium, Dissolved	ug/L	1.9J	500	533	106	75-125	
Zinc, Dissolved	ug/L	4.3J	500	518	103	75-125	

SAMPLE DUPLICATE: 749176

Parameter	Units	30123439006 Result	Dup Result	RPD	Max RPD	Qualifiers
Antimony, Dissolved	ug/L	6.0 U	6.0 U		20	
Arsenic, Dissolved	ug/L	5.0 U	5.0 U		20	
Barium, Dissolved	ug/L	70.5	69.8	1	20	
Beryllium, Dissolved	ug/L	1.0 U	1.0 U		20	
Cadmium, Dissolved	ug/L	3.0 U	3.0 U		20	
Chromium, Dissolved	ug/L	1.1J	5.0 U		20	
Lead, Dissolved	ug/L	5.0 U	5.0 U		20	
Nickel, Dissolved	ug/L	10.0 U	1.5J		20	
Selenium, Dissolved	ug/L	8.0 U	8.0 U		20	
Silver, Dissolved	ug/L	6.0 U	6.0 U		20	
Thallium, Dissolved	ug/L	10.0 U	10.0 U		20	
Vanadium, Dissolved	ug/L	1.9J	1.8J		20	
Zinc, Dissolved	ug/L	4.3J	4.2J		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: MSV/20105 Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B Analysis Description: 8260 MSV

Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

METHOD BLANK: 750475

Matrix: Water

Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
1,1,2-Trichloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
1,1-Dichloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
1,1-Dichloroethene	ug/L	1.0 U	1.0	06/30/14 21:52	
1,2-Dichloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
1,2-Dichloropropane	ug/L	1.0 U	1.0	06/30/14 21:52	
2-Chloroethylvinyl ether	ug/L	2.0 U	2.0	06/30/14 21:52	
Acrolein	ug/L	2.0 U	2.0	06/30/14 21:52	
Acrylonitrile	ug/L	2.0 U	2.0	06/30/14 21:52	
Benzene	ug/L	1.0 U	1.0	06/30/14 21:52	
Bromodichloromethane	ug/L	1.0 U	1.0	06/30/14 21:52	
Bromoform	ug/L	1.0 U	1.0	06/30/14 21:52	
Bromomethane	ug/L	1.0 U	1.0	06/30/14 21:52	
Carbon tetrachloride	ug/L	1.0 U	1.0	06/30/14 21:52	
Chlorobenzene	ug/L	1.0 U	1.0	06/30/14 21:52	
Chloroethane	ug/L	1.0 U	1.0	06/30/14 21:52	
Chloroform	ug/L	1.0 U	1.0	06/30/14 21:52	
Chloromethane	ug/L	1.0 U	1.0	06/30/14 21:52	
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0	06/30/14 21:52	
Dibromochloromethane	ug/L	1.0 U	1.0	06/30/14 21:52	
Ethylbenzene	ug/L	1.0 U	1.0	06/30/14 21:52	
Methylene Chloride	ug/L	1.0	1.0	06/30/14 21:52	C9
Tetrachloroethene	ug/L	1.0 U	1.0	06/30/14 21:52	
Toluene	ug/L	1.0 U	1.0	06/30/14 21:52	
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0	06/30/14 21:52	
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0	06/30/14 21:52	
Trichloroethene	ug/L	1.0 U	1.0	06/30/14 21:52	
Vinyl chloride	ug/L	1.0 U	1.0	06/30/14 21:52	
1,2-Dichloroethane-d4 (S)	%	99	77-119	06/30/14 21:52	
4-Bromofluorobenzene (S)	%	99	85-115	06/30/14 21:52	
Toluene-d8 (S)	%	99	85-115	06/30/14 21:52	

LABORATORY CONTROL SAMPLE: 750476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.8	99	62-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.6	98	61-117	
1,1,2-Trichloroethane	ug/L	20	21.0	105	72-119	
1,1-Dichloroethane	ug/L	20	18.5	93	63-123	

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

LABORATORY CONTROL SAMPLE: 750476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	20	18.5	92	57-127	
1,2-Dichloroethane	ug/L	20	18.9	94	62-125	
1,2-Dichloropropane	ug/L	20	18.2	91	69-115	
2-Chloroethylvinyl ether	ug/L	20	17.8	89	70-130	
Acrolein	ug/L		16.3			
Acrylonitrile	ug/L	20	18.2	91	70-130	
Benzene	ug/L	20	18.2	91	66-122	
Bromodichloromethane	ug/L	20	18.5	92	63-118	
Bromoform	ug/L	20	22.1	110	46-130	
Bromomethane	ug/L	20	12.7	64	10-175	
Carbon tetrachloride	ug/L	20	19.6	98	55-126	
Chlorobenzene	ug/L	20	20.2	101	70-121	
Chloroethane	ug/L	20	21.6	108	24-161	
Chloroform	ug/L	20	19.0	95	62-126	
Chloromethane	ug/L	20	18.6	93	37-147	
cis-1,3-Dichloropropene	ug/L	20	18.2	91	64-118	
Dibromochloromethane	ug/L	20	21.4	107	60-120	
Ethylbenzene	ug/L	20	20.3	101	69-119	
Methylene Chloride	ug/L	20	18.5	92	59-128	
Tetrachloroethene	ug/L	20	20.1	101	62-125	
Toluene	ug/L	20	19.0	95	72-115	
trans-1,2-Dichloroethene	ug/L	20	18.7	93	59-122	
trans-1,3-Dichloropropene	ug/L	20	18.2	91	64-120	
Trichloroethene	ug/L	20	20.0	100	62-125	
Vinyl chloride	ug/L	20	18.8	94	52-145	
1,2-Dichloroethane-d4 (S)	%			98	77-119	
4-Bromofluorobenzene (S)	%			103	85-115	
Toluene-d8 (S)	%			101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 750477 750478

Parameter	Units	30123129002		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1,1-Trichloroethane	ug/L	529	200	200	695	675	83	73	62-125	3	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	18.0	91	90	61-117	2	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	20.9	20.5	104	102	72-119	2	30		
1,1-Dichloroethane	ug/L	11.1	20	20	29.3	29.7	91	93	63-123	1	30		
1,1-Dichloroethene	ug/L	12.5	20	20	29.1	29.5	83	85	57-127	1	30		
1,2-Dichloroethane	ug/L	ND	20	20	19.4	19.1	97	95	62-125	2	30		
1,2-Dichloropropane	ug/L	ND	20	20	18.7	18.3	94	91	69-115	2	30		
Acrolein	ug/L	ND			19.8	16.3				19	30		
Acrylonitrile	ug/L	ND	20	20	18.4	17.1	92	85	70-130	8	30		
Benzene	ug/L	ND	20	20	18.5	17.7	92	88	66-122	5	30		
Bromodichloromethane	ug/L	ND	20	20	18.6	18.5	93	92	63-118	1	30		
Bromoform	ug/L	ND	20	20	22.5	21.6	112	108	46-130	4	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

Parameter	Units	30123129002		750477		750478		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Bromomethane	ug/L	ND	20	20	11.7	17.0	58	85	10-175	37	30	R1		
Carbon tetrachloride	ug/L	ND	20	20	18.8	17.9	94	90	55-126	5	30			
Chlorobenzene	ug/L	ND	20	20	20.3	19.4	101	97	70-121	5	30			
Chloroethane	ug/L	ND	20	20	21.9	23.0	109	115	24-161	5	30			
Chloroform	ug/L	ND	20	20	18.8	18.4	94	92	62-126	2	30			
Chloromethane	ug/L	ND	20	20	20.3	21.0	101	105	37-147	3	30			
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.4	17.7	92	88	64-118	4	30			
Dibromochloromethane	ug/L	ND	20	20	21.7	20.8	109	104	60-120	4	30			
Ethylbenzene	ug/L	ND	20	20	19.7	18.9	98	95	69-119	4	30			
Methylene Chloride	ug/L	ND	20	20	17.6	17.9	88	89	59-128	1	30			
Tetrachloroethene	ug/L	869	200	200	995	982	63	57	62-125	1	30	M0		
Toluene	ug/L	ND	20	20	18.9	18.5	94	93	72-115	2	30			
trans-1,2-Dichloroethene	ug/L	ND	20	20	18.7	18.6	93	93	59-122	0	30			
trans-1,3-Dichloropropene	ug/L	ND	20	20	18.8	18.1	94	91	64-120	4	30			
Trichloroethene	ug/L	23.7	20	20	43.0	42.4	97	94	62-125	1	30			
Vinyl chloride	ug/L	ND	20	20	20.0	20.7	100	104	52-145	4	30			
1,2-Dichloroethane-d4 (S)	%						100	101	77-119					
4-Bromofluorobenzene (S)	%						98	100	85-115					
Toluene-d8 (S)	%						102	100	85-115					

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: MSV/20117 Analysis Method: EPA 8260B
 QC Batch Method: EPA 8260B Analysis Description: 8260 MSV UST-WATER
 Associated Lab Samples: 30123439002, 30123439003, 30123439007

METHOD BLANK: 751018 Matrix: Water

Associated Lab Samples: 30123439002, 30123439003, 30123439007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	1.0 U	1.0	07/01/14 22:58	
1,2-Dichloroethane	ug/L	1.0 U	1.0	07/01/14 22:58	
1,3,5-Trimethylbenzene	ug/L	1.0 U	1.0	07/01/14 22:58	
Benzene	ug/L	1.0 U	1.0	07/01/14 22:58	
Ethylbenzene	ug/L	1.0 U	1.0	07/01/14 22:58	
Isopropylbenzene (Cumene)	ug/L	1.0 U	1.0	07/01/14 22:58	
Methyl-tert-butyl ether	ug/L	1.0 U	1.0	07/01/14 22:58	
Naphthalene	ug/L	2.0 U	2.0	07/01/14 22:58	
Toluene	ug/L	1.0 U	1.0	07/01/14 22:58	
Xylene (Total)	ug/L	3.0 U	3.0	07/01/14 22:58	
1,2-Dichloroethane-d4 (S)	%	92	77-119	07/01/14 22:58	
4-Bromofluorobenzene (S)	%	101	85-115	07/01/14 22:58	
Toluene-d8 (S)	%	95	85-115	07/01/14 22:58	

LABORATORY CONTROL SAMPLE: 751019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	20.3	101	64-116	
1,2-Dichloroethane	ug/L	20	17.7	88	62-125	
1,3,5-Trimethylbenzene	ug/L	20	20.1	101	61-114	
Benzene	ug/L	20	17.6	88	66-122	
Ethylbenzene	ug/L	20	18.7	93	69-119	
Isopropylbenzene (Cumene)	ug/L	20	20.0	100	68-126	
Methyl-tert-butyl ether	ug/L	20	19.6	98	58-131	
Naphthalene	ug/L	20	18.4	92	51-123	
Toluene	ug/L	20	17.7	89	72-115	
Xylene (Total)	ug/L	60	55.4	92	70-123	
1,2-Dichloroethane-d4 (S)	%			98	77-119	
4-Bromofluorobenzene (S)	%			95	85-115	
Toluene-d8 (S)	%			94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 751020 751021

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		30123685002 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,2,4-Trimethylbenzene	ug/L	1.0 U	20	20	20.9	20.7	104	104	64-116	1	30	
1,2-Dichloroethane	ug/L	0.63J	20	20	18.7	18.7	90	91	62-125	0	30	
1,3,5-Trimethylbenzene	ug/L	1.0 U	20	20	21.1	20.8	105	104	61-114	1	30	

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

Parameter	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 751020			751021			MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
	30123685002 Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Benzene	ug/L	10.2	20	20	27.4	26.9	86	83	66-122	2	30
Ethylbenzene	ug/L	1.0 U	20	20	19.3	19.7	96	99	69-119	2	30
Isopropylbenzene (Cumene)	ug/L	1.0 U	20	20	22.0	21.4	110	107	68-126	3	30
Methyl-tert-butyl ether	ug/L	4.6	20	20	23.2	23.9	93	97	58-131	3	30
Naphthalene	ug/L	2.0 U	20	20	16.2	16.7	81	83	51-123	3	30
Toluene	ug/L	1.0 U	20	20	19.2	18.7	96	94	72-115	2	30
Xylene (Total)	ug/L	3.0 U	60	60	57.8	57.7	96	96	70-123	0	30
1,2-Dichloroethane-d4 (S)	%						98	98	77-119		
4-Bromofluorobenzene (S)	%						103	96	85-115		
Toluene-d8 (S)	%						92	91	85-115		

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: OEXT/19770

Analysis Method: EPA 8015B

QC Batch Method: EPA 8015B

Analysis Description: EPA 8015 TPH

Associated Lab Samples: 30123439001, 30123439005

METHOD BLANK: 748683

Matrix: Water

Associated Lab Samples: 30123439001, 30123439005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/L	0.023J	0.10	07/04/14 17:32	N2
o-Terphenyl (S)	%	57	42-125	07/04/14 17:32	N2

LABORATORY CONTROL SAMPLE: 748684

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/L	1	0.95	95	50-121	N2
o-Terphenyl (S)	%			61	42-125	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: OEXT/19876

Analysis Method: EPA 8082

QC Batch Method: EPA 3510C

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 30123439001, 30123439002, 30123439003, 30123439005

METHOD BLANK: 753958

Matrix: Water

Associated Lab Samples: 30123439001, 30123439002, 30123439003, 30123439005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1221 (Aroclor 1221)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1232 (Aroclor 1232)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1242 (Aroclor 1242)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1248 (Aroclor 1248)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1254 (Aroclor 1254)	ug/L	0.25 U	0.25	07/08/14 20:11	
PCB-1260 (Aroclor 1260)	ug/L	0.25 U	0.25	07/08/14 20:11	
Decachlorobiphenyl (S)	%	69	30-127	07/08/14 20:11	
Tetrachloro-m-xylene (S)	%	74	51-99	07/08/14 20:11	

LABORATORY CONTROL SAMPLE: 753959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1248 (Aroclor 1248)	ug/L	2.5	2.2	88	48-105	
Decachlorobiphenyl (S)	%			69	30-127	
Tetrachloro-m-xylene (S)	%			73	51-99	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township
Pace Project No.: 30123439

QC Batch: OEXT/19772 Analysis Method: EPA 8270C by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 30123439002, 30123439003

METHOD BLANK: 748687 Matrix: Water
Associated Lab Samples: 30123439002, 30123439003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzo(a)anthracene	ug/L	0.017J	0.10	07/03/14 16:00	
Benzo(a)pyrene	ug/L	0.10 U	0.10	07/03/14 16:00	
Benzo(b)fluoranthene	ug/L	0.10 U	0.10	07/03/14 16:00	
Benzo(g,h,i)perylene	ug/L	0.10 U	0.10	07/03/14 16:00	
Chrysene	ug/L	0.018J	0.10	07/03/14 16:00	
Indeno(1,2,3-cd)pyrene	ug/L	0.10 U	0.10	07/03/14 16:00	
Phenanthrene	ug/L	0.39	0.10	07/03/14 16:00	B
Pyrene	ug/L	0.098J	0.10	07/03/14 16:00	
2-Fluorobiphenyl (S)	%	82	15-107	07/03/14 16:00	
Terphenyl-d14 (S)	%	92	40-133	07/03/14 16:00	

LABORATORY CONTROL SAMPLE: 748688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)anthracene	ug/L	2	1.7	86	40-134	
Benzo(a)pyrene	ug/L	2	1.4	71	34-135	
Benzo(b)fluoranthene	ug/L	2	1.9	97	35-143	
Benzo(g,h,i)perylene	ug/L	2	1.5	75	23-149	
Chrysene	ug/L	2	1.6	82	40-141	
Indeno(1,2,3-cd)pyrene	ug/L	2	1.6	80	32-152	
Phenanthrene	ug/L	2	1.7	85	36-124	B
Pyrene	ug/L	2	1.8	88	45-132	
2-Fluorobiphenyl (S)	%			78	15-107	
Terphenyl-d14 (S)	%			96	40-133	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

QC Batch: OEXT/19769 Analysis Method: EPA 8270C
 QC Batch Method: EPA 3510C Analysis Description: 8270 Water MSSV
 Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

METHOD BLANK: 748681 Matrix: Water
 Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
1,2-Dichlorobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
1,3-Dichlorobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
1,4-Dichlorobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
2,4,6-Trichlorophenol	ug/L	1.0 U	1.0	07/07/14 16:01	
2,4-Dichlorophenol	ug/L	1.0 U	1.0	07/07/14 16:01	
2,4-Dimethylphenol	ug/L	1.0 U	1.0	07/07/14 16:01	
2,4-Dinitrophenol	ug/L	2.5 U	2.5	07/07/14 16:01	
2,4-Dinitrotoluene	ug/L	1.0 U	1.0	07/07/14 16:01	
2,6-Dinitrotoluene	ug/L	1.0 U	1.0	07/07/14 16:01	
2-Chloronaphthalene	ug/L	1.0 U	1.0	07/07/14 16:01	
2-Chlorophenol	ug/L	1.0 U	1.0	07/07/14 16:01	
2-Methylphenol(o-Cresol)	ug/L	1.0 U	1.0	07/07/14 16:01	
2-Nitrophenol	ug/L	1.0 U	1.0	07/07/14 16:01	
3&4-Methylphenol(m&p Cresol)	ug/L	2.0 U	2.0	07/07/14 16:01	
3,3'-Dichlorobenzidine	ug/L	1.0 U	1.0	07/07/14 16:01	
4,6-Dinitro-2-methylphenol	ug/L	2.5 U	2.5	07/07/14 16:01	
4-Bromophenylphenyl ether	ug/L	1.0 U	1.0	07/07/14 16:01	
4-Chlorophenylphenyl ether	ug/L	1.0 U	1.0	07/07/14 16:01	
4-Nitrophenol	ug/L	1.0 U	1.0	07/07/14 16:01	
Acenaphthene	ug/L	1.0 U	1.0	07/07/14 16:01	
Acenaphthylene	ug/L	1.0 U	1.0	07/07/14 16:01	
Anthracene	ug/L	1.0 U	1.0	07/07/14 16:01	
Azobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	N2
Benzidine	ug/L	100 U	100	07/07/14 16:01	
Benzo(a)anthracene	ug/L	1.0 U	1.0	07/07/14 16:01	
Benzo(a)pyrene	ug/L	1.0 U	1.0	07/07/14 16:01	
Benzo(b)fluoranthene	ug/L	1.0 U	1.0	07/07/14 16:01	
Benzo(g,h,i)perylene	ug/L	1.0 U	1.0	07/07/14 16:01	
Benzo(k)fluoranthene	ug/L	1.0 U	1.0	07/07/14 16:01	
bis(2-Chloroethoxy)methane	ug/L	1.0 U	1.0	07/07/14 16:01	
bis(2-Chloroethyl) ether	ug/L	1.0 U	1.0	07/07/14 16:01	
bis(2-Chloroisopropyl) ether	ug/L	1.0 U	1.0	07/07/14 16:01	
bis(2-Ethylhexyl)phthalate	ug/L	1.6	1.0	07/07/14 16:01	B
Butylbenzylphthalate	ug/L	1.0 U	1.0	07/07/14 16:01	
Chrysene	ug/L	1.0 U	1.0	07/07/14 16:01	
Di-n-butylphthalate	ug/L	1.0 U	1.0	07/07/14 16:01	
Di-n-octylphthalate	ug/L	1.0 U	1.0	07/07/14 16:01	
Dibenz(a,h)anthracene	ug/L	1.0 U	1.0	07/07/14 16:01	
Diethylphthalate	ug/L	2.6	1.0	07/07/14 16:01	B
Dimethylphthalate	ug/L	1.0 U	1.0	07/07/14 16:01	

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

METHOD BLANK: 748681

Matrix: Water

Associated Lab Samples: 30123439001, 30123439004, 30123439005, 30123439006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoranthene	ug/L	1.0 U	1.0	07/07/14 16:01	
Fluorene	ug/L	1.0 U	1.0	07/07/14 16:01	
Hexachloro-1,3-butadiene	ug/L	1.0 U	1.0	07/07/14 16:01	
Hexachlorobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
Hexachlorocyclopentadiene	ug/L	1.0 U	1.0	07/07/14 16:01	
Hexachloroethane	ug/L	1.0 U	1.0	07/07/14 16:01	
Indeno(1,2,3-cd)pyrene	ug/L	1.0 U	1.0	07/07/14 16:01	
Isophorone	ug/L	1.0 U	1.0	07/07/14 16:01	
N-Nitroso-di-n-propylamine	ug/L	1.0 U	1.0	07/07/14 16:01	
N-Nitrosodimethylamine	ug/L	1.0 U	1.0	07/07/14 16:01	
N-Nitrosodiphenylamine	ug/L	1.0 U	1.0	07/07/14 16:01	
Naphthalene	ug/L	1.0 U	1.0	07/07/14 16:01	
Nitrobenzene	ug/L	1.0 U	1.0	07/07/14 16:01	
Pentachlorophenol	ug/L	2.5 U	2.5	07/07/14 16:01	
Phenanthrene	ug/L	1.0 U	1.0	07/07/14 16:01	
Phenol	ug/L	1.0 U	1.0	07/07/14 16:01	
Pyrene	ug/L	1.0 U	1.0	07/07/14 16:01	
2,4,6-Tribromophenol (S)	%	79	17-103	07/07/14 16:01	
2-Fluorobiphenyl (S)	%	71	13-109	07/07/14 16:01	
2-Fluorophenol (S)	%	43	21-110	07/07/14 16:01	
Nitrobenzene-d5 (S)	%	68	14-104	07/07/14 16:01	
Phenol-d6 (S)	%	27	10-110	07/07/14 16:01	
Terphenyl-d14 (S)	%	83	23-141	07/07/14 16:01	

LABORATORY CONTROL SAMPLE: 748682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	5	3.7	75	33-98	
1,2-Dichlorobenzene	ug/L		1.0 U			
1,3-Dichlorobenzene	ug/L		1.0 U			
1,4-Dichlorobenzene	ug/L	5	3.3	66	26-101	
2,4,6-Trichlorophenol	ug/L		1.0 U			
2,4-Dichlorophenol	ug/L		1.0 U			
2,4-Dimethylphenol	ug/L		1.0 U			
2,4-Dinitrophenol	ug/L		2.5 U			
2,4-Dinitrotoluene	ug/L	5	4.1	81	14-125	
2,6-Dinitrotoluene	ug/L		1.0 U			
2-Chloronaphthalene	ug/L		1.0 U			
2-Chlorophenol	ug/L	5	3.9	77	28-106	
2-Methylphenol(o-Cresol)	ug/L		1.0 U			
2-Nitrophenol	ug/L		1.0 U			
3&4-Methylphenol(m&p Cresol)	ug/L		2.0 U			
3,3'-Dichlorobenzidine	ug/L		1.0 U			
4,6-Dinitro-2-methylphenol	ug/L		2.5 U			

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QUALITY CONTROL DATA

Project: Worcester Township

Pace Project No.: 30123439

LABORATORY CONTROL SAMPLE: 748682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromophenylphenyl ether	ug/L		1.0 U			
4-Chlorophenylphenyl ether	ug/L		1.0 U			
4-Nitrophenol	ug/L	5	1.6	33	10-60	
Acenaphthene	ug/L	5	4.1	82	36-120	
Acenaphthylene	ug/L	5	4.1	81	34-114	
Anthracene	ug/L	5	4.2	85	35-126	
Azobenzene	ug/L		1.0 U			N2
Benzidine	ug/L		100 U			
Benzo(a)anthracene	ug/L	5	4.5	89	38-131	
Benzo(a)pyrene	ug/L	5	4.3	86	38-128	
Benzo(b)fluoranthene	ug/L	5	4.5	90	36-141	
Benzo(g,h,i)perylene	ug/L	5	3.6	73	13-138	
Benzo(k)fluoranthene	ug/L	5	5.2	104	41-153	
bis(2-Chloroethoxy)methane	ug/L		1.0 U			
bis(2-Chloroethyl) ether	ug/L		1.0 U			
bis(2-Chloroisopropyl) ether	ug/L		1.0 U			
bis(2-Ethylhexyl)phthalate	ug/L		1.0			B
Butylbenzylphthalate	ug/L		1.0 U			
Chrysene	ug/L	5	4.5	90	43-142	
Di-n-butylphthalate	ug/L		1.0 U			
Di-n-octylphthalate	ug/L		1.0 U			
Dibenz(a,h)anthracene	ug/L	5	3.5	70	18-128	
Diethylphthalate	ug/L		1.0 U			B
Dimethylphthalate	ug/L		1.0 U			
Fluoranthene	ug/L	5	4.5	90	40-129	
Fluorene	ug/L	5	4.3	85	37-123	
Hexachloro-1,3-butadiene	ug/L		1.0 U			
Hexachlorobenzene	ug/L		1.0 U			
Hexachlorocyclopentadiene	ug/L		1.0 U			
Hexachloroethane	ug/L		1.0 U			
Indeno(1,2,3-cd)pyrene	ug/L	5	3.5	70	25-128	
Isophorone	ug/L		1.0 U			
N-Nitroso-di-n-propylamine	ug/L	5	4.2	84	34-115	
N-Nitrosodimethylamine	ug/L		1.0 U			
N-Nitrosodiphenylamine	ug/L		1.0 U			
Naphthalene	ug/L	5	3.9	78	31-124	
Nitrobenzene	ug/L		1.0 U			
Pentachlorophenol	ug/L	5	5.1	102	13-126	
Phenanthrene	ug/L	5	4.4	87	39-130	
Phenol	ug/L	5	1.6	32	11-50	
Pyrene	ug/L	5	4.7	93	26-166	
2,4,6-Tribromophenol (S)	%			92	17-103	
2-Fluorobiphenyl (S)	%			83	13-109	
2-Fluorophenol (S)	%			46	21-110	
Nitrobenzene-d5 (S)	%			81	14-104	
Phenol-d6 (S)	%			29	10-110	
Terphenyl-d14 (S)	%			99	23-141	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: Worcester Township

Pace Project No.: 30123439

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: OEXT/19769

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/19770

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/19772

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/19876

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c Analyte was detected in the associated method blank. No sample volume remains for re-extraction.

2c The bis(2-ethylhexyl)phthalate in this sample is believed to be laboratory contamination. The sample was re-extracted out of hold and did not have bis(2-ethylhexyl)phthalate in it. Results are reported from the original in hold sample extract.

B Analyte was detected in the associated method blank.

C9 Common Laboratory Contaminant.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Worcester Township
Pace Project No.: 30123439

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30123439002	MW-2	EPA 8011	GCSV/6896	EPA 8011	GCSV/6897
30123439007	Trip Blank	EPA 8011	GCSV/6896	EPA 8011	GCSV/6897
30123439001	MW-1	EPA 8015B	OEXT/19770	EPA 8015B	GCSV/6902
30123439005	MW-5	EPA 8015B	OEXT/19770	EPA 8015B	GCSV/6902
30123439001	MW-1	EPA 3510C	OEXT/19876	EPA 8082	GCSV/6931
30123439002	MW-2	EPA 3510C	OEXT/19876	EPA 8082	GCSV/6931
30123439003	MW-3	EPA 3510C	OEXT/19876	EPA 8082	GCSV/6931
30123439005	MW-5	EPA 3510C	OEXT/19876	EPA 8082	GCSV/6931
30123439001	MW-1	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439002	MW-2	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439003	MW-3	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439004	MW-4	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439005	MW-5	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439006	Potable Well	EPA 3005A	MPRP/13295	EPA 6010B	ICP/12606
30123439001	MW-1	EPA 7470A	MERP/5627	EPA 7470A	MERC/5389
30123439004	MW-4	EPA 7470A	MERP/5627	EPA 7470A	MERC/5389
30123439005	MW-5	EPA 7470A	MERP/5627	EPA 7470A	MERC/5389
30123439006	Potable Well	EPA 7470A	MERP/5627	EPA 7470A	MERC/5389
30123439002	MW-2	EPA 3510C	OEXT/19772	EPA 8270C by SIM	MSSV/6498
30123439003	MW-3	EPA 3510C	OEXT/19772	EPA 8270C by SIM	MSSV/6498
30123439001	MW-1	EPA 3510C	OEXT/19769	EPA 8270C	MSSV/6516
30123439004	MW-4	EPA 3510C	OEXT/19769	EPA 8270C	MSSV/6516
30123439005	MW-5	EPA 3510C	OEXT/19769	EPA 8270C	MSSV/6516
30123439006	Potable Well	EPA 3510C	OEXT/19769	EPA 8270C	MSSV/6516
30123439001	MW-1	EPA 8260B	MSV/20105		
30123439004	MW-4	EPA 8260B	MSV/20105		
30123439005	MW-5	EPA 8260B	MSV/20105		
30123439006	Potable Well	EPA 8260B	MSV/20105		
30123439002	MW-2	EPA 8260B	MSV/20117		
30123439003	MW-3	EPA 8260B	MSV/20117		
30123439007	Trip Blank	EPA 8260B	MSV/20117		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Environmental Standards

Project # 30123439

Courier: [X] Fed Ex [] UPS [] USPS [] Client [] Commercial [] Pace Other

Tracking #: 802475456080

Custody Seal on Cooler/Box Present: [] yes [X] no Seals intact: [] yes [] no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap [X] Bubble Bags [X] None Other

Thermometer Used 7 Type of Ice: [X] Wet Blue None [X] Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.8 °C Correction Factor: -0.1 °C Final Temp: 1.7 °C

Date and Initials of person examining contents: ARM 6/25/14

Table with 16 rows and 3 columns: Item description, checkboxes (Yes/No/N/A), and Comments. Includes items like Chain of Custody Present, Samples Arrived within Hold Time, and Sample Labels match COC.

Client Notification/ Resolution: Person Contacted: Joe Kraycik Date/Time: 6/25/14 9:55 am. Comments/ Resolution: Issues on samples: 001: 1335, 002: 11640, 003: 1245, 004: 1520, 005: 1020, 006: 0850, 007: is a TB

Project Manager Review: [Signature] Date: 6/25/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



30123439

Project Number:

Client Name: Environmental Standards

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved (Y)	N O & G (1L)	TPH (1L)	VOA (40 ml / 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT				3						Y			3										
002	WT				3									3										
003	WT				3									3										
004	WT				2									3										
005	WT				3									3										
006	WT				2									3										
007	WT													2										

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

July 30, 2014

Project: Worcester Twp

Submittal Date: 07/18/2014

Group Number: 1490134

State of Sample Origin: PA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
MW-1 Grab Groundwater	7538320
MW-2 Grab Groundwater	7538321
MW-3 Grab Groundwater	7538322
MW-4 Grab Groundwater	7538323
MW-5 Grab Groundwater	7538324
Potable Well Grab Potable Water	7538325
Trip Blank Water	7538326

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Environmental Standards, Inc.

Attn: Joseph Kraycik

Respectfully Submitted,



Lynn M. Frederiksen
Principal Specialist Group Leader

(717) 556-7255

Project Name: Worcester Twp
LL Group #: 1490134

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8260B, GC/MS volatiles**

Batch #: T142022AA (Sample number(s): 7538320, 7538323-7538326)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: Acrylonitrile

SW-846 8270C, GC/MS Semivolatiles

Sample #s: 7538324

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
hexachlorobenzene

Sample #s: 7538320, 7538323, 7538325

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Batch #: 14202WAM026 (Sample number(s): 7538320, 7538323, 7538325)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD were below the acceptance window: Hexachlorobutadiene, 1,2,4-Trichlorobenzene

Batch #: 14205WAA026 (Sample number(s): 7538324)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD were below the acceptance window: Hexachlorobenzene

SW-846 8082, Pesticides/PCBs

Batch #: 142030006A (Sample number(s): 7538320-7538322, 7538324)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7538324

SW-846 6010B, Metals Dissolved

Batch #: 142021848001 (Sample number(s): 7538320, 7538323-7538324 UNSPK: P538838 BKG: P538838)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Selenium, Antimony

Batch #: 142041848002 (Sample number(s): 7538325 UNSPK: P539949 BKG: P539949)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Nickel, Zinc

Sample Description: MW-1 Grab Groundwater
Worcester Twp

LL Sample # WW 7538320
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10335	Acrolein	107-02-8	N.D.	40	1
10335	Acrylonitrile	107-13-1	N.D.	4	1
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1
10335	Bromoform	75-25-2	N.D.	0.5	1
10335	Bromomethane	74-83-9	N.D.	0.5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1
10335	Chloroethane	75-00-3	N.D.	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.					
10335	Chloroform	67-66-3	N.D.	0.5	1
10335	Chloromethane	74-87-3	N.D.	0.5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1
10335	Methylene Chloride	75-09-2	N.D.	2	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	1
04678	Anthracene	120-12-7	N.D.	0.1	1
04678	Benzidine	92-87-5	N.D.	20	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1

Sample Description: MW-1 Grab Groundwater
Worcester Twp

LL Sample # WW 7538320
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
04678	bis(2-Chloroisopropyl) ether Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.	39638-32-9	N.D.	0.5	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1
04678	Chrysene	218-01-9	N.D.	0.1	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1
04678	Diethylphthalate	84-66-2	N.D.	2	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1
04678	Dimethylphthalate	131-11-3	N.D.	2	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1
04678	1,2-Diphenylhydrazine	122-66-7	N.D.	0.5	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	1
04678	Fluoranthene	206-44-0	N.D.	0.1	1
04678	Fluorene	86-73-7	N.D.	0.1	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	1
04678	Hexachloroethane	67-72-1	N.D.	1	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
04678	Isophorone	78-59-1	N.D.	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.				
04678	Naphthalene	91-20-3	N.D.	0.1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1
04678	4-Nitrophenol	100-02-7	N.D.	10	1
04678	N-Nitrosodimethylamine	62-75-9	N.D.	2	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.				
04678	Di-n-octylphthalate	117-84-0	N.D.	2	1
04678	Pentachlorophenol	87-86-5	N.D.	1	1
04678	Phenanthrene	85-01-8	N.D.	0.1	1
04678	Phenol	108-95-2	N.D.	0.5	1

Sample Description: MW-1 Grab Groundwater
Worcester Twp

LL Sample # WW 7538320
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270C ug/l					
04678	Pyrene	129-00-0	N.D.	0.1	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.					
Pesticides/PCBs SW-846 8082 ug/l					
10227	PCB-1016	12674-11-2	N.D.	0.081	1
10227	PCB-1221	11104-28-2	N.D.	0.081	1
10227	PCB-1232	11141-16-5	N.D.	0.16	1
10227	PCB-1242	53469-21-9	N.D.	0.081	1
10227	PCB-1248	12672-29-6	N.D.	0.081	1
10227	PCB-1254	11097-69-1	N.D.	0.081	1
10227	PCB-1260	11096-82-5	N.D.	0.12	1
10227	Total PCBs	1336-36-3	N.D.	0.081	1
GC Petroleum SW-846 8015B ug/l					
08269	TPH-DRO water C10-C28	n.a.	72 J	30	1
Hydrocarbons					
Metals Dissolved SW-846 6010B mg/l					
07044	Antimony	7440-36-0	N.D.	0.0051	1
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07046	Barium	7440-39-3	0.0688	0.00033	1
07047	Beryllium	7440-41-7	N.D.	0.00067	1
07049	Cadmium	7440-43-9	N.D.	0.00033	1
07051	Chromium	7440-47-3	N.D.	0.0013	1
07053	Copper	7440-50-8	N.D.	0.0028	1
07055	Lead	7439-92-1	N.D.	0.0047	1
07061	Nickel	7440-02-0	0.0019 J	0.0016	1
07036	Selenium	7782-49-2	N.D.	0.0048	1
07066	Silver	7440-22-4	N.D.	0.0018	1
07022	Thallium	7440-28-0	N.D.	0.0051	1
07071	Vanadium	7440-62-2	N.D.	0.0019	1
07072	Zinc	7440-66-6	0.0046 J	0.0020	1
SW-846 7470A mg/l					
00259	Mercury	7439-97-6	N.D.	0.000060	1

Sample Description: MW-1 Grab Groundwater
Worcester Twp

LL Sample # WW 7538320
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR01

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10335	PPL VOCs	SW-846 8260B	1	T142022AA	07/22/2014	04:07	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T142022AA	07/22/2014	04:07	Sara E Johnson	1
04678	TCL SW846	SW-846 8270C	1	14202WAM026	07/23/2014	01:36	Brian K Graham	1
00813	Semivolatiles/Waters BNA Water Extraction	SW-846 3510C	1	14202WAM026	07/22/2014	09:25	Katheryne V Sponheimer	1
10227	PCBs in Water	SW-846 8082	1	142030006A	07/23/2014	01:52	Monica M Souders	1
11117	PCB Waters Extraction	SW-846 3510C	1	142030006A	07/22/2014	16:30	Seth A Farrier	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	142030031A	07/24/2014	15:48	Christine E Dolman	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	142030031A	07/23/2014	10:00	Anna E Stager	1
07044	Antimony	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07046	Barium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	142021848001	07/22/2014	13:10	Eric L Eby	1
07061	Nickel	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07022	Thallium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07071	Vanadium	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	142021848001	07/22/2014	06:41	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	142025713002	07/22/2014	09:21	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	142021848001	07/21/2014	22:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	142025713002	07/21/2014	23:30	Annamaria Kuhns	1

Sample Description: MW-2 Grab Groundwater
Worcester Twp

LL Sample # WW 7538321
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 16:25 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Isopropylbenzene	98-82-8	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Naphthalene	91-20-3	N.D.	1	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10943	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
07805	Anthracene	120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
07805	Chrysene	218-01-9	N.D.	0.1	1
07805	Fluorene	86-73-7	N.D.	0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
07805	Phenanthrene	85-01-8	N.D.	0.1	1
07805	Pyrene	129-00-0	N.D.	0.1	1
GC	Miscellaneous	SW-846 8011	ug/l	ug/l	
10398	Ethylene dibromide	106-93-4	N.D.	0.0096	1
Pesticides/PCBs	SW-846 8082	ug/l	ug/l		
10227	PCB-1016	12674-11-2	N.D.	0.081	1
10227	PCB-1221	11104-28-2	N.D.	0.081	1
10227	PCB-1232	11141-16-5	N.D.	0.16	1
10227	PCB-1242	53469-21-9	N.D.	0.081	1
10227	PCB-1248	12672-29-6	N.D.	0.081	1
10227	PCB-1254	11097-69-1	N.D.	0.081	1
10227	PCB-1260	11096-82-5	N.D.	0.12	1
10227	Total PCBs	1336-36-3	N.D.	0.081	1
Metals Dissolved	SW-846 6020	mg/l	mg/l		
06035	Lead	7439-92-1	N.D.	0.000082	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: MW-2 Grab Groundwater
Worcester Twp

LL Sample # WW 7538321
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 16:25 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10943	UST Waters Master	SW-846 8260B	1	F142031AA	07/23/2014	02:04	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F142031AA	07/23/2014	02:04	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	14200WAK026	07/22/2014	22:32	Chad A Moline	1
07807	BNA Water Extraction	SW-846 3510C	1	14200WAK026	07/21/2014	09:40	Katheryne V Sponheimer	1
10398	8011 Master Master	SW-846 8011	1	142020028A	07/23/2014	06:11	Matthew S Listner	1
10227	PCBs in Water	SW-846 8082	1	142030006A	07/23/2014	02:04	Monica M Souders	1
11117	PCB Waters Extraction	SW-846 3510C	1	142030006A	07/22/2014	16:30	Seth A Farrier	1
07786	EDB Extraction	SW-846 8011	1	142020028A	07/22/2014	13:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	142026050002A	07/29/2014	04:36	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	142026050002	07/23/2014	09:04	Micaela L Dishong	1

Sample Description: MW-3 Grab Groundwater
Worcester Twp

LL Sample # WW 7538322
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Isopropylbenzene	98-82-8	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Naphthalene	91-20-3	N.D.	1	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10943	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
07805	Anthracene	120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
07805	Chrysene	218-01-9	N.D.	0.1	1
07805	Fluorene	86-73-7	N.D.	0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
07805	Phenanthrene	85-01-8	N.D.	0.1	1
07805	Pyrene	129-00-0	N.D.	0.1	1
Pesticides/PCBs SW-846 8082			ug/l	ug/l	
10227	PCB-1016	12674-11-2	N.D.	0.081	1
10227	PCB-1221	11104-28-2	N.D.	0.081	1
10227	PCB-1232	11141-16-5	N.D.	0.16	1
10227	PCB-1242	53469-21-9	N.D.	0.081	1
10227	PCB-1248	12672-29-6	N.D.	0.081	1
10227	PCB-1254	11097-69-1	N.D.	0.081	1
10227	PCB-1260	11096-82-5	N.D.	0.12	1
10227	Total PCBs	1336-36-3	N.D.	0.081	1
Metals Dissolved SW-846 6020			mg/l	mg/l	
06035	Lead	7439-92-1	N.D.	0.000082	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	#2 Fuel oil, Diesel + TMBS	SW-846 8260B	1	F142031AA	07/23/2014 02:26	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F142031AA	07/23/2014 02:26	Brett W Kenyon	1

Sample Description: MW-3 Grab Groundwater
Worcester Twp

LL Sample # WW 7538322
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 13:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56
Reported: 07/30/2014 15:14

WOR03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
07805	PAHs in Water by GC/MS	SW-846 8270C	1	14200WAK026	07/22/2014	23:00	Chad A Moline	1
07807	BNA Water Extraction	SW-846 3510C	1	14200WAK026	07/21/2014	09:40	Katheryne V Sponheimer	1
10227	PCBs in Water	SW-846 8082	1	142030006A	07/23/2014	02:15	Monica M Souders	1
11117	PCB Waters Extraction	SW-846 3510C	1	142030006A	07/22/2014	16:30	Seth A Farrier	1
06035	Lead	SW-846 6020	1	142036050001A	07/25/2014	16:06	Maria A Orrs	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	142036050001	07/24/2014	08:23	Micaela L Dishong	1

Sample Description: **MW-4 Grab Groundwater**
Worcester Twp

LL Sample # **WW 7538323**
LL Group # **1490134**
Account # **05686**

Project Name: **Worcester Twp**

Collected: 07/16/2014 16:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
10335	Acrolein	107-02-8	N.D.	40	1
10335	Acrylonitrile	107-13-1	N.D.	4	1
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1
10335	Bromoform	75-25-2	N.D.	0.5	1
10335	Bromomethane	74-83-9	N.D.	0.5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1
10335	Chloroethane	75-00-3	N.D.	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	N.D.	0.5	1
10335	Chloromethane	74-87-3	N.D.	0.5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1
10335	Methylene Chloride	75-09-2	N.D.	2	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	1
04678	Anthracene	120-12-7	N.D.	0.1	1
04678	Benzidine	92-87-5	N.D.	20	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1

Sample Description: MW-4 Grab Groundwater
Worcester Twp

LL Sample # WW 7538323
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 16:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
04678	bis(2-Chloroisopropyl) ether Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.	39638-32-9	N.D.	0.5	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1
04678	Chrysene	218-01-9	N.D.	0.1	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1
04678	Diethylphthalate	84-66-2	N.D.	2	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1
04678	Dimethylphthalate	131-11-3	N.D.	2	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1
04678	1,2-Diphenylhydrazine	122-66-7	N.D.	0.5	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	1
04678	Fluoranthene	206-44-0	N.D.	0.1	1
04678	Fluorene	86-73-7	N.D.	0.1	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	1
04678	Hexachloroethane	67-72-1	N.D.	1	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
04678	Isophorone	78-59-1	N.D.	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.				
04678	Naphthalene	91-20-3	N.D.	0.1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1
04678	4-Nitrophenol	100-02-7	N.D.	10	1
04678	N-Nitrosodimethylamine	62-75-9	N.D.	2	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.				
04678	Di-n-octylphthalate	117-84-0	N.D.	2	1
04678	Pentachlorophenol	87-86-5	N.D.	1	1
04678	Phenanthrene	85-01-8	N.D.	0.1	1
04678	Phenol	108-95-2	N.D.	0.5	1

Sample Description: MW-4 Grab Groundwater
Worcester Twp

LL Sample # WW 7538323
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 16:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
04678	Pyrene	129-00-0	N.D.	0.1	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.					
Metals Dissolved SW-846 6010B			mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0051	1
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07046	Barium	7440-39-3	0.0582	0.00033	1
07047	Beryllium	7440-41-7	N.D.	0.00067	1
07049	Cadmium	7440-43-9	N.D.	0.00033	1
07051	Chromium	7440-47-3	N.D.	0.0013	1
07053	Copper	7440-50-8	N.D.	0.0028	1
07055	Lead	7439-92-1	N.D.	0.0047	1
07061	Nickel	7440-02-0	N.D.	0.0016	1
07036	Selenium	7782-49-2	N.D.	0.0048	1
07066	Silver	7440-22-4	N.D.	0.0018	1
07022	Thallium	7440-28-0	N.D.	0.0051	1
07071	Vanadium	7440-62-2	N.D.	0.0019	1
07072	Zinc	7440-66-6	N.D.	0.0020	1
SW-846 7470A			mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000060	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL VOCs	SW-846 8260B	1	T142022AA	07/22/2014 04:31	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T142022AA	07/22/2014 04:31	Sara E Johnson	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	14202WAM026	07/23/2014 02:33	Brian K Graham	1
00813	BNA Water Extraction	SW-846 3510C	1	14202WAM026	07/22/2014 09:25	Katheryne V Sponheimer	1
07044	Antimony	SW-846 6010B	1	142021848001	07/22/2014 06:45	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	142021848001	07/22/2014 06:45	Joanne M Gates	1

Sample Description: MW-4 Grab Groundwater
Worcester Twp

LL Sample # WW 7538323
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 16:00 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
07046	Barium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	142021848001	07/22/2014	13:14	Eric L Eby	1
07061	Nickel	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07022	Thallium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07071	Vanadium	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	142021848001	07/22/2014	06:45	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	142025713002	07/22/2014	09:36	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	142021848001	07/21/2014	22:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	142025713002	07/21/2014	23:30	Annamaria Kuhns	1

Sample Description: MW-5 Grab Groundwater
Worcester Twp

LL Sample # WW 7538324
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/17/2014 10:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
10335	Acrolein	107-02-8	N.D.	40	1
10335	Acrylonitrile	107-13-1	N.D.	4	1
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1
10335	Bromoform	75-25-2	N.D.	0.5	1
10335	Bromomethane	74-83-9	N.D.	0.5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1
10335	Chloroethane	75-00-3	N.D.	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	N.D.	0.5	1
10335	Chloromethane	74-87-3	N.D.	0.5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1
10335	Methylene Chloride	75-09-2	N.D.	2	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	1
04678	Anthracene	120-12-7	N.D.	0.1	1
04678	Benzidine	92-87-5	N.D.	20	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1

Sample Description: MW-5 Grab Groundwater
Worcester Twp

LL Sample # WW 7538324
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/17/2014 10:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	
04678	bis(2-Chloroisopropyl) ether	39638-32-9	N.D.	0.5	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.				
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1
04678	Chrysene	218-01-9	N.D.	0.1	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1
04678	Diethylphthalate	84-66-2	N.D.	2	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1
04678	Dimethylphthalate	131-11-3	N.D.	2	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1
04678	1,2-Diphenylhydrazine	122-66-7	N.D.	0.5	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	1
04678	Fluoranthene	206-44-0	N.D.	0.1	1
04678	Fluorene	86-73-7	N.D.	0.1	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	1
04678	Hexachloroethane	67-72-1	N.D.	1	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
04678	Isophorone	78-59-1	N.D.	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.				
04678	Naphthalene	91-20-3	N.D.	0.1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1
04678	4-Nitrophenol	100-02-7	N.D.	10	1
04678	N-Nitrosodimethylamine	62-75-9	N.D.	2	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.				
04678	Di-n-octylphthalate	117-84-0	N.D.	2	1
04678	Pentachlorophenol	87-86-5	N.D.	1	1
04678	Phenanthrene	85-01-8	N.D.	0.1	1
04678	Phenol	108-95-2	N.D.	0.5	1

Sample Description: MW-5 Grab Groundwater
Worcester Twp

LL Sample # WW 7538324
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/17/2014 10:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
04678	Pyrene	129-00-0	N.D.	0.1	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: hexachlorobenzene					
Pesticides/PCBs SW-846 8082			ug/l	ug/l	
10227	PCB-1016	12674-11-2	N.D.	0.081	1
10227	PCB-1221	11104-28-2	N.D.	0.081	1
10227	PCB-1232	11141-16-5	N.D.	0.16	1
10227	PCB-1242	53469-21-9	N.D.	0.081	1
10227	PCB-1248	12672-29-6	N.D.	0.081	1
10227	PCB-1254	11097-69-1	N.D.	0.081	1
10227	PCB-1260	11096-82-5	N.D.	0.12	1
10227	Total PCBs	1336-36-3	N.D.	0.081	1
GC Petroleum SW-846 8015B			ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	N.D.	30	1
Metals Dissolved SW-846 6010B			mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0051	1
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07046	Barium	7440-39-3	0.0732	0.00033	1
07047	Beryllium	7440-41-7	N.D.	0.00067	1
07049	Cadmium	7440-43-9	N.D.	0.00033	1
07051	Chromium	7440-47-3	N.D.	0.0013	1
07053	Copper	7440-50-8	N.D.	0.0028	1
07055	Lead	7439-92-1	N.D.	0.0047	1
07061	Nickel	7440-02-0	N.D.	0.0016	1
07036	Selenium	7782-49-2	0.0056 J	0.0048	1
07066	Silver	7440-22-4	N.D.	0.0018	1
07022	Thallium	7440-28-0	N.D.	0.0051	1
07071	Vanadium	7440-62-2	N.D.	0.0019	1
07072	Zinc	7440-66-6	N.D.	0.0020	1
SW-846 7470A			mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000060	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: MW-5 Grab Groundwater
Worcester Twp

LL Sample # WW 7538324
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/17/2014 10:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WOR05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL VOCs	SW-846 8260B	1	T142022AA	07/22/2014 04:54	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T142022AA	07/22/2014 04:54	Sara E Johnson	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	14205WAA026	07/25/2014 04:20	Brian K Graham	1
00813	BNA Water Extraction	SW-846 3510C	2	14205WAA026	07/24/2014 18:45	Nicholas W Shroyer	1
10227	PCBs in Water	SW-846 8082	1	142030006A	07/23/2014 02:27	Monica M Souders	1
11117	PCB Waters Extraction	SW-846 3510C	1	142030006A	07/22/2014 16:30	Seth A Farrier	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	142030031A	07/24/2014 16:10	Christine E Dolman	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	142030031A	07/23/2014 10:00	Anna E Stager	1
07044	Antimony	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07046	Barium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	142021848001	07/22/2014 13:17	Eric L Eby	1
07061	Nickel	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07022	Thallium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07071	Vanadium	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	142021848001	07/22/2014 06:48	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	142025713002	07/22/2014 09:38	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	142021848001	07/21/2014 22:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	142025713002	07/21/2014 23:30	Annamaria Kuhns	1

Sample Description: Potable Well Grab Potable Water
Worcester Twp

LL Sample # PW 7538325
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 09:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WORPW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10335	Acrolein	107-02-8	N.D.	40	1
10335	Acrylonitrile	107-13-1	N.D.	4	1
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1
10335	Bromoform	75-25-2	N.D.	0.5	1
10335	Bromomethane	74-83-9	N.D.	0.5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1
10335	Chloroethane	75-00-3	N.D.	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.					
10335	Chloroform	67-66-3	N.D.	0.5	1
10335	Chloromethane	74-87-3	N.D.	0.5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1
10335	Methylene Chloride	75-09-2	N.D.	2	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	1
04678	Anthracene	120-12-7	N.D.	0.1	1
04678	Benzidine	92-87-5	N.D.	21	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1

Sample Description: Potable Well Grab Potable Water
Worcester Twp

LL Sample # PW 7538325
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 09:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WORPW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			ug/l	ug/l	
04678	bis(2-Chloroisopropyl) ether Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.	39638-32-9	N.D.	0.5	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1
04678	Chrysene	218-01-9	N.D.	0.1	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1
04678	Diethylphthalate	84-66-2	N.D.	2	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1
04678	Dimethylphthalate	131-11-3	N.D.	2	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1
04678	1,2-Diphenylhydrazine	122-66-7	N.D.	0.5	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	1
04678	Fluoranthene	206-44-0	N.D.	0.1	1
04678	Fluorene	86-73-7	N.D.	0.1	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	1
04678	Hexachloroethane	67-72-1	N.D.	1	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
04678	Isophorone	78-59-1	N.D.	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.				
04678	Naphthalene	91-20-3	N.D.	0.1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1
04678	4-Nitrophenol	100-02-7	N.D.	10	1
04678	N-Nitrosodimethylamine	62-75-9	N.D.	2	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.				
04678	Di-n-octylphthalate	117-84-0	N.D.	2	1
04678	Pentachlorophenol	87-86-5	N.D.	1	1
04678	Phenanthrene	85-01-8	N.D.	0.1	1
04678	Phenol	108-95-2	N.D.	0.5	1

Sample Description: Potable Well Grab Potable Water
Worcester Twp

LL Sample # PW 7538325
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 09:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WORPW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270C ug/l					
04678	Pyrene	129-00-0	N.D.	0.1	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1
<p>The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.</p>					
Metals Dissolved SW-846 6010B mg/l					
07044	Antimony	7440-36-0	N.D.	0.0051	1
07035	Arsenic	7440-38-2	N.D.	0.0072	1
The EPA has set a maximum contaminant level of 0.01 mg/l for arsenic.					
07046	Barium	7440-39-3	0.0720	0.00033	1
<p>The EPA has set a maximum contaminant level of 2 mg/l for barium. The state of Pennsylvania has set a maximum contaminant level of 1 mg/l for barium.</p>					
07047	Beryllium	7440-41-7	N.D.	0.00067	1
The EPA has set a maximum contaminant level of 0.004 mg/l for beryllium.					
07049	Cadmium	7440-43-9	N.D.	0.00033	1
The EPA has set a maximum contaminant level of 0.005 mg/l for cadmium.					
07051	Chromium	7440-47-3	N.D.	0.0013	1
<p>The EPA has set a maximum contaminant level of 0.1 mg/l for chromium. The state of Pennsylvania has set a maximum contaminant level of 0.05 mg/l for chromium.</p>					
07053	Copper	7440-50-8	0.0036 J	0.0028	1
<p>The action level for copper in the lead and copper rule is 1.3 mg/l. Copper at these levels is not considered a direct health hazard, but can affect the taste of the water. Excessive copper levels may indicate a corrosive water if the system has copper plumbing.</p>					
07055	Lead	7439-92-1	0.0061 J	0.0047	1
07061	Nickel	7440-02-0	N.D.	0.0016	1
07036	Selenium	7782-49-2	N.D.	0.0048	1
07066	Silver	7440-22-4	N.D.	0.0018	1
07022	Thallium	7440-28-0	N.D.	0.0051	1
07071	Vanadium	7440-62-2	N.D.	0.0019	1
07072	Zinc	7440-66-6	0.0062 J	0.0020	1
<p>The Environmental Protection Agency (EPA) has established a secondary guideline of 5 mg/l for zinc in drinking water. Zinc at these levels is not generally considered a health hazard but will affect the taste of the water.</p>					
SW-846 7470A mg/l					
00259	Mercury	7439-97-6	N.D.	0.000060	1
The EPA has set a maximum contaminant level of 0.002 mg/l for mercury.					

Sample Description: Potable Well Grab Potable Water
Worcester Twp

LL Sample # PW 7538325
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 09:30 by MDH

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WORPW

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10335	PPL VOCs	SW-846 8260B	1	T142022AA	07/22/2014	05:18	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T142022AA	07/22/2014	05:18	Sara E Johnson	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	14202WAM026	07/23/2014	03:30	Brian K Graham	1
00813	BNA Water Extraction	SW-846 3510C	1	14202WAM026	07/22/2014	09:25	Katheryne V Sponheimer	1
07044	Antimony	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07035	Arsenic	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07046	Barium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07047	Beryllium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07049	Cadmium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07051	Chromium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07053	Copper	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07055	Lead	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07061	Nickel	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07036	Selenium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07066	Silver	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07022	Thallium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07071	Vanadium	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
07072	Zinc	SW-846 6010B	1	142041848002	07/25/2014	02:56	Tara L Snyder	1
00259	Mercury	SW-846 7470A	1	142045713002	07/25/2014	17:53	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	142041848002	07/24/2014	09:33	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	142045713002	07/24/2014	10:29	Micaela L Dishong	1

Sample Description: Trip Blank Water
Worcester Twp

LL Sample # WW 7538326
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 08:00
Submitted: 07/18/2014 15:56
Reported: 07/30/2014 15:14

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

WORTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10335	Acrolein	107-02-8	N.D.	40	1
10335	Acrylonitrile	107-13-1	N.D.	4	1
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1
10335	Bromoform	75-25-2	N.D.	0.5	1
10335	Bromomethane	74-83-9	N.D.	0.5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1
10335	Chloroethane	75-00-3	N.D.	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.					
10335	Chloroform	67-66-3	N.D.	0.5	1
10335	Chloromethane	74-87-3	N.D.	0.5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1
10335	Methylene Chloride	75-09-2	N.D.	2	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Miscellaneous SW-846 8011			ug/l	ug/l	
10398	Ethylene dibromide	106-93-4	N.D.	0.0097	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/15.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial# Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: Trip Blank Water
Worcester Twp

LL Sample # WW 7538326
LL Group # 1490134
Account # 05686

Project Name: Worcester Twp

Collected: 07/16/2014 08:00

Environmental Standards, Inc.
1140 Valley Forge Road
PO Box 810
Valley Forge PA 19482-0810

Submitted: 07/18/2014 15:56

Reported: 07/30/2014 15:14

WORTB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10335	PPL VOCs	SW-846 8260B	1	T142022AA	07/21/2014	22:56	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T142022AA	07/21/2014	22:56	Sara E Johnson	1
10398	8011 Master Master	SW-846 8011	1	142020028A	07/23/2014	06:27	Matthew S Listner	1
07786	EDB Extraction	SW-846 8011	1	142020028A	07/22/2014	13:00	William H Saadeh	1

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: F142031AA Sample number(s): 7538321-7538322								
Benzene	N.D.	0.5	ug/l	93		78-120		
1,2-Dichloroethane	N.D.	0.5	ug/l	89		65-135		
Ethylbenzene	N.D.	0.5	ug/l	89		79-120		
Isopropylbenzene	N.D.	0.5	ug/l	90		77-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	97		75-120		
Naphthalene	N.D.	1.	ug/l	78		47-126		
Toluene	N.D.	0.5	ug/l	93		80-120		
1,2,4-Trimethylbenzene	N.D.	0.5	ug/l	82		74-120		
1,3,5-Trimethylbenzene	N.D.	0.5	ug/l	84		74-120		
Xylene (Total)	N.D.	0.5	ug/l	89		80-120		
Batch number: T142022AA Sample number(s): 7538320,7538323-7538326								
Acrolein	N.D.	40.	ug/l	103	102	52-129	1	30
Acrylonitrile	N.D.	4.	ug/l	136*	130*	62-120	4	30
Benzene	N.D.	0.5	ug/l	114	110	78-120	4	30
Bromodichloromethane	N.D.	0.5	ug/l	99	96	73-120	4	30
Bromoform	N.D.	0.5	ug/l	87	86	61-120	1	30
Bromomethane	N.D.	0.5	ug/l	113	107	58-120	5	30
Carbon Tetrachloride	N.D.	0.5	ug/l	102	100	74-130	2	30
Chlorobenzene	N.D.	0.5	ug/l	102	101	80-120	1	30
Chloroethane	N.D.	0.5	ug/l	117	113	56-120	3	30
2-Chloroethyl Vinyl Ether	N.D.	2.	ug/l	105	107	54-126	2	30
Chloroform	N.D.	0.5	ug/l	112	108	80-122	4	30
Chloromethane	N.D.	0.5	ug/l	107	107	63-120	0	30
Dibromochloromethane	N.D.	0.5	ug/l	95	100	72-120	5	30
1,1-Dichloroethane	N.D.	0.5	ug/l	118	116	80-120	2	30
1,2-Dichloroethane	N.D.	0.5	ug/l	118	118	65-135	0	30
1,1-Dichloroethene	N.D.	0.5	ug/l	113	112	76-124	1	30
cis-1,2-Dichloroethene	N.D.	0.5	ug/l	106	101	80-120	5	30
trans-1,2-Dichloroethene	N.D.	0.5	ug/l	115	111	80-120	3	30
1,2-Dichloropropane	N.D.	0.5	ug/l	118	111	80-120	6	30
cis-1,3-Dichloropropene	N.D.	0.5	ug/l	105	101	80-120	4	30
trans-1,3-Dichloropropene	N.D.	0.5	ug/l	104	104	76-120	0	30
Ethylbenzene	N.D.	0.5	ug/l	109	109	79-120	1	30
Methylene Chloride	N.D.	2.	ug/l	120	115	80-120	4	30
1,1,2,2-Tetrachloroethane	N.D.	0.5	ug/l	111	111	70-120	1	30
Tetrachloroethene	N.D.	0.5	ug/l	103	99	80-120	4	30
Toluene	N.D.	0.5	ug/l	107	106	80-120	0	30
1,1,1-Trichloroethane	N.D.	0.5	ug/l	103	103	66-126	0	30
1,1,2-Trichloroethane	N.D.	0.5	ug/l	105	103	80-120	1	30
Trichloroethene	N.D.	0.5	ug/l	104	100	80-120	4	30
Trichlorofluoromethane	N.D.	0.5	ug/l	112	105	65-130	6	30
Vinyl Chloride	N.D.	0.5	ug/l	106	110	63-120	4	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDI</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>	
Xylene (Total)	N.D.	0.5	ug/l	101	103	80-120	2	30	
Batch number: 14200WAK026 Sample number (s): 7538321-7538322									
Anthracene	N.D.	0.1	ug/l	96	98	82-116	2	30	
Benzo(a)anthracene	N.D.	0.1	ug/l	102	106	81-126	4	30	
Benzo(a)pyrene	N.D.	0.1	ug/l	94	97	82-116	3	30	
Benzo(b)fluoranthene	N.D.	0.1	ug/l	99	101	82-121	2	30	
Benzo(g,h,i)perylene	N.D.	0.1	ug/l	100	102	76-128	2	30	
Chrysene	N.D.	0.1	ug/l	104	108	81-120	4	30	
Fluorene	N.D.	0.1	ug/l	96	98	80-117	2	30	
Indeno(1,2,3-cd)pyrene	N.D.	0.1	ug/l	99	98	80-126	0	30	
Phenanthrene	N.D.	0.1	ug/l	93	96	81-114	3	30	
Pyrene	N.D.	0.1	ug/l	98	100	81-112	1	30	
Batch number: 14202WAM026 Sample number (s): 7538320,7538323,7538325									
Acenaphthene	N.D.	0.1	ug/l	91	101	80-112	10	30	
Acenaphthylene	N.D.	0.1	ug/l	101	111	84-125	9	30	
Anthracene	N.D.	0.1	ug/l	94	102	82-116	8	30	
Benzidine	N.D.	20.	ug/l	70	65	20-94	7	30	
Benzo(a)anthracene	N.D.	0.1	ug/l	96	105	81-126	9	30	
Benzo(a)pyrene	N.D.	0.1	ug/l	90	99	82-116	9	30	
Benzo(b)fluoranthene	N.D.	0.1	ug/l	96	103	82-121	8	30	
Benzo(g,h,i)perylene	N.D.	0.1	ug/l	91	99	76-128	9	30	
Benzo(k)fluoranthene	N.D.	0.1	ug/l	93	102	81-122	10	30	
4-Bromophenyl-phenylether	N.D.	0.5	ug/l	86	98	82-118	13	30	
Butylbenzylphthalate	N.D.	2.	ug/l	96	103	79-119	7	30	
Di-n-butylphthalate	N.D.	2.	ug/l	94	98	80-119	5	30	
4-Chloro-3-methylphenol	N.D.	0.5	ug/l	97	98	80-123	2	30	
bis(2-Chloroethoxy)methane	N.D.	0.5	ug/l	103	103	77-115	0	30	
bis(2-Chloroethyl) ether	N.D.	0.5	ug/l	99	100	78-112	1	30	
bis(2-Chloroisopropyl) ether	N.D.	0.5	ug/l	86	89	56-119	3	30	
2-Chloronaphthalene	N.D.	0.4	ug/l	83	91	71-120	10	30	
2-Chlorophenol	N.D.	0.5	ug/l	96	98	76-111	2	30	
4-Chlorophenyl-phenylether	N.D.	0.5	ug/l	86	97	77-114	12	30	
Chrysene	N.D.	0.1	ug/l	98	107	81-120	9	30	
Dibenz(a,h)anthracene	N.D.	0.1	ug/l	92	99	83-124	7	30	
1,2-Dichlorobenzene	N.D.	0.5	ug/l	82	83	69-107	2	30	
1,3-Dichlorobenzene	N.D.	0.5	ug/l	73	74	69-107	1	30	
1,4-Dichlorobenzene	N.D.	0.5	ug/l	76	77	66-111	2	30	
3,3'-Dichlorobenzidine	N.D.	2.	ug/l	70	68	47-108	3	30	
2,4-Dichlorophenol	N.D.	0.5	ug/l	95	97	84-119	1	30	
Diethylphthalate	N.D.	2.	ug/l	91	93	70-118	3	30	
2,4-Dimethylphenol	N.D.	0.5	ug/l	88	89	81-114	1	30	
Dimethylphthalate	N.D.	2.	ug/l	83	81	43-128	3	30	
4,6-Dinitro-2-methylphenol	N.D.	5.	ug/l	75	81	56-145	7	30	
2,4-Dinitrophenol	N.D.	10.	ug/l	58	60	32-148	3	30	
2,4-Dinitrotoluene	N.D.	1.	ug/l	100	102	84-126	2	30	
2,6-Dinitrotoluene	N.D.	0.5	ug/l	101	104	81-124	3	30	
1,2-Diphenylhydrazine	N.D.	0.5	ug/l	107	112	74-124	5	30	
bis(2-Ethylhexyl)phthalate	N.D.	2.	ug/l	100	106	78-124	6	30	
Fluoranthene	N.D.	0.1	ug/l	91	100	82-121	9	30	
Fluorene	N.D.	0.1	ug/l	92	101	80-117	9	30	
Hexachlorobenzene	N.D.	0.1	ug/l	84	93	80-119	10	30	
Hexachlorobutadiene	N.D.	0.5	ug/l	49*	56*	61-120	14	30	
Hexachlorocyclopentadiene	N.D.	5.	ug/l	49	62	28-133	24	30	
Hexachloroethane	N.D.	1.	ug/l	61	61	55-109	1	30	

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Indeno (1,2,3-cd) pyrene	N.D.	0.1	ug/l	89	98	80-126	9	30
Isophorone	N.D.	0.5	ug/l	107	107	82-119	0	30
2-Methylphenol	N.D.	0.5	ug/l	94	96	72-111	1	30
4-Methylphenol	N.D.	0.5	ug/l	84	84	63-110	1	30
Naphthalene	N.D.	0.1	ug/l	88	91	75-108	3	30
Nitrobenzene	N.D.	0.5	ug/l	100	102	77-119	2	30
2-Nitrophenol	N.D.	0.5	ug/l	88	94	81-128	7	30
4-Nitrophenol	N.D.	10.	ug/l	59	66	25-95	12	30
N-Nitroso-di-n-propylamine	N.D.	0.5	ug/l	101	102	71-117	1	30
N-Nitrosodimethylamine	N.D.	2.	ug/l	84	82	38-98	2	30
N-Nitrosodiphenylamine	N.D.	0.5	ug/l	102	105	80-115	2	30
Di-n-octylphthalate	N.D.	2.	ug/l	100	110	78-129	9	30
Pentachlorophenol	N.D.	1.	ug/l	79	84	54-124	6	30
Phenanthrene	N.D.	0.1	ug/l	92	99	81-114	7	30
Phenol	N.D.	0.5	ug/l	55	55	31-79	1	30
Pyrene	N.D.	0.1	ug/l	92	99	81-112	8	30
1,2,4-Trichlorobenzene	N.D.	0.5	ug/l	72*	77	77-111	7	30
2,4,6-Trichlorophenol	N.D.	0.5	ug/l	89	94	84-119	6	30

Batch number: 14205WAA026

Sample number(s): 7538324

Acenaphthene	N.D.	0.1	ug/l	94	91	80-112	3	30
Acenaphthylene	N.D.	0.1	ug/l	100	99	84-125	2	30
Anthracene	N.D.	0.1	ug/l	91	89	82-116	2	30
Benzidine	N.D.	20.	ug/l	51	58	20-94	11	30
Benzo (a) anthracene	N.D.	0.1	ug/l	96	96	81-126	1	30
Benzo (a) pyrene	N.D.	0.1	ug/l	97	91	82-116	6	30
Benzo (b) fluoranthene	N.D.	0.1	ug/l	97	95	82-121	2	30
Benzo (g,h,i) perylene	N.D.	0.1	ug/l	95	91	76-128	4	30
Benzo (k) fluoranthene	N.D.	0.1	ug/l	101	95	81-122	6	30
4-Bromophenyl-phenylether	N.D.	0.5	ug/l	87	87	82-118	0	30
Butylbenzylphthalate	N.D.	2.	ug/l	94	93	79-119	1	30
Di-n-butylphthalate	N.D.	2.	ug/l	87	86	80-119	1	30
4-Chloro-3-methylphenol	N.D.	0.5	ug/l	92	89	80-123	3	30
bis (2-Chloroethoxy) methane	N.D.	0.5	ug/l	94	92	77-115	2	30
bis (2-Chloroethyl) ether	N.D.	0.5	ug/l	88	87	78-112	1	30
bis (2-Chloroisopropyl) ether	N.D.	0.5	ug/l	83	80	56-119	4	30
2-Chloronaphthalene	N.D.	0.4	ug/l	90	88	71-120	2	30
2-Chlorophenol	N.D.	0.5	ug/l	85	84	76-111	1	30
4-Chlorophenyl-phenylether	N.D.	0.5	ug/l	95	94	77-114	1	30
Chrysene	N.D.	0.1	ug/l	99	96	81-120	3	30
Dibenz (a,h) anthracene	N.D.	0.1	ug/l	96	92	83-124	4	30
1,2-Dichlorobenzene	N.D.	0.5	ug/l	86	85	69-107	1	30
1,3-Dichlorobenzene	N.D.	0.5	ug/l	83	82	69-107	1	30
1,4-Dichlorobenzene	N.D.	0.5	ug/l	84	83	66-111	1	30
3,3'-Dichlorobenzidine	N.D.	2.	ug/l	73	77	47-108	4	30
2,4-Dichlorophenol	N.D.	0.5	ug/l	95	93	84-119	3	30
Diethylphthalate	N.D.	2.	ug/l	96	88	70-118	8	30
2,4-Dimethylphenol	N.D.	0.5	ug/l	87	84	81-114	3	30
Dimethylphthalate	N.D.	2.	ug/l	94	90	43-128	4	30
4,6-Dinitro-2-methylphenol	N.D.	5.	ug/l	81	83	56-145	2	30
2,4-Dinitrophenol	N.D.	10.	ug/l	74	76	32-148	3	30
2,4-Dinitrotoluene	N.D.	1.	ug/l	105	102	84-126	3	30
2,6-Dinitrotoluene	N.D.	0.5	ug/l	103	101	81-124	1	30
1,2-Diphenylhydrazine	N.D.	0.5	ug/l	89	89	74-124	0	30
bis (2-Ethylhexyl) phthalate	N.D.	2.	ug/l	92	90	78-124	2	30
Fluoranthene	N.D.	0.1	ug/l	91	89	82-121	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Fluorene	N.D.	0.1	ug/l	95	92	80-117	3	30
Hexachlorobenzene	N.D.	0.1	ug/l	77*	79*	80-119	3	30
Hexachlorobutadiene	N.D.	0.5	ug/l	85	82	61-120	4	30
Hexachlorocyclopentadiene	N.D.	5.	ug/l	75	71	28-133	5	30
Hexachloroethane	N.D.	1.	ug/l	82	78	55-109	6	30
Indeno(1,2,3-cd)pyrene	N.D.	0.1	ug/l	93	89	80-126	4	30
Isophorone	N.D.	0.5	ug/l	95	93	82-119	2	30
2-Methylphenol	N.D.	0.5	ug/l	79	77	72-111	2	30
4-Methylphenol	N.D.	0.5	ug/l	72	71	63-110	1	30
Naphthalene	N.D.	0.1	ug/l	89	86	75-108	3	30
Nitrobenzene	N.D.	0.5	ug/l	94	90	77-119	3	30
2-Nitrophenol	N.D.	0.5	ug/l	87	85	81-128	2	30
4-Nitrophenol	N.D.	10.	ug/l	50	48	25-95	6	30
N-Nitroso-di-n-propylamine	N.D.	0.5	ug/l	88	87	71-117	1	30
N-Nitrosodimethylamine	N.D.	2.	ug/l	46	46	38-98	0	30
N-Nitrosodiphenylamine	N.D.	0.5	ug/l	95	96	80-115	1	30
Di-n-octylphthalate	N.D.	2.	ug/l	104	100	78-129	4	30
Pentachlorophenol	N.D.	1.	ug/l	84	83	54-124	2	30
Phenanthrene	N.D.	0.1	ug/l	89	89	81-114	0	30
Phenol	N.D.	0.5	ug/l	36	37	31-79	2	30
Pyrene	N.D.	0.1	ug/l	92	89	81-112	3	30
1,2,4-Trichlorobenzene	N.D.	0.5	ug/l	89	87	77-111	2	30
2,4,6-Trichlorophenol	N.D.	0.5	ug/l	93	91	84-119	2	30
Batch number: 142020028A	Sample number(s): 7538321,7538326							
Ethylene dibromide	N.D.	0.010	ug/l	120	119	60-140	1	20
Batch number: 142030006A	Sample number(s): 7538320-7538322,7538324							
PCB-1016	N.D.	0.080	ug/l	99	106	60-117	7	30
PCB-1221	N.D.	0.080	ug/l					
PCB-1232	N.D.	0.16	ug/l					
PCB-1242	N.D.	0.080	ug/l					
PCB-1248	N.D.	0.080	ug/l					
PCB-1254	N.D.	0.080	ug/l					
PCB-1260	N.D.	0.12	ug/l	116	118	67-128	3	30
Total PCBs	N.D.	0.080	ug/l					
Batch number: 142030031A	Sample number(s): 7538320,7538324							
TPH-DRO water C10-C28	N.D.	32.	ug/l	80	83	73-120	3	20
Batch number: 142021848001	Sample number(s): 7538320,7538323-7538324							
Antimony	N.D.	0.0051	mg/l	105		88-111		
Arsenic	N.D.	0.0072	mg/l	105		90-113		
Barium	N.D.	0.00033	mg/l	101		90-110		
Beryllium	N.D.	0.00067	mg/l	98		90-111		
Cadmium	N.D.	0.00033	mg/l	103		90-112		
Chromium	N.D.	0.0013	mg/l	100		90-110		
Copper	N.D.	0.0028	mg/l	102		90-112		
Lead	N.D.	0.0047	mg/l	108		88-116		
Nickel	N.D.	0.0016	mg/l	107		90-117		
Selenium	N.D.	0.0048	mg/l	103		89-113		
Silver	N.D.	0.0018	mg/l	81		80-120		
Thallium	N.D.	0.0051	mg/l	90		90-118		
Vanadium	N.D.	0.0019	mg/l	103		90-110		
Zinc	N.D.	0.0020	mg/l	101		90-110		

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 142025713002	Sample number(s): 7538320, 7538323-7538324							
Mercury	N.D.	0.00006	mg/l	85		80-120		
		0						
Batch number: 142026050002A	Sample number(s): 7538321							
Lead	N.D.	0.00008	mg/l	100		90-110		
		2						
Batch number: 142036050001A	Sample number(s): 7538322							
Lead	N.D.	0.00008	mg/l	104		90-110		
		2						
Batch number: 142041848002	Sample number(s): 7538325							
Antimony	N.D.	0.0051	mg/l	106		88-111		
Arsenic	N.D.	0.0072	mg/l	108		90-113		
Barium	N.D.	0.00033	mg/l	106		90-110		
Beryllium	N.D.	0.00067	mg/l	105		90-111		
Cadmium	N.D.	0.00033	mg/l	107		90-112		
Chromium	N.D.	0.0013	mg/l	105		90-110		
Copper	N.D.	0.0028	mg/l	110		90-112		
Lead	N.D.	0.0047	mg/l	111		88-116		
Nickel	N.D.	0.0016	mg/l	112		90-117		
Selenium	N.D.	0.0048	mg/l	105		89-113		
Silver	N.D.	0.0018	mg/l	114		80-120		
Thallium	N.D.	0.0051	mg/l	108		90-118		
Vanadium	N.D.	0.0019	mg/l	107		90-110		
Zinc	N.D.	0.0020	mg/l	107		90-110		
Batch number: 142045713002	Sample number(s): 7538325							
Mercury	N.D.	0.00006	mg/l	115		80-120		
		0						

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: F142031AA	Sample number(s): 7538321-7538322 UNSPK: P538772								
Benzene	99	101	72-134	1	30				
1,2-Dichloroethane	92	91	63-142	0	30				
Ethylbenzene	95	95	71-134	1	30				
Isopropylbenzene	95	99	75-128	4	30				
Methyl Tertiary Butyl Ether	100	100	72-126	0	30				
Naphthalene	88	87	52-125	1	30				
Toluene	94	99	80-125	6	30				
1,2,4-Trimethylbenzene	96	92	72-130	4	30				
1,3,5-Trimethylbenzene	95	94	65-132	1	30				
Xylene (Total)	92	94	79-125	2	30				
Batch number: 142020028A	Sample number(s): 7538321, 7538326 UNSPK: P534854								
Ethylene dibromide	124	138	60-140	10	20				

*- Outside of specification

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Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 142021848001	Sample number(s): 7538320, 7538323-7538324 UNSPK: P538838 BKG: P538838								
Antimony	108	107	76-122	0	20	N.D.	0.0060 J	200* (1)	20
Arsenic	108	110	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	102	101	78-125	1	20	0.0450	0.0452	0	20
Beryllium	98	98	87-114	0	20	N.D.	N.D.	0 (1)	20
Cadmium	102	102	75-122	0	20	N.D.	N.D.	0 (1)	20
Chromium	99	99	76-120	0	20	0.0018 J	0.0017 J	7 (1)	20
Copper	104	103	86-122	0	20	N.D.	N.D.	0 (1)	20
Lead	108	106	75-125	2	20	N.D.	N.D.	0 (1)	20
Nickel	106	105	79-123	0	20	N.D.	N.D.	0 (1)	20
Selenium	95	94	75-125	1	20	0.0062 J	0.0094 J	42* (1)	20
Silver	82	81	75-125	1	20	N.D.	N.D.	0 (1)	20
Thallium	87	87	75-125	1	20	N.D.	N.D.	0 (1)	20
Vanadium	103	103	90-117	0	20	0.0023 J	0.0021 J	10 (1)	20
Zinc	101	102	85-117	0	20	N.D.	N.D.	0 (1)	20
Batch number: 142025713002	Sample number(s): 7538320, 7538323-7538324 UNSPK: 7538320 BKG: 7538320								
Mercury	81	88	80-120	9	20	N.D.	N.D.	0 (1)	20
Batch number: 142026050002A	Sample number(s): 7538321 UNSPK: 7538321 BKG: 7538321								
Lead	100	102	89-120	2	20	N.D.	N.D.	0 (1)	20
Batch number: 142036050001A	Sample number(s): 7538322 UNSPK: P535922 BKG: P535922								
Lead	103	99	89-120	3	20	0.00057 J	0.00053 J	6 (1)	20
Batch number: 142041848002	Sample number(s): 7538325 UNSPK: P539949 BKG: P539949								
Antimony	105	105	76-122	0	20	N.D.	N.D.	0 (1)	20
Arsenic	100	107	81-123	7	20	N.D.	N.D.	0 (1)	20
Barium	97	102	78-125	5	20	0.0423	0.0417	1	20
Beryllium	98	104	87-114	6	20	N.D.	N.D.	0 (1)	20
Cadmium	95	103	75-122	8	20	N.D.	N.D.	0 (1)	20
Chromium	96	101	76-120	6	20	0.0027 J	0.0032 J	19 (1)	20
Copper	103	108	86-122	5	20	N.D.	N.D.	0 (1)	20
Lead	98	106	75-125	8	20	N.D.	N.D.	0 (1)	20
Nickel	97	104	79-123	7	20	0.0036 J	0.0082 J	80* (1)	20
Selenium	93	97	75-125	3	20	N.D.	N.D.	0 (1)	20
Silver	114	112	75-125	2	20	N.D.	N.D.	0 (1)	20
Thallium	95	100	75-125	5	20	N.D.	N.D.	0 (1)	20
Vanadium	100	105	90-117	5	20	0.0176	0.0188	7 (1)	20
Zinc	96	104	85-117	8	20	0.0036 J	0.0216	143* (1)	20
Batch number: 142045713002	Sample number(s): 7538325 UNSPK: P540618 BKG: P540618								
Mercury	97	98	80-120	1	20	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

Surrogate Quality Control

Analysis Name: VOCs- 5ml Water by 8260B UST
Batch number: F142031AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7538321	94	98	99	94
7538322	98	98	100	93
Blank	96	94	102	93
LCS	95	99	101	99
MS	95	98	97	96
MSD	95	99	100	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: VOCs- 5ml Water by 8260B
Batch number: T142022AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7538320	104	103	92	89
7538323	108	109	91	91
7538324	105	102	95	93
7538325	104	99	92	88
7538326	98	97	95	95
Blank	99	98	95	96
LCS	96	98	100	103
LCSD	95	91	101	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PAHs in Water by GC/MS
Batch number: 14200WAK026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7538321	85	83	59
7538322	91	92	79
Blank	94	94	100
LCS	96	96	100
LCSD	96	96	100
Limits:	60-123	67-116	53-139

Analysis Name: TCL SW846 Semivolatiles/Waters
Batch number: 14202WAM026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7538320	56	39	79	93	91	83
7538323	67	46	80	96	93	93
7538325	67	45	78	93	91	107
Blank	76	54	89	100	96	113
LCS	78	57	79	97	90	97
LCSD	78	57	87	99	97	103
Limits:	10-107	10-83	22-150	60-123	67-116	53-139

Analysis Name: TCL SW846 Semivolatiles/Waters
Batch number: 14205WAA026

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Standards, Inc.
Reported: 07/30/14 at 03:14 PM

Group Number: 1490134

Surrogate Quality Control

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7538324	52	32	73	93	96	96
Blank	54	33	75	97	99	106
LCS	55	36	77	92	94	95
LCSD	56	37	74	90	92	96
Limits:	10-107	10-83	22-150	60-123	67-116	53-139

Analysis Name: 8011 Master Master
Batch number: 142020028A
1,1,2,2-Tetrachloroethane

7538321	120
7538326	118
Blank	128
LCS	120
LCSD	119
MS	127
MSD	131

Limits: 46-136

Analysis Name: PCBs in Water
Batch number: 142030006A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7538320	99	54
7538321	84	40
7538322	127	58
7538324	18*	69
Blank	79	104
LCS	103	111
LCSD	109	115

Limits: 49-141 36-153

Analysis Name: TPH-DRO water C10-C28
Batch number: 142030031A
Orthoterphenyl

7538320	99
7538324	104
Blank	99
LCS	99
LCSD	99

Limits: 46-131

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 5686 For Eurofins Lancaster Laboratories Environmental use only
Group # 1490134 Sample # 7538320-26
Instructions on reverse side correspond with circled numbers.

COC #347165

1 Client Information				4 Matrix				5 Analysis Requested										For Lab Use Only																																							
Client: <u>Evo. SWS. Inc</u>		Acct. #:		<input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other:		Preservation Codes										FSC: _____																																									
Project Name/#: <u>Worcester Trap</u>		PWSID #:				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PPZ VOC</td><td>PPZ SVOC</td><td>PPZ Metals + Un. + Bc *</td><td>PCFS</td><td>DICO</td><td>PAPER SHET LIST VOC</td><td>PAPER SHET LIST SVOC</td><td>LEAD (DISSOLVED) *</td><td>ED13</td><td>PAPER SHET LIST CRAS</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>										PPZ VOC	PPZ SVOC	PPZ Metals + Un. + Bc *	PCFS	DICO	PAPER SHET LIST VOC	PAPER SHET LIST SVOC	LEAD (DISSOLVED) *	ED13	PAPER SHET LIST CRAS											SCR#: _____																					
PPZ VOC	PPZ SVOC	PPZ Metals + Un. + Bc *	PCFS	DICO	PAPER SHET LIST VOC											PAPER SHET LIST SVOC	LEAD (DISSOLVED) *	ED13	PAPER SHET LIST CRAS																																						
Project Manager: <u>J. Kravcek</u>		P.O. #:		<input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Other:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Sample Identification</th> <th colspan="2">Collected</th> <th rowspan="2">Grab</th> <th rowspan="2">Composite</th> <th rowspan="2">Soil</th> <th rowspan="2">Water</th> <th rowspan="2">Other:</th> <th rowspan="2">Total # of Containers</th> <th>PPZ VOC</th> <th>PPZ SVOC</th> <th>PPZ Metals + Un. + Bc *</th> <th>PCFS</th> <th>DICO</th> <th>PAPER SHET LIST VOC</th> <th>PAPER SHET LIST SVOC</th> <th>LEAD (DISSOLVED) *</th> <th>ED13</th> <th>PAPER SHET LIST CRAS</th> </tr> <tr> <th>Date</th> <th>Time</th> <th></th> </tr> </table>										Sample Identification		Collected		Grab	Composite	Soil	Water	Other:	Total # of Containers	PPZ VOC	PPZ SVOC	PPZ Metals + Un. + Bc *	PCFS	DICO	PAPER SHET LIST VOC	PAPER SHET LIST SVOC	LEAD (DISSOLVED) *	ED13	PAPER SHET LIST CRAS	Date	Time																			Preservation Codes H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ O=Other	
Sample Identification		Collected														Grab	Composite	Soil	Water							Other:	Total # of Containers	PPZ VOC	PPZ SVOC	PPZ Metals + Un. + Bc *	PCFS	DICO	PAPER SHET LIST VOC	PAPER SHET LIST SVOC	LEAD (DISSOLVED) *	ED13	PAPER SHET LIST CRAS																				
Date	Time																																																								
Sampler: <u>MD HASLW</u>		Quote #:		3 <input type="checkbox"/> Grab <input type="checkbox"/> Composite		6 Remarks (#1 THRU METEOROL)										H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ O=Other																																									
Name of state where samples were collected: <u>PA</u>																																																									
MW-1		071614	1300	<input checked="" type="checkbox"/>						9	3	2	1	1	2						* FEELS FINE																																				
MW-2		071614	1625							5						3	2	1	2		@ 0.45 um																																				
MW-3		071614	1330							7					3	2	1	2																																							
MW-4		071614	1600							6	3	2	1	X with																																											
MW-5		071714	1030							9	3	2	1	1	2																																										
POTABLE WELL		071614	0930							6	3	2	1																																												
TRAP BLANK		071614	0800							4	2				<input checked="" type="checkbox"/>			2																																							

7 Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: _____

E-mail address: _____

Relinquished by: <u>Mark D Haslwe</u>	Date: <u>07.18.14</u>	Time: <u>1150</u>	Received by: <u>[Signature]</u>	Date: <u>7.18.14</u>	Time: <u>1150</u>
Relinquished by: <u>[Signature]</u>	Date: <u>7.18.14</u>	Time: <u>1530</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u>[Signature]</u>	Date: <u>7/18/14</u>	Time: <u>1550</u>

8 Data Package Options (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) TX TRRP-13

Type IV (CLP SOW) MA MCP CT RCP

EDD Required? Yes No

If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt: 2.2 °C

acct# 5686 Cp# 1490134 sample# 7538320-26

Table 3
Groundwater Investigation Summary
Worcester Township - North Penn US Army Reserve Center

Monitoring Well	Revised Analyses
1	PPL VOCs, PPL SVOCs, PPL Metals with Vanadium and Barium, PCBs, DRO
2	All PA DEP Short List Parameters
3	PCBs and Combined PA DEP Short List Parameters for Oils (Fuel oil #1 thru Mineral Oil)
4	PPL VOCs, PPL SVOCs, PPL Metals with Vanadium and Barium
5	PPL VOCs, PPL SVOCs, PPL Metals with Vanadium and Barium, PCBs, DRO
Potable	PPL VOCs, PPL SVOCs, PPL Metals with Vanadium and Barium

Per J. Kraycik, use standard PPL VOC 8260 and PPL SVOC 8270 lists, plus any additional compounds listed below (with the exception of the "SUR"). LF 7/21/14

SAMPLE_I	MATRIX	RESULT	CAS_NUMBER	ANALYTE_NAME	METHOD
MW-1	Water	TRG	71-55-6	1,1,1-Trichloroethane	EPA 8260B
MW-1	Water	TRG	79-34-5	1,1,2,2-Tetrachloroethane	EPA 8260B
MW-1	Water	TRG	79-00-5	1,1,2-Trichloroethane	EPA 8260B
MW-1	Water	TRG	75-34-3	1,1-Dichloroethane	EPA 8260B
MW-1	Water	TRG	75-35-4	1,1-Dichloroethene	EPA 8260B
MW-1	Water	TRG	107-06-2	1,2-Dichloroethane	EPA 8260B
MW-1	Water	SUR	17060-07-0	1,2-Dichloroethane-d4 (S)	EPA 8260B
MW-1	Water	TRG	78-87-5	1,2-Dichloropropane	EPA 8260B
MW-1	Water	TRG	110-75-8	2-Chloroethylvinyl ether	EPA 8260B
MW-1	Water	SUR	460-00-4	4-Bromofluorobenzene (S)	EPA 8260B
MW-1	Water	TRG	107-02-8	Acrolein	EPA 8260B
MW-1	Water	TRG	107-13-1	Acrylonitrile	EPA 8260B
MW-1	Water	TRG	71-43-2	Benzene	EPA 8260B
MW-1	Water	TRG	75-27-4	Bromodichloromethane	EPA 8260B
MW-1	Water	TRG	75-25-2	Bromoform	EPA 8260B
MW-1	Water	TRG	74-83-9	Bromomethane	EPA 8260B
MW-1	Water	TRG	56-23-5	Carbon tetrachloride	EPA 8260B
MW-1	Water	TRG	108-90-7	Chlorobenzene	EPA 8260B
MW-1	Water	TRG	75-00-3	Chloroethane	EPA 8260B
MW-1	Water	TRG	67-66-3	Chloroform	EPA 8260B
MW-1	Water	TRG	74-87-3	Chloromethane	EPA 8260B
MW-1	Water	TRG	10061-01-5	cis-1,3-Dichloropropene	EPA 8260B
MW-1	Water	TRG	124-48-1	Dibromochloromethane	EPA 8260B
MW-1	Water	TRG	100-41-4	Ethylbenzene	EPA 8260B
MW-1	Water	TRG	75-09-2	Methylene Chloride	EPA 8260B
MW-1	Water	TRG	127-18-4	Tetrachloroethene	EPA 8260B
MW-1	Water	TRG	108-88-3	Toluene	EPA 8260B
MW-1	Water	SUR	2037-26-5	Toluene-d8 (S)	EPA 8260B
MW-1	Water	TRG	156-60-5	trans-1,2-Dichloroethene	EPA 8260B
MW-1	Water	TRG	10061-02-6	trans-1,3-Dichloropropene	EPA 8260B
MW-1	Water	TRG	79-01-6	Trichloroethene	EPA 8260B
MW-1	Water	TRG	75-01-4	Vinyl chloride	EPA 8260B
MW-1	Water	TRG	120-82-1	1,2,4-Trichlorobenzene	EPA 8270C
MW-1	Water	TRG	95-50-1	1,2-Dichlorobenzene	EPA 8270C
MW-1	Water	TRG	541-73-1	1,3-Dichlorobenzene	EPA 8270C
MW-1	Water	TRG	106-46-7	1,4-Dichlorobenzene	EPA 8270C
MW-1	Water	SUR	118-79-6	2,4,6-Tribromophenol (S)	EPA 8270C
MW-1	Water	TRG	88-06-2	2,4,6-Trichlorophenol	EPA 8270C
MW-1	Water	TRG	120-83-2	2,4-Dichlorophenol	EPA 8270C
MW-1	Water	TRG	105-67-9	2,4-Dimethylphenol	EPA 8270C
MW-1	Water	TRG	51-28-5	2,4-Dinitrophenol	EPA 8270C
MW-1	Water	TRG	121-14-2	2,4-Dinitrotoluene	EPA 8270C
MW-1	Water	TRG	99-08-0	2,6-Dinitrotoluene	EPA 8270C

MW-1	Water	TRG	534-52-1	4,6-Dinitro-2-methylphenol	EPA 8270C
MW-1	Water	TRG	101-55-3	4-Bromophenylphenyl ether	EPA 8270C
MW-1	Water	TRG	7005-72-3	4-Chlorophenylphenyl ether	EPA 8270C
MW-1	Water	TRG	100-02-7	4-Nitrophenol	EPA 8270C
MW-1	Water	TRG	83-32-9	Acenaphthene	EPA 8270C
MW-1	Water	TRG	208-96-8	Acenaphthylene	EPA 8270C
MW-1	Water	TRG	120-12-7	Anthracene	EPA 8270C
MW-1	Water	TRG	103-33-3	* Azobenzene	EPA 8270C
MW-1	Water	TRG	92-87-5	Benzidine	EPA 8270C
MW-1	Water	TRG	56-55-3	Benzo(a)anthracene	EPA 8270C
MW-1	Water	TRG	50-32-8	Benzo(a)pyrene	EPA 8270C
MW-1	Water	TRG	205-99-2	Benzo(b)fluoranthene	EPA 8270C
MW-1	Water	TRG	191-24-2	Benzo(g,h,i)perylene	EPA 8270C
MW-1	Water	TRG	207-08-9	Benzo(k)fluoranthene	EPA 8270C
MW-1	Water	TRG	111-91-1	bis(2-Chloroethoxy)methane	EPA 8270C
MW-1	Water	TRG	111-44-4	bis(2-Chloroethyl) ether	EPA 8270C
MW-1	Water	TRG	108-60-1	bis(2-Chloroisopropyl) ether	EPA 8270C
MW-1	Water	TRG	117-81-7	bis(2-Ethylhexyl)phthalate	EPA 8270C
MW-1	Water	TRG	85-68-7	Butylbenzylphthalate	EPA 8270C
MW-1	Water	TRG	218-01-9	Chrysene	EPA 8270C
MW-1	Water	TRG	53-70-3	Dibenz(a,h)anthracene	EPA 8270C
MW-1	Water	TRG	84-66-2	Diethylphthalate	EPA 8270C
MW-1	Water	TRG	131-11-3	Dimethylphthalate	EPA 8270C
MW-1	Water	TRG	84-74-2	Di-n-butylphthalate	EPA 8270C
MW-1	Water	TRG	117-84-0	Di-n-octylphthalate	EPA 8270C
MW-1	Water	TRG	206-44-0	Fluoranthene	EPA 8270C
MW-1	Water	TRG	86-73-7	Fluorene	EPA 8270C
MW-1	Water	TRG	87-68-3	Hexachloro-1,3-butadiene	EPA 8270C
MW-1	Water	TRG	118-74-1	Hexachlorobenzene	EPA 8270C
MW-1	Water	TRG	77-47-4	Hexachlorocyclopentadiene	EPA 8270C
MW-1	Water	TRG	67-72-1	Hexachloroethane	EPA 8270C
MW-1	Water	TRG	193-39-5	Indeno(1,2,3-cd)pyrene	EPA 8270C
MW-1	Water	TRG	78-59-1	Isophorone	EPA 8270C
MW-1	Water	TRG	91-20-3	Naphthalene	EPA 8270C
MW-1	Water	TRG	98-95-3	Nitrobenzene	EPA 8270C
MW-1	Water	SUR	4165-60-0	Nitrobenzene-d5 (S)	EPA 8270C
MW-1	Water	TRG	62-75-9	N-Nitrosodimethylamine	EPA 8270C
MW-1	Water	TRG	621-64-7	N-Nitroso-di-n-propylamine	EPA 8270C
MW-1	Water	TRG	86-30-6	N-Nitrosodiphenylamine	EPA 8270C
MW-1	Water	TRG	87-86-5	Pentachlorophenol	EPA 8270C
MW-1	Water	TRG	85-01-8	Phenanthrene	EPA 8270C
MW-1	Water	TRG	108-95-2	Phenol	EPA 8270C
MW-1	Water	SUR	13127-88-3	Phenol-d6 (S)	EPA 8270C
MW-1	Water	TRG	120-00-0	Pyrene	EPA 8270C

Client: Environmental Standards

Delivery and Receipt Information

Delivery Method: ELLE Courier Arrival Timestamp: 07/18/2014 15:56
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: PA

Arrival Condition Summary

Shipping Container Sealed:	<u>Yes</u>	Total Trip Blank Qty:	<u>4</u>
Custody Seal Present:	<u>Yes</u>	Trip Blank Type:	<u>2 HCl + 2 Na2S2O3</u>
Custody Seal Intact:	<u>Yes</u>	Air Quality Samples Present:	<u>No</u>
Samples Chilled:	<u>Yes</u>	Air Quality Flow Controllers Present:	<u>N/A</u>
Paperwork Enclosed:	<u>Yes</u>	Flow Controller Quantity:	<u>0</u>
Samples Intact:	<u>Yes</u>	Air Quality Returns:	<u>N/A</u>
Missing Samples:	<u>No</u>		
Extra Samples:	<u>No</u>		
Discrepancy in Container Qty on COC:	<u>Yes</u>		
Sample IDs on COC match Containers:	<u>Yes</u>		
Sample Date/Times match COC:	<u>Yes</u>		
VOA Vial Headspace \geq 6mm:	<u>No</u>		
VOA IDs (\geq 6mm):	<u>N/A</u>		

Unpacked by Wesley Miller (2308) at 16:52 on 07/18/2014

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Samples Collected Same Day as Receipt?</u>	<u>Elevated Temp?</u>
1	DT146	2.2	DT	Wet	Y	Bagged	N	N

Container Quantity Discrepancy Details

<u>Sample ID on COC</u>	<u>Container Qty. Received</u>	<u>Container Qty. on COC</u>	<u>Comments</u>
MW-5	10	9	Received 1 metals batch QC bottle

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

Inorganic Qualifiers

A	TIC is a possible aldol-condensation product	B	Value is $<$ CRDL, but \geq IDL
B	Analyte was also detected in the blank	E	Estimated due to interference
C	Pesticide result confirmed by GC/MS	M	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	N	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	S	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	U	Compound was not detected
P	Concentration difference between primary and confirmation columns $>25\%$	W	Post digestion spike out of control limits
U	Compound was not detected	*	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

APPENDIX B
Soil Boring Logs





SOIL BORING: **K SB01**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **5' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0			Gravel/Asphalt, dry (GP)	
1				
2				
3	48"/60"	BKGD	Red-brown Silty CLAY with some fine gravel, moist (CL)	
4				Collect Sample K SB01 from 4' at 08:55
5			Boring complete at 5' BGS	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

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K SB01 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **K SB02**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **5' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0	60"/60"	BKGD	Dark red-brown Silty CLAY with some fine gravel, moist (CL)	
1				
2				
3				
4				Collect Sample K SB02 from 4' at 08:50
5			Boring complete at 5' BGS	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

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K SB02 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **K SB03**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **5' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0			Asphalt, dry (GP)	
1				
2				
3	48"/60"	BKGD	Brown-red Silty CLAY with some fine gravel, moist (CL)	
4				Collect Sample K SB03 from 4' at 09:10
5			Boring complete at 5' BGS	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

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K SB03 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **K SB04**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **5' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0			Asphalt, dry (GP)	
1				
2				
3	42"/60"	BKGD	Red-brown Silty CLAY with some fine gravel, moist (CL)	
4				Collect Sample K SB04 from 4' at 09:05
5			Boring complete at 5' BGS	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

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K SB04 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **L SB01**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **8' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2				
3	60"/60"			
4		BKGD	Brown-red Silty CLAY with some fine gravel, moist (CL)	
5				
6	36"/60"			
7				
8			Refusal at 8' BGS	Collect Sample L SB01 from 8' at 12:20
9				
10				
11				
12				
13				
14				
15				
16				

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L SB01 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **L SB02**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **7' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0	48"/60"	BKGD	Red-brown Silty CLAY with some fine gravel, dry (CL)	Collect Sample L SB02 from 1.5' at 12:30
1				
2				
3	24"/60"	BKGD	Brown/green Silty SAND, dry (SM)	
4				
5				
6			Light brown/green Silty SAND, dry (SM)	Collect Sample L SB02 from 7' at 12:35
7			Refusal at 7' BGS	
8				
9				
10				
11				
12				
13				
14				
15				
16				

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L SB02 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **M SB01**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **10' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0			Gravel/fill, dry (GP)	
1				Collect Sample M SB01 from 1.5' at 11:05
2	36"/60"			
3				
4				
5		BKGD	Dark red-brown Clayey SILT with some fine gravel, dry (ML)	
6				
7	48"/60"			
8				
9				Collect Sample M SB01 from 9.5' at 11:10
10			Boring complete at 10' BGS	
11				
12				
13				
14				
15				
16				

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M SB01 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **M SB02**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **10' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2	36"/60"			Collect Sample M SB02 from 1.5' at 11:20
3				
4				
5		BKGD	Dark red-brown Silty CLAY with some fine gravel, moist (CL)	
6				
7	36"/60"			
8				
9				
10				Collect Sample M SB02 from 9.5' at 11:25
11				
12				
13				
14				
15				
16				
			Boring complete at 10' BGS	

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M SB02 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **M SB03**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **9' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				Collect Sample M SB03 from 1.5' at 11:30
2	48"/60"	BKGD	Dark red-brown Silty CLAY with some fine gravel, moist (CL)	
3				
4				
5				
6	36"/48"		Dark red-brown Silty CLAY with some fine gravel, dry (CL)	
7				
8				
9			Refusal at 9' BGS	Collect Sample M SB03 from 9' at 11:35
10				
11				
12				
13				
14				
15				
16				

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M SB03 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **M SB04**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **10' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2	48"/60"	BKGD	Dark red-brown Silty CLAY with some fine gravel, dry (CL)	Collect Sample M SB04 from 1.5' at 11:50
3				
4				
5				
6	60"/60"	BKGD	Dark red-brown Silty CLAY with some fine gravel, moist (CL)	
7				
8				
9				
10				
11			Boring complete at 10' BGS	
12				
13				
14				
15				
16				

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M SB04 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **O 01 SB01**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **15' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2				
3	48"/60"			
4				
5				
6				
7	60"/60"	BKGD	Red-brown Silty CLAY with some medium sand, moist (CL)	
8				
9				
10				Collect Sample O 01 SB01 from 10' at 10:15
11				
12				
13	48"/60"			
14				
15			Boring complete at 15' BGS	
16				

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O 01 SB01 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **O 01 SB02**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **13' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2	60"/60"			
3				
4				
5			Dark red-brown Silty CLAY with some sand, dry (CL)	
6		BKGD		
7	60"/60"			
8				
9				
10			slough	Collect Sample O 01 SB02 from 10' at 10:00
11	36"/60"		Dark red-brown Silty CLAY with some sand, dry (CL)	
12				
13			Refusal at 13' BGS	
14				
15				
16				

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O 01 SB02 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **O 01 SB03**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **15' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
---------------	-------------------	-----------	-----------------------------	---------

0				
1				
2				
3	60"/60"			
4				
5				
6				
7	60"/60"	BKGD	Dark red-brown Silty CLAY with some medium sand, dry (CL)	
8				
9				
10				Collect Sample O 01 SB03 from 10' at 09:45
11				
12	60"/60"			
13				
14				
15			Boring complete at 15' BGS	
16				

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O 01 SB03 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING: **O 01 SB04**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **13' BGS**

WATER DEPTH: **NOT ENCOUNTERED**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
------------------	----------------------	-----------	-----------------------------	---------

0				
1				
2	60"/60"			
3				
4			Red-brown Silty CLAY with some fine gravel, moist (CL)	
5				
6		BKGD		
7	60"/60"			
8				
9				
10				Collect Sample O 01 SB04 from 10' at 10:35
11	48"/60"		Red-brown SILT with some medium sand, dry (SM)	
12				
13			Refusal at 13' BGS	
14				
15				
16				

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O 01 SB04 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



SOIL BORING:

**O 09 SB01
E SB01**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **05/27/14**

DRILL RIG: **GEOPROBE 7730 DT**

LOGGED BY: **MARK HASLETT/MEGAN FILIPOVITS**

DRILLING METHOD: **DIRECT PUSH**

GROUND ELEVATION (FT MSL): **NOT SURVEYED**

TOTAL DEPTH: **10' BGS**

WATER DEPTH: **5' BGS**

DEPTH IN FEET	RECOVERY (INCHES)	PID (PPM)	SOIL DESCRIPTION/ LITHOLOGY	REMARKS
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0			Asphalt, dry (GP)	
1				Collect Sample O 09 SB01 from 0.5' at 12:55
2	48"/60"		Dark brown Silty CLAY with some fine gravel, dry (CL)	
3				
4				
5		BKGD		
6				
7	60"/60"		Brown Silty CLAY, very wet (CL)	
8				
9				
10			Boring complete at 10' BGS	Collect Sample E SB01 from 10' at 13:00
11				
12				
13				
14				
15				
16				

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O 09 SB01 E SB01 SOIL BORING LOG	PROJECT NO.: 20146456.A		CREATION DATE: MAY 29, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	

APPENDIX C
Monitoring Well Construction Logs





MONITORING WELL #: **MW-1**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **06/03/14**

DRILL RIG: **SANDVIK DRILLTECH**

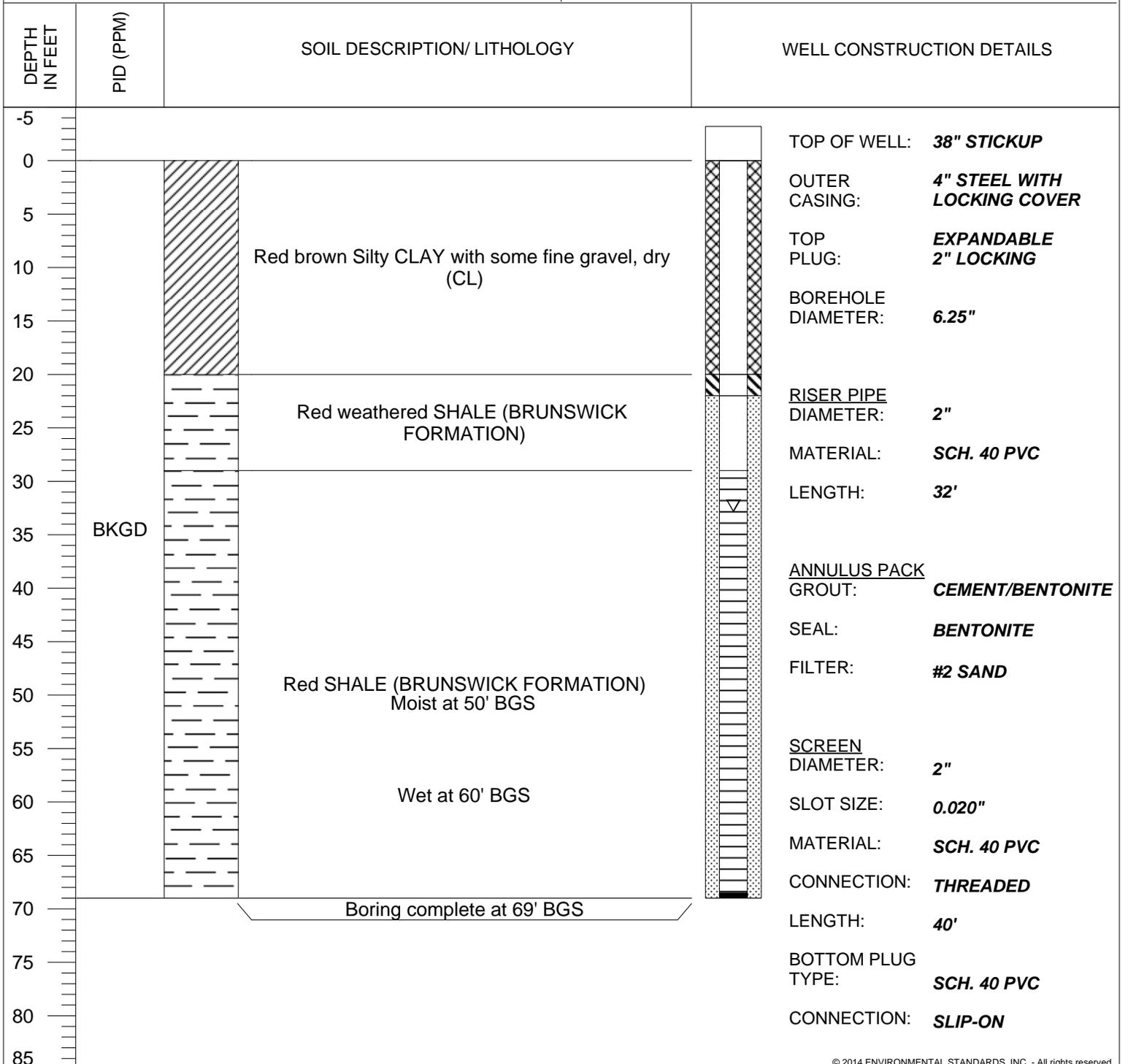
LOGGED BY: **MARK HASLETT**

DRILLING METHOD: **AIR ROTARY**

TOC ELEVATION: **116.33'**

WELL DEPTH: **69' BGS**

WATER DEPTH: **32.78'**



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MW-1 MONITORING WELL LOG	PROJECT NO.: 20146456.A		CREATION DATE: JUNE 12, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



MONITORING WELL #: **MW-2**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **06/03/14**

DRILL RIG: **SANDVIK DRILLTECH**

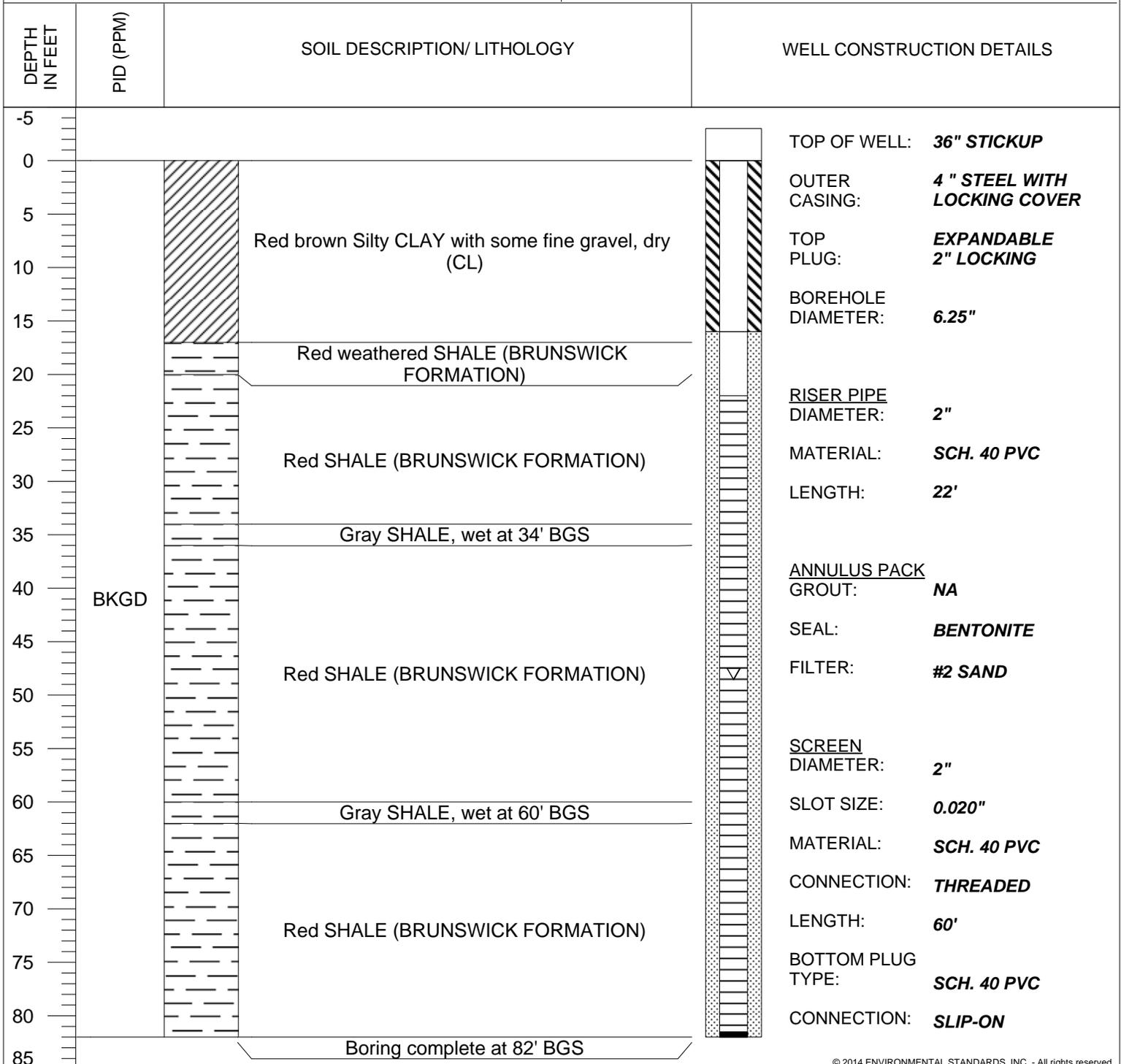
LOGGED BY: **MARK HASLETT**

DRILLING METHOD: **AIR ROTARY**

TOC ELEVATION: **105.80'**

WELL DEPTH: **82' BGS**

WATER DEPTH: **48.52'**



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MW-2 MONITORING WELL LOG	PROJECT NO.: 20146456.A		CREATION DATE: JUNE 12, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



MONITORING WELL #: **MW-3**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **06/09/14**

DRILL RIG: **SANDVIK DRILLTECH**

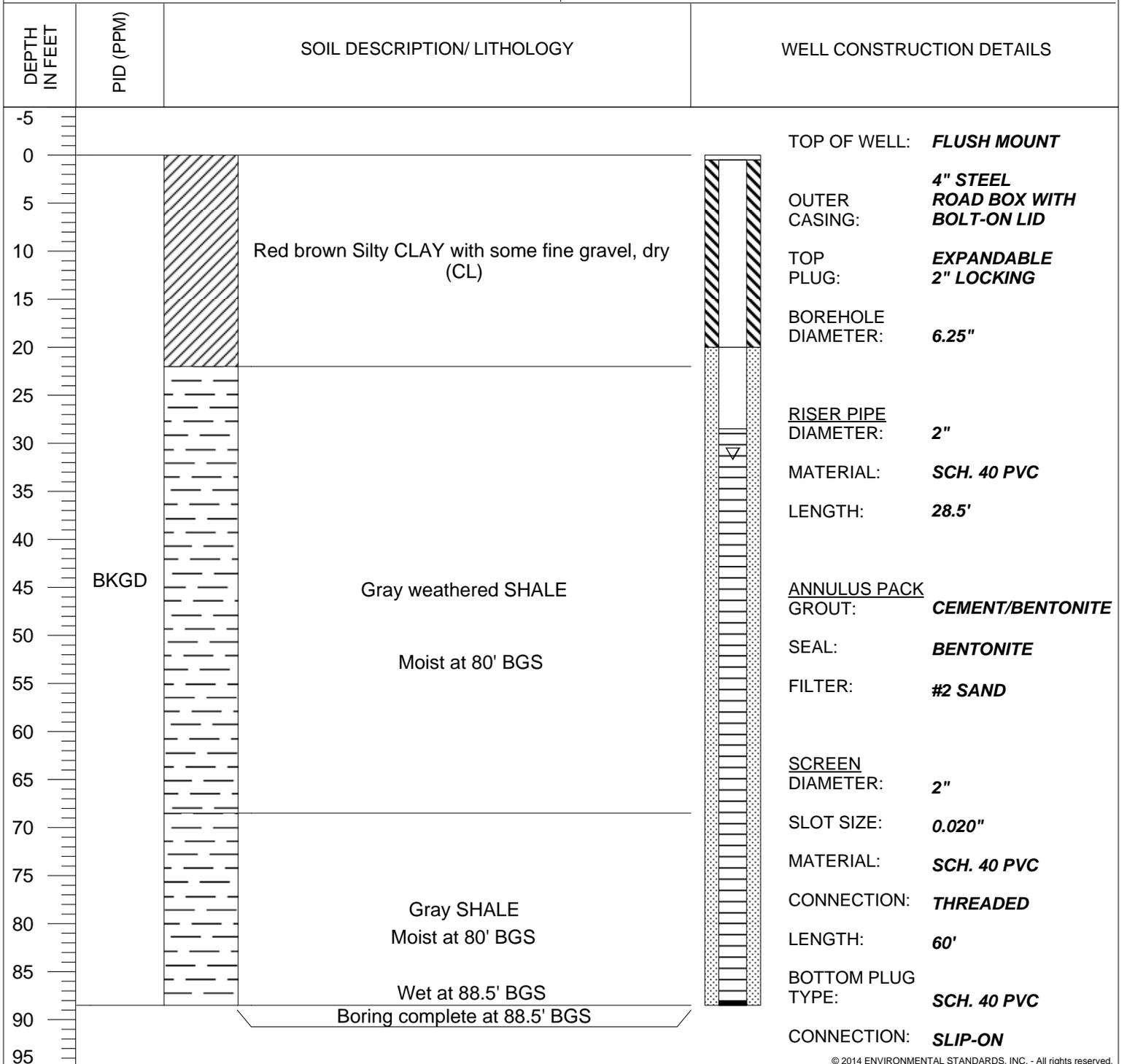
LOGGED BY: **MEGAN FILIPOVITS**

DRILLING METHOD: **AIR ROTARY**

TOC ELEVATION: **100.41'**

WELL DEPTH: **88.5' BGS**

WATER DEPTH: **31.58'**



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MW-3 MONITORING WELL LOG	PROJECT NO.: 20146456.A		CREATION DATE: JUNE 12, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	



MONITORING WELL #: **MW-4**

SITE LOCATION: **1625 BERKS ROAD
NORRISTOWN, PENNSYLVANIA**

PROJECT NAME: **FORMER N. PENN ARMY RESERVE
CENTER PHASE II**

DRILLING COMPANY: **ALLIED WELL DRILLING**

DATE COMPLETED: **06/03/14**

DRILL RIG: **SANDVIK DRILLTECH**

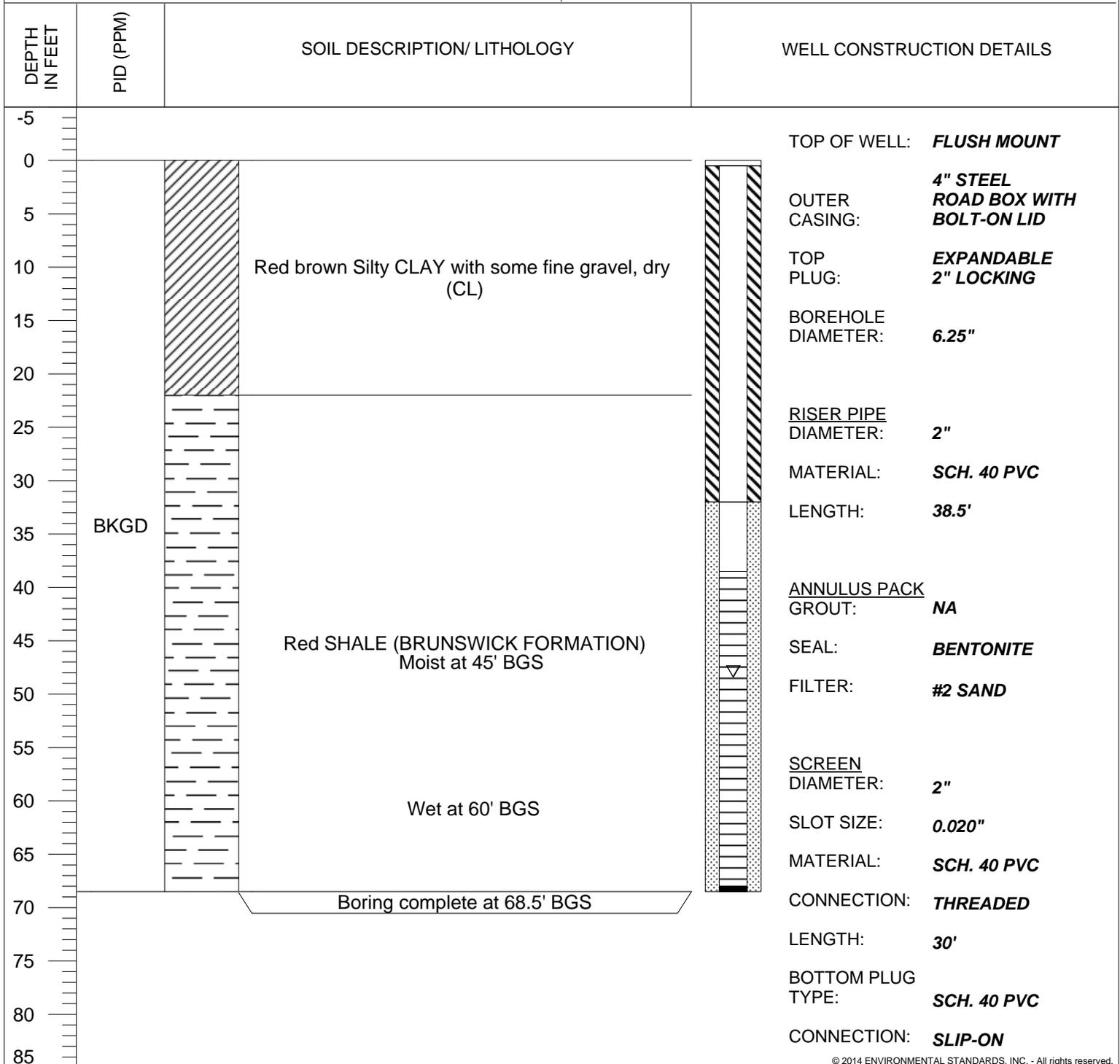
LOGGED BY: **MARK HASLETT**

DRILLING METHOD: **AIR ROTARY**

TOC ELEVATION: **109.07'**

WELL DEPTH: **68.5' BGS**

WATER DEPTH: **48.37'**



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MW-4 MONITORING WELL LOG	PROJECT NO.: 20146456.A		CREATION DATE: JUNE 12, 2014		BGS = BELOW GROUND SURFACE NA = NOT APPLICABLE PID = PHOTOIONIZATION DETECTOR PPM = PARTS PER MILLION BKGD = BACKGROUND PID READING *PID CALIBRATED TO 100 PPM ISOBUTYLENE CALIBRATION GAS
	DRAWN BY: SES	APPROVED BY: JPK	CHECKED BY: MCF	REVISION: 0	