



## Land Recycling Program Transmittal Sheet for Plan/Report Submission

Instructions: Please provide all requested information in each of the four sections. This transmittal sheet shall accompany any plan/report submitted to the Department under the Land Recycling Program. Proper completion of the Transmittal Sheet will assist Department review and may avoid a finding of plan/report deficiency. The Facility ID number can be obtained from the Department's Environmental Cleanup Program in the region where the site is located.

### **Section 1 - Site Identification**

eFACTS Facility ID 604445

Site Name Former Tank Car Corporation of America Site

Site Address 1725 Walnut Avenue

Municipality and County Springfield Township, Montgomery County

### **Section 2 - Remediation Standard . . Plan/Report . . Fees**

Identify the remediation standard being pursued and the type of plan/report being submitted. Please note required Department fees follow each type of plan/report.

Check the relevant standard and the type of plan/report being submitted.

- |  |  |
|--|--|
| <input type="checkbox"/> Background Standard<br>Final Report (\$250 fee)         | <input type="checkbox"/> Statewide Health Standard<br>Final Report (\$250 fee) |
| <input checked="" type="checkbox"/> Site-Specific Standard                       | <input type="checkbox"/> Special Industrial Area                               |
| <input checked="" type="checkbox"/> Remedial Investigation Report<br>(\$250 fee) | <input type="checkbox"/> Work Plan<br>(no fee)                                 |
| <input type="checkbox"/> Risk Assessment Report<br>(\$250 fee)                   | <input type="checkbox"/> Baseline Environmental Report<br>(no fee)             |
| <input checked="" type="checkbox"/> Cleanup Plan (\$250 fee)                     |  |
| <input type="checkbox"/> Final Report (\$500 fee)                                |  |

Ensure your check covers all required fees and is made payable to the **Commonwealth of Pennsylvania**.

**Section 3 - Municipal/Public Notice Confirmation**

There are two stages in the Land Recycling Program where municipal and public notices are required. Read the information associated with each stage. You will be asked to confirm that information establishing your compliance with these notification requirements has been included with this submission.

Check here if you are planning to meet the Background or Statewide Health Standard and your Final Report has been submitted within 90 days of the release.

Indicate date of release here \_\_\_\_\_

**No further completion of this section is required if your Final Report for these two standards conforms to the 90 day time frame.**

**Stage 1 - Notice of Intent to Remediate (NIR)**

Check here to confirm you have included proof that a copy of your NIR was provided to each municipality where your site is located. Proof will be a copy of your cover letter and a copy of a signed certified mail receipt slip from the municipality.

Check here to confirm a copy of a proof of publication document from a newspaper serving the area of your site has been included with this submission.

Check here to indicate that a Site-Specific Standard or a Special Industrial Area is involved and a municipal request was received for development of a public involvement plan. The plan/report submission shall include municipality and public comments, which were submitted, and your responses to those comments.

**Stage 2 - Cleanup Plan/Report Submission**

March 28, 2022 Place date here that each municipality was notified of any plan or report submitted under any of the three remediation standards.

The Philadelphia Daily News \_\_\_\_\_ March 30, 2022 Place the newspaper name and date that your notice of your plan/report submission was published.

**Section 4 - Project Contact**

On the lines below, place the name, company, and business phone number of the individuals who can be contacted regarding this submission:

Randy Shick, BL Companies (717) 943-1693 \_\_\_\_\_  
Kenneth M. Yoder, P.G., BL Companies (717) 943-1663 \_\_\_\_\_  
\_\_\_\_\_



An Employee-Owned Company

## REMEDIAL INVESTIGATION REPORT AND CLEANUP PLAN

### Former Tank Car Corporation of America Site

**1725 Walnut Avenue**

Oreland, Township of Springfield,

Montgomery County

Pennsylvania

eFACTS PF # 604445

Env. Cleanup ID 252520

Prepared on Behalf of:

### Springfield Township

1510 Paper Mill Road

Wyndmoor, PA 19038-7032

BL Project No. 17L5438

April 5, 2022

Prepared By:

Samantha Schuetz  
Project Scientist



Randy Shick  
Senior Environmental Scientist

and

Kenneth M. Yoder, P.G.  
Senior Project Manager

April 5, 2022

Ms. Sarah Pantelidou, P.G.  
Environmental Cleanup and Brownfields  
**Pennsylvania Department of Environmental Protection**  
Southeast Region  
2 East Main Street  
Norristown, Pennsylvania 19401

RE: Remedial Investigation Report and Cleanup Plan  
Former Tank Car Corporation of America Site  
1725 Walnut Avenue  
Springfield Township, Montgomery County, Pennsylvania  
**eFACTs PF# 604445, Env. Cleanup ID 252520**  
BL Project No. 17L5438

Dear Ms. Pantelidou:

On behalf of Springfield Township of Montgomery County, the "Owner" or "Remediator" of the above-referenced property, BL Companies is submitting the attached Remedial Investigation Report and Cleanup Plan for your review. The following report is being submitted in accordance with the requirements of the Pennsylvania Department of Environmental Protection (PADEP) *Land Recycling and Environmental Remediation Standards Act (Act 2)*. Appropriate public and municipal notices of the Notice of Intent to Remediate and of the submittal of these reports are provided as Appendix A.

Respectfully submitted,

**BL Companies**



Randy Shick  
Senior Environmental Scientist

Attachment

cc: Mr. Aaron S. Mapes, Esquire, Post & Schell, P.C.



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## EXECUTIVE SUMMARY

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The approximately 8-acre parcel of land is located at 1725 Walnut Avenue in Springfield Township, Montgomery County, Pennsylvania and is currently owned by the Township of Springfield, known as the Former Tank Car Corporation of America (TCCA) Site (Site). The Site has been the subject of United States Environmental Protection Agency (USEPA) action and investigation. Historically, TCCA refurbished and repaired rail cars at the Site between the 1920s and approximately 2007. Between 2007 and 2011, several tank cars containing hazardous substances and wastes were removed from the Site by the USEPA under a Response Action Plan. The USEPA's subsequent investigations and remedial activities identified various volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and herbicides, and various metals in surface soil, subsurface soil, and ground water. Several underground storage tanks, which were tank cars, containing hazardous substances, and soils contaminated by hazardous substances (a black tarry waste primarily including benzene, naphthalene, and polycyclic aromatic hydrocarbons [PAHs] within two "lagoons") were removed from the Site. In addition, the Site had been covered with a large amount of sandblasting grit contaminated by inorganic elements (e.g., lead) and organic contamination (e.g., PAHs), and this material was placed within the remedial excavations of the lagoon areas and capped with clay and 2RC stone.

USEPA's ground water characterization activities identified relatively low levels of chlorinated VOCs, and SVOCs beneath the Site at concentrations above USEPA Maximum Contaminant Levels (MCLs) and/or Pennsylvania's Act 2 Statewide Health Standards (SHSs), with decreased concentrations toward the downgradient Site boundary. The USEPA determined, during its investigations at the Site, that the surrounding area is served by public water. Therefore, the actions taken by the USEPA focused on mitigating Direct Contact and Ingestion-related exposure to the on-Site impacts, while also providing protective measures to area residents through assessment of surface soil conditions in the area and cleaning surrounding homes affected by wind-blown sandblasting residuals or sediment runoff.

The areas where the most extensive remedial efforts were performed included four areas from which buried rail cars were removed, and two areas that formerly contained "lagoons," where TCCA had improperly disposed of hazardous materials. In these and other areas, the USEPA excavated and removed significant quantities of hazardous and non-hazardous solids and liquids, which were transported off-Site for disposal at appropriately permitted receiving facilities. The excavations associated with the former lagoons were backfilled with sandblasting residue generated by TCCA's refurbishing activities and capped with a two-foot layer of clay and compacted 2RC stone. Ground water characterization activities reportedly identified the presence of (at least) trichloroethene (TCE) above its Act 2 SHS in (at least) one ground water monitoring well (MW-3) installed at the Site.

From early-2017 to late 2019, BL Companies conducted a desktop study of the past environmental investigations and remediation of the Site, several subsurface investigations of the Site, and several visual inspections of the Site including an inspection for suspected hazardous building materials and hazardous waste. The results of those activities are summarized as follows.

- The Paint Shop Building, located in the northern/northwestern corner of the Site, includes an earthen floor and was reportedly the location of rail car painting operations. According to a Phase I Environmental Site Assessment (ESA) conducted by Penn E&R in August 2015, paint and solvents were stored in this structure, although the USEPA soil characterization sampling included only a limited number of soil samples within the Paint Shop Building. BL Companies installed a total of six soil borings within this structure and collected soil samples from shallow and deeper intervals. Laboratory results for these samples identified concentrations of several SVOCs, metals, and one volatile organic compound (benzene) at concentrations above their applicable SHSs and/or Screening Values.
- A total of six soil borings were installed within the former Maintenance Building (referred to as Building 1), located in the southwestern corner of the Site, and soil samples were also collected from shallow and deeper intervals from these borings. Laboratory results for these samples indicated that only certain metals were detected at concentrations above their respective SHSs.
- A total of six permanent ground water monitoring wells were installed at the Site (by others). BL Companies surveyed the wells and collected ground water samples on two occasions during 2017 and 2018. Laboratory results for these sampling events identified concentrations of TCE, tetrachloroethene (PCE), certain SVOCs, and/or certain metals above their respective SHS.
- Based on the results of the initial ground water sampling events, BL Companies conducted slug testing and preliminary contaminant fate and transport modeling to evaluate the potential migration distance of TCE in ground water, using the Quick Domenico numerical model. The results of the preliminary fate and transport analysis indicated that the TCE plume (the primary constituent of concern) was calculated to attenuate within approximately 194 feet from monitoring well MW-6 at a location beneath a parking lot at the adjoining industrial property to the west of the Site.
- BL Companies also conducted visual assessments to identify suspect asbestos-containing materials, surfaces potentially including lead-based paint, and hazardous wastes that remain at the Site.

In 2019, BL Companies submitted a Work Plan to the Pennsylvania Department of Environmental Protection (PADEP, or the Department) and the Pennsylvania Department of Community and Economic Development (DCED) to support a grant application

submitted pursuant to the Industrial Sites Reuse Program (ISRP) for funding of site investigation activities required in connection with the planned reuse of the Site; Springfield Township plans to redevelop the Site for use as open space and active recreational facilities. Since BL Companies' submission of the 2019 ISRP grant application, BL Companies has conducted further soil and groundwater characterization activities, per the Revised Work Plan for Site Assessment Activities (final revision dated September 20, 2019), which was approved by the Department via its letter dated October 4, 2019. The proposed additional investigation activities were detailed in Section 3 of the 2019 Work Plan and are summarized as follows.

- The Work Plan proposed additional delineation of surface and subsurface soil conditions via collection of samples from shallow and deeper intervals from 18 soil boring locations. This sampling occurred during September 2020 with several of the 18 locations inaccessible for drilling. All of the samples that were collected were analyzed for VOCs, SVOCs, and priority pollutant list (PPL) metals. Laboratory results for these samples indicated that certain metals and SVOCs were detected at concentrations above their respective Act 2 SHSs in eight of the soil boring locations.
- The Work Plan proposed the installation of four additional shallow ground water monitoring wells at on- and off-Site locations. Three shallow wells (MW-7, MW-8, and MW-9) were installed on the Site, with MW-7 located on the southern portion of the Site and MW-8 and MW-9 installed in the northwestern portion of the Site. Two off-Site, shallow monitoring wells (MW-10 and MW-11) were installed within the Township-owned right-of-way to the west of the Site. Monitoring wells MW-7 through MW-10 were installed in October 2020 and MW-11 was installed in March 2021. An initial sampling event of the 10 shallow monitoring wells was conducted in October 2020. Laboratory results for this sampling event identified concentrations of TCE above its Act 2 SHS in MW-9, but in no other monitoring well.
- Three deep piezometer wells were installed in March 2021 following the initial sampling of the 10 shallow monitoring wells in October 2020. These three deep wells surround the location of MW-9 for assessment of ground water quality deeper within the underlying aquifer. Laboratory results during four, consecutive quarterly sampling events identified no exceedences of Act 2 SHSs for chlorinated solvent compounds in the deep wells.

The results of the remedial investigations and data evaluations presented in this RIR/CP have determined that exposure pathways to the constituents of concern are currently incomplete, but could become complete in the future without further mitigation/remedial actions. As such, the Cleanup Plan sets forth the proposed Pathway Elimination measures to render those pathways incomplete in the future.

In accordance with Act 2, a Notice of Intent to Remediate (NIR) was submitted to the Pennsylvania Department of Environmental Protection (PADEP) in 2017, indicating that the Site already includes an engineering control in the form of a protective cap over sandblasting residuals, which was established during the USEPA's remedial activities and is intended to remain at the Site, undisturbed. The NIR also states that given that the area is served by public water, ground water at the Site will likely be remediated to the Site Specific Standard using pathway elimination measures to ensure that exposure pathways are incomplete in the future. The NIR further indicated that other areas of concern would likely be remediated to the Site Specific Standard, the Statewide Health Standard, or a combination thereof. A copy of the NIR and associated municipal and public notices of the NIR submittal to the Department are provided in Appendix A. In addition, municipal and public notices were made on March 28, 2022 and March 30, 2022, respectively, for the submittal of this RIR/CP. Copies of these notices are also included in Appendix A and a check in the amount of \$500 has been delivered to the Department's Southeastern Regional Office for the RIR and CP report review fees.

## 2.1 General Setting

The approximately 8-acre Site is located at 1725 Walnut Avenue in Springfield Township, Montgomery County, Pennsylvania and is currently owned by the Township of Springfield. The area of the Site is largely developed for commercial, industrial, and residential land usage. The location of the Site is depicted on Figure 1.

Adjacent properties include Walnut Avenue followed by residential development to the south, Oreland Mill Road followed by S. Veccione, Inc. paving contractors and a scrap metals collection company to the west, an active railroad corridor followed by Cheltenham Transportation, LLC to the north, and residential properties to the east.

### 2.1.1 Current Site Development

The Site is improved with three vacant buildings, including a former Paint Shop building, a former Boiler House, and a former Maintenance Building (also referred to as “Building 1”). The central portion of the Site is undeveloped and currently serves as a stockpile area for soils imported by Springfield Township that are planned for use as a cap/cover material for the future redevelopment activities. The imported material originated from a redevelopment project of the Township’s municipal campus and several school district athletic fields that were converted to synthetic turf surfaces. A Clean Fill Due Diligence report, prepared by Earth Engineering, Inc., concluded that no evidence of potential environmental impact was identified for the property where the soil originated, and that the material meets the definition of Clean Fill, per the Department’s Management of Fill Policy. A copy of the Clean Fill Due Diligence report is provided as Appendix B.

### 2.1.2 Proposed Site Development

The proposed redevelopment of the Site will include construction of a small community park that conceptually will include athletic fields, a walking path, open recreational space, and a single structure as a restroom facility. The redevelopment plans are intended to eliminate a source of local blight and to restore the Site to a useful purpose to benefit the community and local area residents. A copy of the initial Concept Plan for the redevelopment of the Site is provided as Appendix C.

## 2.2 Geology

Geologically, the Site is located in the Piedmont Lowland Section of the Piedmont Province. The Piedmont Lowland Section consists of broad, moderately dissected valleys separated by broad low hills. The Section is developed primarily on limestone and dolomite rock. Karst topography is common. Local relief in the Section is generally less than 100 feet but may be as much as 300 feet. Elevations in the Section range from 60

feet to 700 feet. Drainage is basically dendritic in pattern, but some areas have virtually no pattern because of the well-developed subsurface drainage (Sevon, 2000).

According to the Pennsylvania Geological Survey's PaGEODE online interactive map, the Site is underlain by the Ledger Formation. The Ledger Formation is a light-gray, locally mottled, massive, pure, coarsely crystalline dolomite that is siliceous in the middle part. The beds, which are moderately well developed and massive, weather to rust-stained, granular, cherty layers. It is approximately 2,000 feet thick (Geyer and Wilshusen, 1982).

### 2.3 Soil

According to the Natural Resources Conservation Service's Web Soil Survey online mapping application, soils mantling the Site are classified as Urban land-Duffield complex. Although specific physical and chemical properties and interpretations for an area of Urban Land are not listed, the Urban Land complex indicates that the predominant soil type has been disturbed and covered with an impervious layer, generally consisting of pavement, buildings and other artificially covered surfaces. During the investigations conducted at the Site, silts and sands with varying amounts of clay content were identified at the Site.

### 2.4 Hydrogeology

According to the USGS 7.5-Minute Topographic Map of Germantown, Pennsylvania, the Site is relatively flat and sits at an elevation of approximately 210 feet above mean sea level. Topography in the vicinity of the Site generally slopes to the west to northwest towards a quarry located approximately 250 feet from the Site. Ground water elevation data obtained from the monitoring wells installed at the Site confirmed a general westerly ground water flow direction.



As introduced above, the Site was the subject of USEPA investigations and a Response Action Plan between 2007 and 2011. The investigations and remediation activities, which were included in the approved Work Plan, are detailed in the following subsections of this report. Pertinent portions (figures and available laboratory reports) of the previous investigations are provided as Appendix D.

### **3.1 Soil Conditions Previously Documented by the USEPA**

Through reviews of previous soil sampling efforts conducted by the USEPA, which are highly decentralized among numerous Pollution Reports (PolReps), laboratory analytical reports, PADEP files, and a limited availability of succinct data summary tables, BL Companies has determined that constituents of concern (COCs) have been detected in soil on the property at concentrations exceeding current Act 2 SHSs. The locations of these soil exceedances are depicted on the Site Plans included in Appendix D. The Site Plans depict the exceedances by analytical suites (not individual compounds), and include VOCs, SVOCs, Metals, and pesticides concentrations in soil samples above one or more Act 2 SHSs. Boring locations that exhibited exceedances are highlighted on the Site Plans with an orange circle.

#### VOCs

Referring to Appendix D, the Site Plan titled “VOCs Above Current Standards” identifies the locations of soil samples with one or more VOCs above an applicable Act 2 SHS or Screening Value. A total of six borings/samples included a VOC exceedance. Four of these borings/samples are located within the existing cap area (shaded in yellow), while borings SB-02 and SB-32 were located outside of the existing cap. These two locations were subsurface samples, and the area is currently covered by the recently imported soil material. These two soil borings/samples are surrounded by several other subsurface samples that did not include VOC exceedances to the north, west, and southwest, thereby already delineating the extent of subsurface VOC exceedances surrounding SB-02 and SB-32. Similarly, the four borings located within the existing cap area have also been delineated by numerous surrounding soil borings/samples with no VOC exceedances.

#### SVOCs

Referring to Appendix D, the Site Plan titled “SVOCs Above Current Standards” identifies the locations of numerous soil samples with one or more SVOCs above an applicable Act 2 SHS or Screening Value. Of these samples, a total of 12 sample locations are located outside of the existing cap area. These samples include surface soils (samples identified with SS- prefix) and subsurface soils (samples identified with SB- prefix).

Surface samples SS-01 and SS-04, which included SVOC exceedances, are located along the northern property boundary shared with a SEPTA commuter rail line, near the

northeastern corner of the Paint Shop Building. Samples SS-02, SS-03, and SS-14, just to the east and southeast of this location, did not contain SVOC concentrations above SHSs, effectively delineating the extent of those surface impacts in these directions; and exterior areas to the south are beneath the existing cap, eliminating the need for further delineation to the south. The area to the northwest of SS-01 and SS-04 between the rail line and the northern side of the Paint Shop Building is not accessible for drilling.

Soil samples from the northern-central portion of the Site, generally within the “small lagoon” excavation area (demarcated by the red dashed line on the Site Plans), have also exhibited SVOC concentrations above current Act 2 SHSs. The subsurface impacts are effectively delineated to the north and northwest by samples SB-03, SB-08, and SB-30; and to the south and southeast by samples SB-27, SB-28, and SB-29. The areas to the west and southwest of this area (i.e., to the west of samples SB-04, SB-05, and SB-11) were delineated during BL Companies’ 2020 sampling via soil borings B-14, B-15, and B-16, which included no exceedences of Act 2 SHSs.

Three surface soil samples from the southern portion of the Site (SS-07, SS-08, and SS-12) have exhibited SVOC exceedences. This area was further delineated during BL Companies’ 2020 sampling to the south, southwest, and west via soil borings B-1, B-2, and B-3, respectively, which included no exceedences of Act 2 soil SHSs. The area to the east of this location was inaccessible for sampling due to security fencing around the Site and a wooded area beyond the fence. Soil boring B-4 was installed in proximity to SS-12, which yielded similar SVOC exceedences.

### Metals

Referring to Appendix D, the Site Plan titled “Metals Above Current Standards” identifies the locations of soil samples with one or more metals above an applicable Act 2 SHS. Of these samples, only three are located outside of the existing cap area. These samples include SS-09, SS-15, and SB-16. The subsurface metals exceedences at SB-16 have effectively been delineated already by surrounding samples SB-15, SB-17, and SB-28. Surface soil samples from BL Companies’ 2020 sampling (B-5 and B-6) have generally delineated previous surface soil exceedences surrounding previous sample SS-09, and BL Companies’ surface soil samples from B-7 and B-8 have generally delineated metals exceedences in the vicinity of previous surface soil sample SS-15. As indicated above, areas outside the security fence surrounding the Site are not accessible for drilling.

### Pesticides

Referring to Appendix D, the Site Plan titled “Pesticides Above Current Standards – only alpha-BHC” identifies the locations of soil samples where alpha-BHC has been detected above an applicable SHS. Of these samples, only three are located outside of the existing cap area. These samples include SB-01, SB-02, and SB-04. The subsurface exceedences at these borings have effectively been delineated to the south, west, and

north by surrounding samples SB-05, SB-11, SB-30, and SB-31. Areas to the east have either been delineated by previous samples, or are located under the existing cap.

### **3.2. Interior Soil Investigations by BL Companies – 2017**

In September 2017, BL Companies conducted soil characterization sampling within the former Paint Shop Building and Building 1 to document soil conditions inside these structures, as these interior locations had not been investigated previously. Due to access limitations associated with the Paint Shop Building, soil borings were advanced through the dirt floor using hand-operated Geoprobe equipment. Sampling within Building 1 was conducted using a track-mounted Geoprobe drill rig to install borings through the concrete slab floor. The locations of the interior borings are depicted on Figure 2.

Six interior borings were installed within each of the buildings (identified as IB-1 through IB-12) and soil samples were collected at two depth intervals from each boring. Sample depths included shallow/surface soil samples (from 0-2 feet) and deeper sample intervals ranging from approximately 4.5 to 8 feet below the surface grade. Sample selection was guided by visual observations of potential impacts (e.g., staining, discoloration), odors, and/or field screening with a photoionization detector (PID). Recovered soil materials were inspected by a BL Companies scientist and the lithology was logged in the field. In general, the soils that were encountered consisted primarily of silts and sands, with varying degrees of clay content.

Samples were collected by hand using TerraCore sampling kits while wearing disposable nitrile gloves. The samples were placed directly into an ice-filled cooler through delivery to Pace Analytical Services, Inc. in Greensburg, PA under chain of custody documentation. The samples were submitted for laboratory analysis of VOCs, SVOCs, and PPL metals. The laboratory was instructed to analyze the shallow samples from all soil borings first, and to hold the deeper samples pending the results of the shallow samples. If one or more compounds exceeded an Act 2 SHS, appropriate deeper intervals were then requested for analysis. Table 1 summarizes the analytical results of the soil samples that were analyzed, and the laboratory reports are provided as Appendix E.

#### VOCs

Referring to Table 1 and Figure 2, only one VOC (benzene) was detected above its Soil to Ground Water SHS during the 2017 soil sampling. The sample in which benzene was detected, IB-2, was collected from a boring within the Paint Shop Building at a depth of 4 feet. Benzene was not detected in any other sample collected and all other VOCs were generally orders of magnitude below their respective Act 2 SHSs in all other samples. The concentration of benzene detected in IB-2 was 6.0 mg/kg. This concentration was above the Soil to Ground Water standard, but below the Non-Residential and the Residential Direct Contact standards. Benzene was not detected in the deeper sample from this boring (collected at a depth of 4.5 feet), or within any of the other soil samples

collected within the Paint Shop Building. Therefore, the detection of benzene in this sample appears to be an isolated occurrence, which has been delineated to the northeast (IB-1), southeast (IB-3), and vertically (IB-2 @ 4.5'). Soil borings B-12 and B-13 from BL Companies' 2020 delineation sampling were installed south of the location of IB-2 and included no detections of benzene in either the surface or sub-surface samples from these borings. Areas to the west and north of IB-2 are not accessible for drilling.

### SVOCs

Referring to Table 1 and Figure 2, concentrations of SVOCs were detected above applicable Act 2 SHSs during the 2017 soil sampling. The samples in which the SVOCs were detected, IB-1, IB-2, IB-4, IB-5, and IB-6, were all collected from borings located in the Paint Shop Building. With only three exceptions, none of the concentrations were above their respective Soil to Ground Water SHSs. The exceptions include benzo(b)fluoranthene in IB-2 at a depth of 4 feet; and benzo(a)anthracene and benzo(b)fluoranthene in IB-6 at a depth of 1 foot. Each of these compounds were detected below their Soil to Ground Water SHSs in the deeper samples collected from IB-2 and IB-6.

SVOCs detected in the surface samples from IB-1, IB-2, IB-4, IB-5, and IB-6 exceeded their Residential Direct Contact values. However, all of these compounds were detected below their Residential Direct Contact values in the deeper samples in each boring, except in IB-2. In IB-2, benzo(b)fluoranthene and benzo(k)fluoranthene remained above their Residential Direct Contact values at 4.5 feet, although the detected concentrations were an order of magnitude lower than the surface sample. Samples from BL Companies' 2020 soil borings B-9, B-10, and B-11 were collected to the south and southwest of interior boring IB-5. Samples from B-10 did not include SVOC exceedences in either the shallow or deep intervals. Samples from borings B-9 (both shallow and deep intervals) and B-11 (a shallow sample, only) included several SVOCs at concentrations above Act 2 SHSs. Soil farther south of these locations is beneath the existing cap, and therefore, does not require further delineation. As noted above, the area north of the Paint Shop building is not accessible for drilling.

### Metals

As is common in naturally-occurring earth elements, metals were detected among the 2017 soil samples on a more widely occurring basis. Of the metals that were detected, the following elements were detected at concentrations above an applicable Act 2 SHS: antimony, arsenic, cobalt, lead, manganese, and vanadium.

### *Paint Shop Building*

Referring to Table 1, the majority of the samples in which metals exceedances were detected were collected from borings located within the Paint Shop Building, and in most instances, the surface soil concentrations were higher than the subsurface samples.

Within the Paint Shop Building, all of the metals concentrations were below their Soil to Ground Water SHSs, except antimony, cobalt, and lead. Antimony was detected above its Soil to Ground Water SHS in the shallow sample collected from IB-6 (collected from a depth of 1 foot), but it was below detection limits in the deeper sample (collected at a depth of 5 feet). The concentration of antimony in the shallow sample was also above the Residential Direct Contact value. Antimony was not detected above Act 2 SHSs in any other samples.

Elevated concentrations of lead were detected in surface soil samples collected from the Paint Shop Building. The concentrations ranged from 74 mg/kg to 8,940 mg/kg, with most samples above the Residential and Non-Residential Direct Contact values. At all but one boring location, the concentrations of lead detected in the deeper samples were below all Act 2 SHSs (both Residential and Non-Residential Direct Contact and Soil to Ground Water SHSs). The only exception was boring IB-3, where the concentration detected in the deeper sample was greater than the concentration detected in the surface sample.

With respect to the remaining elements detected in soils within the Paint Shop Building, a few trends are apparent. The first trend is that the surface soil samples generally included higher concentrations than their subsurface counterparts, with the exception of IB-3 (similar to the conditions for lead concentrations). The second trend is that concentrations of vanadium were fairly consistent among the shallow and deep samples. Detected concentrations of vanadium were consistently above the Residential Direct Contact value in both shallow and deep sample intervals (and at similar concentrations) in all of the samples that were collected, but all concentrations were below Residential and Non-Residential Soil to Ground Water SHSs.

### *Building 1*

The only compounds detected above Act 2 SHSs in the soil samples collected from Building 1 were certain metals. The elements that were detected above an applicable SHS included: arsenic, cobalt, manganese, and vanadium.

Concentrations of arsenic were detected above the Residential Direct Contact value, but below the Soil to Ground Water SHS. Arsenic was above this standard in the deeper sample collected from IB-11 (at a depth of 8 feet), but below the standard in the shallower sample (collected at a depth of 2 feet). In fact, all of the concentrations detected above Residential Direct Contact values (among all elements) were from the deeper samples in Building 1, with the exception of vanadium in IB-10.

Concentrations of cobalt and manganese were detected above their respective Residential Direct Contact values, and their Residential and Non-Residential Soil to Ground Water SHSs in the sample collected from IB-11 at a depth of 8 feet. The concentrations of cobalt (333 mg/kg) and manganese (10,900 mg/kg), appear to be highly anomalous and isolated to the location of IB-11. The concentrations of cobalt and manganese in the remaining deeper samples from Building 1 are at least one to two

orders of magnitude below these levels. From a statistical analysis standpoint, the concentrations of cobalt and manganese in IB-11 likely would be considered statistical outliers, as they are greater than two standard deviations from the mean of the data set. There is no known source for cobalt or manganese at the Site, and the remaining data suggest a highly isolated occurrence of these elements in soil.

Like in the Paint Shop Building, the concentrations of vanadium detected in Building 1 were relatively consistent among the shallow and deep soil samples. The concentrations were consistently above the Residential Direct Contact value, but below the Residential and Non-Residential Soil to Ground Water SHSs.

### **3.3 Soil Delineation Sampling by BL Companies – 2020**

On September 28 and 29, 2020, additional delineation of surface soil and subsurface soil conditions was conducted at the Site via the advancement of a total of 16 soil borings in areas surrounding previously identified sample locations at which one or more COCs were detected above their respective Act 2 SHSs. The soil borings were advanced to depths of approximately 15 feet below the existing surface grade, and soil samples were collected from a shallow (0-2 feet) and a deeper (2-15 feet) interval from each boring location (except for B-11, which encountered shallow refusal), for a total of 31 samples. A PID was used to screen samples for VOCs, which can be indicative of the presence of petroleum or solvent constituents or other volatile chemicals. All soil samples were submitted for laboratory analysis of VOCs, SVOCs, and PPL metals. Table 2 summarizes the results of this sampling and sample locations are depicted on Figure 2. Laboratory reporting for the associated sampling is provided as Appendix F.

#### VOCs

Referring to Table 2, none of the soil delineation samples collected during the 2020 sampling event included concentrations of VOCs above applicable SHSs.

#### SVOCs

Concentrations of certain SVOCs were detected above their applicable Act 2 SHSs during the 2020 soil sampling. The soil boring locations with SVOC exceedences included soil borings B-4, B-5, B-9, and B-11. SVOC concentrations in samples collected from borings B-4, B-5, and B-11 exceeded only Residential Direct Contact values. The shallow sample from boring B-9 included SVOC exceedences of Residential and Non-Residential Soil to Ground Water SHSs and/or Residential and Non-Residential Direct Contact values. The concentrations in the deeper sample from B-9 were generally an order of magnitude lower than the shallow sample, except for naphthalene, which was slightly higher in the deeper sample. It should be noted that SVOCs have only been detected at concentrations above their respective SHS sporadically in monitoring wells installed at the Site.

## Metals

Concentrations of metals above their Act SHSs were identified at soil borings B-4, B-5, B-9, B-10, B-11, B-12, and B-13. Primarily arsenic and or lead were detected above their Residential and/or Non-Residential Direct Contact values, and/or Soil to Ground Water SHSs. The only other metal detected above an Act 2 SHS was antimony in the deeper sample from B-9, where the Residential Direct Contact value, and the Residential and Non-Residential Soil to Ground Water SHSs were exceeded. It should be noted that that dissolved arsenic and dissolved antimony have never been detected above their Act 2 SHSs in any of the monitoring wells (if detected at all), while dissolved lead has only been detected on two separate occasions at interior wells MW-4 and MW-5.

Overall, the 2020 soil sample results reflect the already known conditions on the Site and provide a greater level of certainty of their extent. In addition, the ground water data (discussed in greater detail below) suggest that despite the general ubiquity of SVOCs and metals detected in Site soils, these COCs generally do not migrate to the underlying aquifer at persistent levels. Concentrations of VOCs in soils have been delineated via the 2020 soil sampling and these compounds represent the primary COCs in ground water beneath the Site.

## **4.0**

## **GROUND WATER CHARACTERIZATION AND MONITORING**

As part of the site characterization activities, a total of 14 ground water monitoring wells have been installed at the Site over the course of four mobilizations. The first three wells (MW-1 through MW-3) were installed by a consultant retained by the previous Site owner. Monitoring wells MW-4 through MW-6 were installed by the USEPA. The remaining monitoring wells (MW-7 through MW-13D) were installed by BL Companies over the course of two mobilizations. Collectively, the monitoring well network provides the ground water characterization data evaluated within this RIR/CP, and provides the basis for the Conceptual Site Model, Fate and Transport analysis, and Exposure Pathway Evaluations and elimination measures discussed below.

### **4.1 Previously Completed Ground Water Characterization**

On November 18, 2008, a consultant retained by the previous Site owner installed and sampled three permanent monitoring wells (MW-1 through MW-3) at the Site. Shortly thereafter, the previous Site owner reportedly went bankrupt. In June 2009, USEPA installed and sampled three additional monitoring wells (MW-4 through MW-6). MW-4 was installed on the upgradient side of the Site, MW-5 was installed in the northern-central portion of the Site, and MW-6 was installed near the location of the former buried tank cars in the western portion of the Site. These two sampling events in 2008 and 2009 represent the only known sampling of ground water from permanent monitoring wells prior to Springfield Township's acquisition of the Site. BL Companies was unable to locate information regarding the sampling methods or the monitoring well construction logs in PADEP or USEPA records; however, a down-hole camera inspection was conducted, and the screened intervals and total depths of the previous wells were identified. Table 3 provides monitoring well construction and elevation data for the permanent monitoring wells.

In addition to these two, initial monitoring well sampling events, USEPA also collected ground water samples from temporary well points during a 2008 soil sampling program. Samples of perched water were collected from soil borings SB-01, SB-02, SB-06, and SB-09, identified respectively as TW-01, TW-02, TW-06, and TW-09. The analytical results for the temporary well sampling event are provided in Table 4, and Table 5 presents an analytical data summary for all permanent well sampling events. Table 4 and Table 5 include comparisons to current Act 2 Residential and Non-Residential, Used Aquifer SHSs. It is important to note that all of the temporary well samples were collected prior to the USEPA's remedial excavation activities; thus, the contaminant concentrations detected in the samples are not representative of current Site conditions.



#### 4.1.1 Results of Previously Completed Temporary Well Point Sampling

##### VOCs

Referring to Table 4, the temporary well point sampling detected various VOCs within the former lagoon areas at relatively elevated concentrations. Nine compounds were reported above current Act 2 standards, including the petroleum-related VOCs benzene, toluene, styrene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene; a pesticide-related VOC 1,2-dibromo-3-chloropropane; and the chlorinated solvent-related VOCs TCE, PCE, and 1,2-dichloroethane (DCA).

##### SVOCs

The temporary well point sampling also detected several SVOCs within the former lagoon areas at concentrations above their current Act 2 standards. These compounds included 10 polycyclic aromatic hydrocarbons (PAHs), six phenols/cresols, and three other SVOCs above their respective standards.

#### 4.1.2 2008-2009 Permanent Monitoring Well Sampling

##### VOCs

During the 2008 sampling event, TCE was detected above both the Residential and Non-Residential, Used Aquifer SHS of 5 micrograms per liter ( $\mu\text{g/L}$ ) in MW-3, with a concentration of 8.2  $\mu\text{g/L}$ . PCE was detected in MW-1 and MW-3, but at concentrations below the Residential and Non-Residential SHSs. 1,2-Dichloropropane was detected above the current Residential and Non-Residential SHSs of 5  $\mu\text{g/L}$  in MW-2 and MW-3 with a concentration of 11  $\mu\text{g/L}$ ; however, this analyte was also reportedly present at a similar concentration in the corresponding laboratory blank. No other VOCs were detected above PADEP criteria at this time.

In June 2009, TCE was detected above the Residential and Non-Residential SHSs in MW-6 with a concentration of 28  $\mu\text{g/L}$ . PCE was also detected in MW-6 but at a concentration (4.8  $\mu\text{g/L}$ ) which was below the Act 2 SHS of 5  $\mu\text{g/L}$ . Benzene was detected at a concentration of 5.4  $\mu\text{g/L}$  in MW-5, slightly above its SHS of 5  $\mu\text{g/L}$ .

##### SVOCs

No SVOCs were detected above laboratory reporting limits in the monitoring well samples collected during the 2008 or 2009 sampling events.

##### Metals

The monitoring well samples collected during the 2008 sampling event were not analyzed for metals.

During the 2009 event, manganese was detected above the current Residential and Non-Residential SHS of 300 µg/L in MW-4 and MW-5, with concentrations of 1,750 µg/L and 7,800 µg/L, respectively.

#### *4.1.3 2017-2018 Permanent Monitoring Wells Ground Water Sampling*

On August 31, 2017, on behalf of Springfield Township, BL Companies collected ground water samples from five of the six permanent monitoring wells on the Site. The PVC well casings on the tops of the wells were surveyed by BL Companies using laser level equipment to ensure that all wells were tied to a common elevation datum. Monitoring well MW-2 could not be sampled during the August 2017 event due to damage to the well casing. Repairs to the well casing subsequently were completed, and a ground water sample was collected from MW-2 on September 19, 2017. During the September sampling event, the repaired surface casing elevation for MW-2 was resurveyed and tied into the existing elevation data set. A second round of ground water sampling, including all six wells, was performed on April 12, 2018.

Prior to initiating sampling activities, BL Companies collected depth-to-water measurements from each of the monitoring wells using an electronic water level meter. The electronic water level meter was cleaned with an Alconox wash and deionized water rinse between uses. Based on the measured ground water elevation data, ground water generally flows to the west beneath the Site. Ground water elevation contour maps from the shallow monitoring well network are provided as Figures 3 through 6.

Based on the depth-to-water measurements, total well depths, and well diameter, a minimum of three well volumes of ground water were purged from each well using a hand bailer during the August and September 2017 events and using an electric, submersible pump (cleaned between uses) during the April 2018 event. Purge water retrieved from the wells was run through a granular activated carbon filter prior to discharging to the ground surfaces.

After allowing each monitoring well to recharge, a ground water sample was retrieved from corresponding monitoring wells using a new, disposable polyethylene bailer. The samples were then transferred directly into laboratory-supplied bottleware with appropriate preservatives. The sample bottles were placed into an ice-filled cooler upon collection and through delivery to Pace Analytical Services, Inc. in Pittsburgh, Pennsylvania for analysis of VOCs, SVOCs, and dissolved PPL metals. The samples for metals analysis were field-filtered at the time of collection. Laboratory reports for all ground water sampling events conducted between 2017 and 2022 are provided in Appendix G and the analytical results are summarized in Table 5.

#### VOCs

During the 2017 sampling event, PCE and TCE were detected in MW-6 at concentrations exceeding both the Residential and Non-Residential, Used Aquifer SHS of 5 µg/L, with concentrations of 9.8 µg/L and 85 µg/L, respectively. PCE and TCE were detected in

MW-6 again during the 2018 event, with concentrations of 8.0 µg/L and 66.6 µg/L, respectively. TCE also was detected above the Residential and Non-Residential, Used Aquifer SHS in MW-3 during the 2018 sampling event, with a concentration of 6.1 µg/L. Several other VOCs were detected in one or more monitoring wells during the 2017 and 2018 sampling events, but the concentrations were well below their applicable SHSs.

### SVOCs

During the September 2017 sampling event, benzo(a)pyrene was detected in MW-2 at a concentration of 1.1 µg/L, which is above the Residential and Non-Residential SHSs of 0.2 µg/L. In addition, benzo(b)fluoranthene was detected in MW-2 at 1.2 µg/L, above the Residential SHS of 0.18 µg/L (but equal to the Non-Residential SHS of 1.2 µg/L); and benzo(k)fluoranthene was detected at 1.1 µg/L, above the Residential and Non-Residential SHSs of 0.18 µg/L and 0.55 µg/L, respectively. Chrysene, fluorene, and phenanthrene were also detected in MW-2, but at concentrations below their Residential and Non-Residential SHSs. No other SVOCs were detected above laboratory reporting limits in MW-2 or any other monitoring well during the August/September 2017 events.

No exceedance of applicable criteria was noted in MW-2 during the April 2018 sampling event. In fact, only trace, estimated (J-flagged) concentrations of certain SVOCs were reported by the laboratory.

### Metals

During the April 2018 sampling event, boron was detected in MW-6 above its Residential and Non-Residential, Used Aquifer SHS of 6,000 µg/L, with a concentration of 6,440 µg/L. Boron also was detected in each of the other wells during the 2017 and 2018 sampling events, but at concentrations below its SHS. Lead was detected above both the Residential and Non-Residential SHS of 5 µg/L in MW-5 during the April 2018 event, with a concentration of 7.5 µg/L. Lead also was detected in MW-4 during this event, but the concentration was below the SHS.

Manganese was detected in MW-4 and MW-5 at concentrations above its Residential and Non-Residential SHS of 300 µg/L during both sampling events. Specifically, manganese was detected at concentrations of 1,200 µg/L and 1,710 µg/L in MW-4 in 2017 and 2018, respectively, and 16,400 µg/L and 15,000 µg/L in MW-5 in 2017 and 2018, respectively.

Vanadium was detected in MW-5 at concentrations above its Residential and Non-Residential SHSs during both sampling events. Specifically, vanadium was detected at 21.7 µg/L during the 2017 event, and at 8.2 µg/L during the 2018 event.

Various other metals were detected in the ground water samples collected in 2017 and 2018; however, the concentrations were below their applicable Residential and Non-Residential, Used Aquifer SHS.

## 4.2. 2020-2022 Permanent Monitoring Wells Ground Water Sampling

As indicated above, BL Companies coordinated the installation of five shallow monitoring wells and three deep piezometer wells at on- and off-Site locations to document ground water quality in the southern portion of the Site and downgradient from monitoring well MW-6, per the approved Work Plan.

### 4.2.1 Additional Shallow Monitoring Wells Installation and Initial Sampling

On October 5 and 6, 2020, BL Companies coordinated the installation of four shallow monitoring wells at on- and off-Site locations. These monitoring wells include MW-7, MW-8, MW-9, and MW-10. The locations of the shallow monitoring wells were intended to document ground water quality in the southern portion of the Site and water quality surrounding monitoring well MW-6 where the highest concentrations of VOCs had been detected.

BL Companies mobilized an air-rotary drill rig to install the monitoring wells. The wells were drilled by Sensenig & Weaver Well Drilling, Inc. of Dover, PA with oversight by a BL Companies' scientist. The wells were drilled to depths of approximately 50 feet below grade, with a 20-foot screened interval at the bottom of the wells, similar to the construction of the existing on-Site monitoring wells. All monitoring wells were completed using standard 2-inch diameter PVC well screen and riser pipe. Monitoring well MW-7 was finished at the surface with a steel, stick-up casing with locking lids, while wells MW-8, MW-9, MW-10, which are located either in the right-of-way or a parking area, were finished with a flush-mounted cover and a locking plug within a concrete collar. Following the well installation, the top of casing of each well was professionally surveyed to obtain accurate vertical elevations and horizontal coordinates, as requested by the PADEP. The drill cuttings and fluids generated during drilling operations were field screened for the presence of VOCs using a PID and were placed in 55-gallon drums for subsequent disposal as investigative derived waste (IDW).

On October 29 and 30, 2020, BL Companies conducted an initial round of ground water sampling from the monitoring well network (a total of 10 on- and off-Site wells). The purpose of this sampling was to document concentrations of the constituents of concern at the newly installed monitoring wells in relation to overall ground water quality, and to provide data to inform the placement of the three proposed deeper wells. Prior to sampling, the static water level was measured to the nearest +0.01 foot in each well using an electronic water level meter. Sampling methods were consistent with the previously conducted sampling events, using a 12-volt submersible pump and the measurement of indicator parameters (pH, temperature, dissolved oxygen, specific conductance, and oxidation-reduction potential) recorded as the wells were purged. Ground water was retrieved using new, disposable polyethylene sampling bailers and transferred directly into laboratory-supplied sample containers with the appropriate preservative(s). The samples were placed into an ice-filled cooler through delivery to the testing laboratory

(SGS North America, Inc. in Dayton, NJ) for analysis of VOCs, SVOCs, and dissolved PPL metals.

Referring to Table 5, the results of the October 2020 ground water sampling suggested that there is little to no measurable impact to ground water in the southern portion of the Site, based on the data from monitoring wells MW-7 and MW-10. In the northern portion of the Site, concentrations of the constituents of concern generally decreased relative to the 2017 and 2018 sampling events, with only one monitoring well (MW-9) exhibiting a concentration of TCE above its Act 2 SHS. The TCE concentration detected in MW-9 (22.8 µg/L) was nearly three times lower than the 2018 TCE concentration at nearby well MW-6, and the TCE concentration at MW-6 decreased to a level (2.8 µg/L) that is below the Act 2 SHS of 5.0 µg/L. In fact, these two monitoring wells represent the only locations where TCE was detected in shallow ground water beneath the Site. Overall, these results suggested that the extent of impacted shallow ground water is fairly limited.

BL Companies also coordinated the installation of one additional shallow monitoring well, MW-11 during the deep well installation activities on March 9 and 10, 2021. The location of MW-11 was intended to further support horizontal, downgradient delineation to the west of MW-6 and MW-9. The well was drilled to a depth of approximately 50 feet below grade, with a 20-foot screened interval at the bottom of the well, similar to the construction of the existing on-Site monitoring wells, however the well was drilled using a mud-rotary drill rig which was already mobilized for the deep well installation. Monitoring well MW-11 was completed using standard 2-inch diameter PVC well screen and riser pipe and finished with a flush-mounted cover and a locking plug within a concrete collar. The drill cuttings and fluids generated during drilling operations were field screened for the presence of VOCs using a PID and were placed in 55-gallon drums for subsequent disposal as IDW.

#### *4.2.2 Deep Piezometer Monitoring Wells Installation*

Based on the results of the October 2020 ground water sampling event, BL Companies coordinated the installation of three deep piezometer monitoring wells, in the vicinity of MW-6 and generally surrounding MW-9. Due to the presence of subsurface utilities within the Township right-of-way in proximity to the proposed well locations, a geophysical survey and soft dig excavation were completed prior to well installation. The geophysical survey utilized a combination of ground penetrating radar (GPR), electromagnetics (EM), and utility line tracers, and the well locations were also pre-excavated via air knife and vacuum excavation equipment to ensure that drill tooling did not come in contact with any underground utilities.

The deep monitoring wells were intended to document ground water quality at a deeper interval of the underlying aquifer, based on the specific gravity of the chlorinated solvent compounds detected in the existing shallow wells. As indicated above, BL Companies mobilized both a mud-rotary drill rig and an air-rotary drill rig to install the monitoring wells on March 8 through March 12, 2021. Talon Drilling Company was subcontracted to perform the drilling and well construction with oversight by a BL Companies' scientist. An

air-rotary drill rig was utilized to install all three deep monitoring wells, with the exception of the first 70 feet of monitoring well MW-13D, which was advanced using a mud-rotary drill rig at the beginning of the mobilization. Air rotary methods were utilized thereafter due to the relatively slow drilling rate with the mud-rotary equipment.

The deep wells were drilled with an 8-inch diameter top hole to depths of 70 feet below grade. Five-inch steel casing was set in the top holes and grouted in place with a concrete/bentonite slurry, and the grout was allowed approximately 24 hours to cure before drilling the deeper, open intervals of the wells. The open intervals were drilled with a 5-inch diameter drill bit to depths of 99 feet below grade (MW-11D), 120 feet below grade (MW-12D), and to 80 feet below grade (MW-13D). The drill cuttings and fluids generated during drilling operations were field screened for the presence of VOCs using a PID and placed in 55-gallon drums for subsequent disposal as IDW. Following the well installation, the top of casing of the wells were professionally surveyed to obtain accurate vertical elevations and horizontal coordinates, as requested by the PADEP.

#### *4.2.3 Quarterly Ground Water Sampling and Analytical Results*

Following the installation of the deep wells, the complete monitoring well network (14 monitoring wells) was sampled on a quarterly frequency (April 2021, July 2021, October 2021, and January 2022). Sampling methods were consistent with the previously conducted events, including the collection of water levels using an electronic water level meter, purging the wells using a submersible pump, and measuring indicator parameters (pH, temperature, dissolved oxygen, specific conductance, and oxidation-reduction potential) as the wells were purged. Ground water was retrieved using new, disposable polyethylene sampling bailers and transferred directly into laboratory-supplied sample containers with the appropriate preservative(s). The samples were placed into an ice-filled cooler through delivery to SGS North America, Inc. for analysis of VOCs, SVOCs, and dissolved PPL metals.

Referring to Table 5, the analytical results of the quarterly sampling were highly consistent with the October 2020 sampling event, with TCE concentrations remaining relatively steady at MW-9, and TCE concentrations remaining below the SHS at MW-6 during each of the quarterly events. In addition, these two wells continue to represent the only shallow well locations with detectable concentrations of TCE. With respect to the deep wells, monitoring wells MW-12D and MW-13D periodically exhibited low-level concentrations of TCE and/or PCE, although all of the concentrations in these wells were below SHSs. PCE was also detected in MW-11D during the January 2022 sampling event, although this concentration (2.7 µg/L) was also below the SHS of 5.0 µg/L. TCE has not been detected in MW-11D during any of the four quarterly sampling events completed for this well.

The quarterly ground water data have also identified increasing concentrations of benzene at monitoring well MW-6, with each successive sampling event yielding slightly higher concentrations than the previous event. While benzene concentrations have

increased at MW-6, TCE concentrations have correspondingly decreased to levels below laboratory reporting limits. These data suggest that a co-mingled plume exists, with the increase in benzene concentrations (and other petroleum-related compounds, including toluene, ethylbenzene, xylenes, and naphthalene) directly corresponding to decreased TCE concentrations. Field measurements during well purging/sampling activities indicate depleted dissolved oxygen concentrations and relatively lower oxidation-reduction potential (ORP) at MW-6 during the October 2020 to January 2022 sampling events. These field data indicate that the presence of the petroleum-related compounds in the shallow aquifer system is creating anoxic, reducing conditions which are contributing to the degradation of the chlorinated solvent plume. To date, benzene and other petroleum-related compounds have not been detected in the immediately surrounding shallow wells MW-8, MW-9, or MW-11, and have generally only been detected in the temporary well samples collected by the USEPA in 2008.

#### 4.2.4 Slug Testing

Prior to submitting the Work Plan to the Department in 2019, BL Companies had performed intra-well rising head aquifer tests (i.e., slug tests) at MW-4, MW-5, and MW-6 to obtain data for estimating hydraulic conductivity (K). The K estimates provided a relative measure of the capacity of the aquifer to transmit water, which was used to evaluate ground water flow velocity and the potential fate and movement of dissolved-phase compounds through the aquifer.

The slug tests were performed by placing a cylinder (slug) into the well and displacing a known volume of water. Following water table equilibration, the slug was removed creating artificial drawdown within the well. An electronic pressure-transducer with data logging capability was placed in the test well before the slug and measured water table recovery (rising head) in a logarithmic sequence after the slug was removed. Data obtained from the tests were used to calculate K using the Bouwer-Rice analysis method in the Aqtesolv software package. Aquifer test data and the hydraulic conductivity calculations are provided in Appendix H.

The calculated K values from each slug test is as follows:

Monitoring Well	Hydraulic Conductivity (K)
MW-4	3.17 feet / day
MW-5	5.63 feet / day
MW-6	2.31 feet / day
Average	3.70 feet / day

The resulting K values were within published ranges expected for silts and sands (C.W Fetter, Applied Geology, Fourth Edition, 2001).

During the preparation of the approved Work Plan, a preliminary contaminant fate and transport analysis was completed using the *New Quick Domenico.xls* Microsoft Excel spreadsheet model (QD) to evaluate the potential migration distance of TCE in ground water at the Site. The QD model calculates estimated concentrations of organic compounds in downgradient locations using the Domenico equation, which accounts for first-order decay, retardation and three-dimensional dispersion. A summary of the input parameters and QD output spreadsheets are provided in Appendix H.

### 5.1 TCE Modeling

The results of the preliminary fate and transport analysis indicated that the TCE plume would attenuate to levels below the Act 2 SHS within a distance of 194 feet from the source. In the downgradient direction from MW-6, this distance is located within a parking lot/equipment staging area of an adjoining industrial property.

Following the results of additional ground water characterization sampling, the preliminary TCE model was reevaluated using the more recent data, with concentrations of downgradient well MW-9 as the calibration point. The source concentration at MW-6 (85 µg/L) was input as the concentration, zero (0) feet from the source, and the concentration at MW-9 (22 µg/L) was input at a distance of 90 feet from the source. Without revising any of the other input parameters, the centerline plot of the plume was calculated by the model to be 23 µg/L at 90 feet from MW-6, and the downgradient extent was calculated to be 4 µg/L at a distance of 195 feet from the source. As such, the field data verify the projected extent of the plume as presented in the preliminary fate and transport model and indicate that concentrations of TCE attenuate within 195 feet of the source location. A map depicting the projected extent of TCE concentrations based on the TCE model is presented as Figure 7. Based on this calculated plume migration distance, the nearby quarry pond to the west of the Site does not appear to be at risk of having been affected by Site conditions.

It is important to note that the QD model assumes that TCE at a concentration of 85 µg/L is continuously being released to the ground water at the location of MW-6. This assumption is highly conservative, as 85 µg/L is the highest concentration of TCE that has been detected in any of the on-site wells at any time, and the more recent data indicate that TCE concentrations at MW-6 have decreased to levels below the Act 2 SHS.

Moreover, even if TCE were migrating as shown by the QD modeling, the human health and ecological risks are limited. The adjoining properties to the west are connected to public water service and are not in residential use; thus, there is no imminent health risk to off-Site ground water users. Further, given the relatively low concentrations of TCE detected in on-Site ground water and the non-residential use of the adjoining properties to the west, there is no imminent vapor intrusion risk to off-Site users. There also is no imminent risk to ecological receptors, as the former quarry pond (and its associated wildlife) is located approximately 100 feet beyond the QD model's maximum plume



extent. The release of TCE also is historic in nature, leading the model to conclude that equilibrium conditions are established within 10 years.

## 5.2 Benzene and Naphthalene Modeling

Given the recently observed increases in benzene and naphthalene concentrations in MW-6, the QD model was used to predict the extents of these compounds in ground water beneath the Site. Only compound-specific input parameters (e.g., concentrations, lambda, and KOC values) were revised and adjusted for sensitivity analysis relative to historical and recent conditions. For instance, the source concentrations used in the modeling were selected from temporary well sample TW-02 collected by the USEPA on November 19, 2008 (benzene – 3,100 µg/L; naphthalene – 5,900 µg/L), as this sample represents the highest concentrations of these compounds detected upgradient from MW-6. For calibration purposes, the January 13, 2022 concentrations of these compounds detected at MW-6 (benzene – 63.1 µg/L; naphthalene – 627 µg/L) were input at a distance of approximately 100 feet (the approximate distance between TW-02 and MW-6) and the time interval was set at 4,803 days (the duration between the two sampling dates).

Calibrating the benzene model to the observed field data required only adjustment of the lambda value from the published value in Table 5 of Appendix A of Chapter 250. The results of the QD modeling for benzene indicate that the benzene concentrations will attenuate to levels below the Act 2 SHS within 169 feet from the source (TW-02). In the downgradient direction from sample TW-02, this distance is approximately 69 feet beyond MW-6 and at a location that is within the boundaries of the Site. The projected extent of benzene in ground water, based on the QD modeling, is included on Figure 7.

Attempting to calibrate the naphthalene model required a reduction of the lambda value and increasing the horizontal dispersivity ( $A_x$ ) value to simulate the travel time from TW-02 to MW-6. Under this scenario, the naphthalene plume is projected to attenuate to levels below the Act SHS within 151 feet from TW-02. This calculated extent is consistent with the observed field conditions, as naphthalene has not been detected in MW-9 (located approximately 185 feet from the location of sample TW-02). However, the increased dispersivity and lower lambda values required to calibrate the model to current conditions suggest that naphthalene concentrations would not reach equilibrium (i.e., no further migration) until approximately 65,000 days (or 178 years) after the initial detection, and after reaching a maximum migration distance of 415 feet from TW-02. This modeled outcome does not appear likely to occur, given that concentrations have reduced nearly ten-fold during the past 13 years, over a horizontal distance of approximately 100 feet. Naphthalene is generally a less mobile compound than benzene or TCE, as reflected by its relatively higher organic carbon partitioning (KOC) value. While the QD model for naphthalene does not reflect likely future migration, the modeling results for benzene and TCE (as discussed above) calibrate well to the observed ground water data, and project a conservative potential migration distance from the source area(s).

### 5.3 Fate and Transport Analysis Summary

The following points summarize the results of the Fate and Transport analysis:

- Migration of ground water and dissolved VOCs is generally to the west to southwest.
- Preliminary and calibrated TCE models are highly consistent, indicating that under steady-state conditions, concentrations of TCE would attenuate to levels below the Act 2 SHS within 195 feet from the source location (MW-6). This location is beneath a parking lot of an adjoining industrial property.
- The model assumes a constant (steady-state) source concentration, yet TCE concentrations have decreased at MW-6 to levels below the Act 2 SHS. The TCE model is, therefore, highly conservative in its projected extent.
- The presence of petroleum-related compounds into the vicinity of MW-6 has recently been observed. The benzene model calibrated well to historic vs. recent concentrations and required relatively little revision of input parameters. The model projects benzene concentrations will attenuate to levels below the Act 2 SHS within the boundaries of the Site.
- Naphthalene concentrations do not model/calibrate well to Site conditions. The model projection appears to severely overestimate the potential extent of naphthalene. Field data indicate a nearly ten-fold decrease in concentrations during the past 13 years, over a horizontal distance of approximately 100 feet. The well-calibrated TCE and benzene models appear more representative of potential plume migration distances.
- Risks to human health and ecological receptors are limited. There is no current risk of exposure to impacted ground water via ingestion or inhalation, or by ecological receptors (discussed further below).

## **6.0 EXPOSURE PATHWAYS AND ECOLOGICAL RECEPTORS**

An evaluation of potential exposure pathways has been completed relative to the COCs for the Site. For an exposure pathway to be complete, it must contain a source, a transport medium (e.g., soil, air, or ground water), a point of contact (receptor), and an exposure route (e.g., ingestion, dermal contact, or inhalation). If any of these elements is missing, an exposure pathway is deemed incomplete and can be excluded from further evaluation per USEPA and PADEP guidance. Each of the following exposure routes was assessed with respect to identifying potentially complete exposure scenarios.

### **6.1 Direct Contact**

As documented in this report, shallow/surface soils and subsurface soils include concentrations of various COCs above acceptable levels of risk (i.e., Direct Contact values). However, the Direct Contact pathway is currently incomplete, given the security fencing that currently surrounds, and restricts access to, the Site and thereby eliminates the potential for direct dermal contact with impacted soils.

The proposed future use of the Site is a public park and open recreational space, such that the Direct Contact pathway is potentially complete in the future, if no mitigation measures were put in place. As such, the Direct Contact pathway will be eliminated in the future through the implementation of an Environmental Covenant (EC) that will require a protective barrier (i.e., two feet of clean fill) to be placed above the existing surface of the entire Site. In addition, the EC will include a requirement to conduct future earthwork activities in accordance with a Soil Management Plan to protect worker health and safety and to properly manage any excavated materials during any utility installation work or redevelopment and construction activities.

### **6.2 Ingestion**

Ingestion is currently an incomplete pathway, as no potable wells are located on the Site or adjoining properties. BL Companies conducted a search of the PA Ground Water Information System (PaGWIS) database, which identified no potable wells within approximately one-half mile of the Site. The PaGWIS database search output is provided as Appendix I. In addition, none of the deep piezometer wells located within and surrounding the source area included exceedences of Act 2 SHSs for any analyzed compound.

In the future, ingestion could potentially become a complete exposure pathway if a potable well was installed on the Site or the adjoining properties to the west. As such, the ingestion pathway will be eliminated via a requirement in an EC to restrict ground water use at the Site, and to monitor the adjoining properties for the installation of a potable water supply well(s). Alternatively, the Township could enact a municipal ordinance (or a revision to an existing ordinance) that would require all properties within the Township to connect to the public water supply system and include an obligation by

the Township to report to DEP any changes to this mandatory connection ordinance in the future.

### 6.3 Inhalation

The inhalation pathway is currently incomplete, as there are no inhabitable structures located on the Site within proximity distances from soils with COCs above their respective soil vapor intrusion screening value (SV<sub>soil</sub>). However, given the nature of the COCs, and at least one sample location with a concentration of benzene above its SV<sub>soil</sub>, the inhalation pathway could potentially be complete at the Site if an inhabitable structure was built on the Site in the future. As such, the inhalation pathway will be eliminated via a requirement in an EC to install a vapor barrier or mitigation/ventilation system beneath any future inhabitable structures at the Site.

### 6.4 Surface Water

The nearest surface water body to the Site is the former quarry pond, located approximately 200 feet to the west-northwest of the Site boundary, and approximately 140 feet beyond the projected extent of the TCE plume. Given its relative distance from the outer fringe of the TCE plume, and the recent decreases in TCE concentrations at the source area (MW-6), there is no evidence to suggest that the quarry pond has been or will be affected by Site conditions. As indicated above, benzene concentrations are predicted to attenuate to levels below the Act 2 SHS within the boundaries of the Site.

### 6.5 Ecological Receptor Assessment

In addition to the surface water evaluation, BL Companies conducted a search of the Pennsylvania Natural Diversity Index (PNDI) database system to determine whether any threatened or endangered species or sensitive habitats are known to exist in the vicinity of the Site. A copy of the PNDI search results is provided as Appendix J. As documented in the PNDI search receipt, no known impacts to special concern species or natural resources were identified at the Site or surrounding area. As such, there is no indication that ecological receptors are at risk, relative to Site conditions.

### 6.6 Exposure Pathway / Receptor Summary

The following table presents a summary of the exposure pathway and ecological receptor evaluation for the Site.

<b>Exposure Pathway / Receptor</b>	<b>Potentially Complete Without Mitigation?</b>	<b>Proposed Pathway Elimination Method</b>
Direct Contact	Yes	Soil Cap and Soil Management Plan
Ingestion	Yes	GW use restriction

Inhalation	Yes	Vapor barrier/mitigation requirement for future inhabitable structures
Surface Water	No	N/A
Ecological Receptors	No	N/A

At the outset of investigations undertaken by Springfield Township, the primary constituents of concern for the Site were TCE and PCE, detected in ground water samples from monitoring wells along the western side of the Site. The current data suggest that a co-mingled plume exists, with the increase in benzene concentrations (and other petroleum-related compounds, including toluene, ethylbenzene, xylenes, and naphthalene) directly corresponding to decreased TCE concentrations in MW-6. Field measurements during well purging/sampling activities indicate depleted dissolved oxygen concentrations and relatively lower oxidation-reduction potential (ORP) at MW-6 during the October 2020 to January 2022 sampling events. These field data indicate that the presence of the petroleum-related compounds in the shallow aquifer system is creating anoxic, reducing conditions which are contributing to the degradation of the chlorinated solvent plume. To date, benzene and other petroleum-related compounds have not been detected in the immediately surrounding shallow wells MW-8, MW-9, or MW-11, and have generally only been detected in the temporary well samples collected by the USEPA in 2008.

Ground water fate and transport modeling confirms that exposure pathways to the COCs in soil and ground water at the Site are currently incomplete, although these pathways could potentially become complete without further mitigation/remedial measures.

### 7.1 Selection of Remedial Standard

In order to render the Direct Contact, Ingestion, and Inhalation, pathways incomplete, remedial actions will be needed at the Site. The selected remedy is a pathway elimination approach under the Act 2 Site Specific Standard through the implementation of engineering and/or institutional controls and administrative maintenance through an EC on the property's deed.

The proposed pathway elimination measures will be implemented using an EC with certain activity and use limitations (AULs) in accordance with Pennsylvania's Uniform Environmental Covenants Act (UECA). These measures will include placing a clean fill soil cap over the entire Site; restricting ground water use; requiring future earthwork to be conducted in accordance with a soil management plan; and requiring future inhabitable structures to incorporate vapor mitigation measures. The clean fill soil cap will eliminate direct contact exposure, while the soil management plan would protect construction workers during future redevelopment activities and prevent potential exacerbation of ground water conditions. The ground water use restriction (and requirement to monitor downgradient properties for potable wells) will eliminate the ingestion pathway. In addition, a condition of the EC to require vapor mitigation measures for future inhabitable structures would eliminate the inhalation exposure pathway without inhibiting future development of the Site. Details of the proposed pathway elimination measures are discussed in the Cleanup Plan, presented below.

Based on the site characterization data and the evaluations presented in the RIR, the Cleanup Plan (CP) remedial method is Pathway Elimination via institutional and engineering controls. This approach will eliminate exposure pathways through the implementation of an EC (prepared in accordance with UECA regulations) to demonstrate attainment of the Act 2 Site-Specific Standard.

### 8.1 Pathway Elimination Measures

The proposed remedial method for the Site is to utilize engineering and institutional controls to eliminate the potentially complete exposure pathways. These tasks and pathway elimination measures will include:

- Preparation and implementation of an EC with AULs to:
  - (a) Require the placement of a clean fill soil cap (minimum thickness of two feet) over the entire Site;
  - (b) Require future earthwork activities to be conducted in accordance with a soil management plan;
  - (c) Restrict the use of ground water at the Site and periodically ensure that no potable wells have been installed at the western-adjointing properties; and,
  - (d) Require future inhabitable buildings on the Site to incorporate vapor mitigation measures into the construction designs.
- Preparation of a Final Report for submittal to PADEP, documenting the completion of the remedial activities and to request a release of liability in accordance with the provisions of Act 2.

Collectively, these proposed remedial measures will eliminate potentially complete exposure pathways, adequately protect human health and the environment, and restore the Site to a productive use. It is noted that an Environmental Covenant waiver request may be required for the Township-owned right-of-way along the western boundary of the Site. This public infrastructure is unlikely to change in use or require any AULs to maintain pathway elimination in the future. If requested or required by the Department, an EC waiver request will be prepared separately and submitted to the Department prior to the submittal of a Final Report for the Site.

### 8.2 Constituents of Concern

The compounds for which attainment of the Act 2 Site Specific Standard is being sought in soil and/or ground water include the following:

**VOCs**

Benzene	TCE	PCE
---------	-----	-----

**SVOCs**

Benzo(a)anthracene	Chrysene	Naphthalene
Benzo(a)pyrene	Dibenzo(a,h)anthracene	
Benzo(b)fluoranthene	Hexachloroethane	
Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene	

**Metals**

Antimony	Cobalt	Vanadium
Arsenic	Lead	



Geyer, Alan R. and J. Peter Wilshusen. Engineering Characteristics of the Rocks of Pennsylvania, Pennsylvania Geological Survey, 4th Series, Harrisburg, Pennsylvania, 1982.

Pennsylvania Geological Survey, *PaGEODE* online mapping application, <http://www.gis.dcnr.state.pa.us/maps/index.html>.

Sevon, W.D., 2000, Physiographic Provinces of Pennsylvania, Bureau of Topographic and Geologic Survey, Harrisburg, PA.

United States Geological Survey, 7.5-Minute Series Topographic Quadrangle of Germantown, Pennsylvania.

USDA, National Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.

“Revised Work Plan for Site Assessment Activities, Former Tank Car Corporation of America Site, 1725 Walnut Avenue, Oreland, Springfield Township, Montgomery County, Pennsylvania,” September 20, 2019, BL Companies.

## **FIGURES**

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3 - 6	Ground Water Elevation Contour Maps
Figure 7	Projected Extent of TCE and Benzene in Ground Water

## **TABLES**

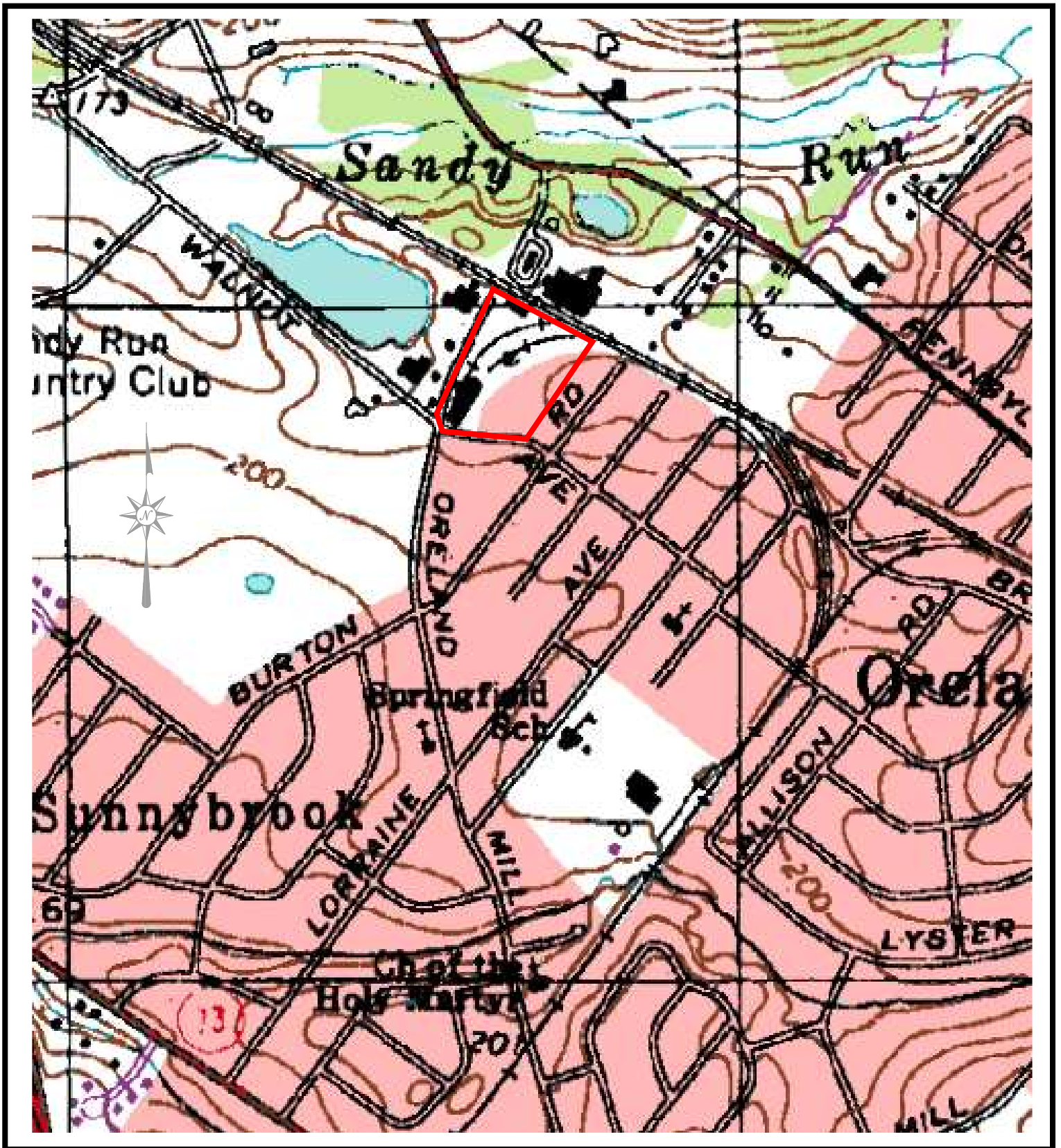
Table 1	Summary of 2017 Soil Analytical Results
Table 2	Summary of 2020 Soil Analytical Results
Table 3	Permanent Monitoring Well Construction and Elevation Data
Table 4	Ground Water Data Summary – 2008 Temporary Well Sampling
Table 5	Ground Water Data Summary – Permanent Monitoring Well

## **APPENDICES**

Appendix A	Act 2 Administrative Documents
Appendix B	Clean Fill Due Diligence Report
Appendix C	Redevelopment Concept Plan
Appendix D	USEPA Files
Appendix E	Laboratory Reports – 2017 Interior Soil Samples
Appendix F	Laboratory Reports – 2020 Delineation Soil Samples
Appendix G	Laboratory Reports – 2017 – 2022 Ground Water Samples
Appendix H	Fate and Transport Analysis
Appendix I	PaGWIS Database Search
Appendix J	PNDI Search Receipt

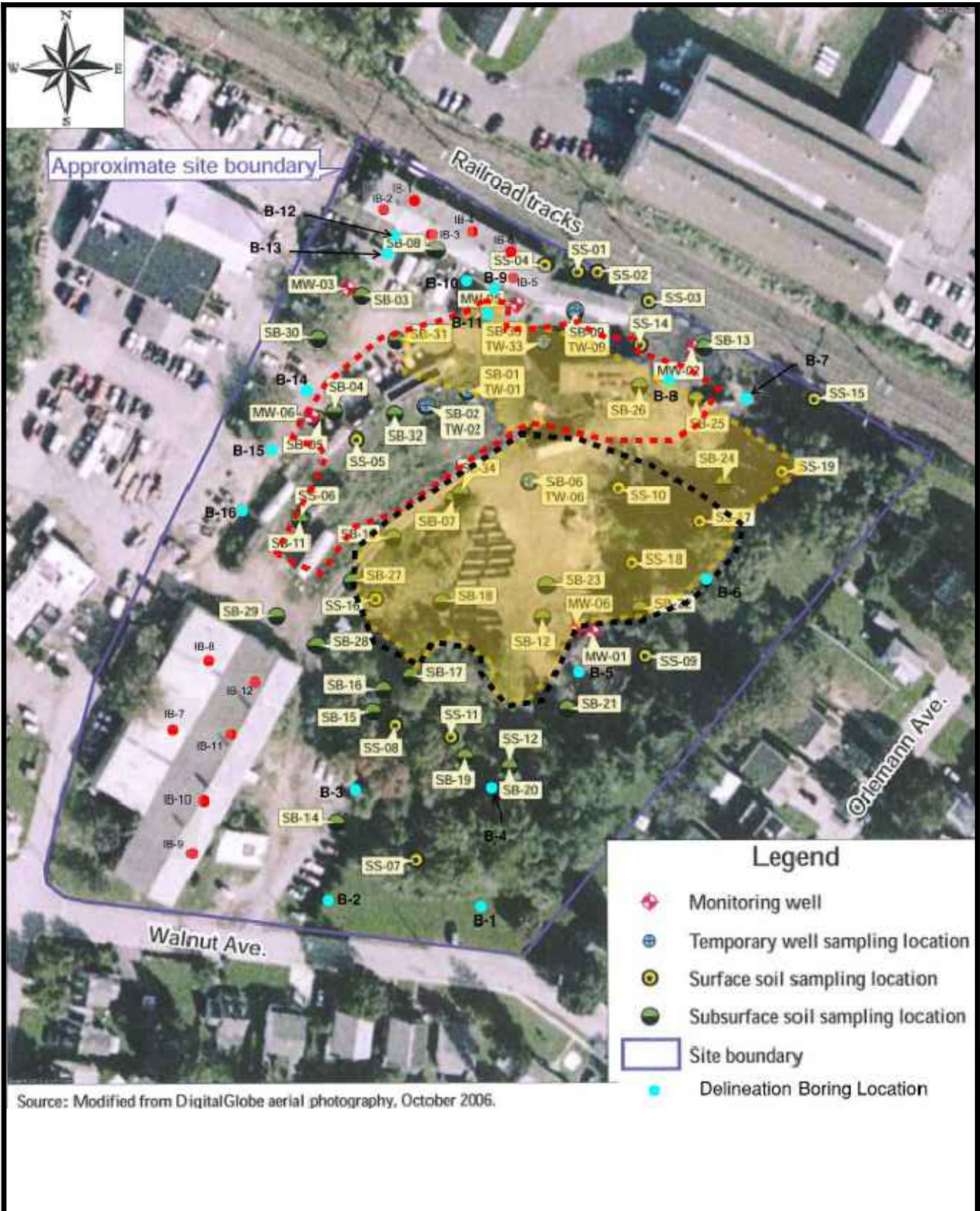
## FIGURES

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Figure 3 - 6 Ground Water Elevation Contour Maps
- Figure 7 Projected Extent of TCE and Benzene in Ground Water



**FIGURE 1 - SITE LOCATION MAP**  
**FORMER TCCA SITE**  
**1725 WALNUT AVENUE**  
**ORELAND, PENNSYLVANIA**

Scale: NOT TO SCALE  
 Project Number: 1715438  
 Date: 08/01/2018



**SITE PLAN**  
 SPRINGFIELD TOWNSHIP  
 1725 WALNUT AVENUE  
 ORELAND, PENNSYLVANIA

**FIGURE 2**

Drawn	S.R.L.
Reviewed	R.S.
Scale (Approx.)	1"=130'
Project No.	17L5438
Date	02/10/2022
CAD File	EV17L5438-Fig 2





**GROUND WATER ELEVATION CONTOUR MAP (04/12/21)**

**SHALLOW WELLS**

SPRINGFIELD TOWNSHIP  
 1725 WALNUT AVENUE  
 ORELAND, PENNSYLVANIA

**FIGURE 3**

Drawn	S.R.L.
Reviewed	R.S.
Scale (Approx.)	1"=100'
Project No.	17L5438
Date	02/10/2022
CAD File	EV17L5438-GWS 2021-04-12



NOTE: Aerial imagery from Google Earth.





**GROUND WATER ELEVATION CONTOUR MAP (07/13/21)  
SHALLOW WELLS**

SPRINGFIELD TOWNSHIP  
1725 WALNUT AVENUE  
ORELAND, PENNSYLVANIA

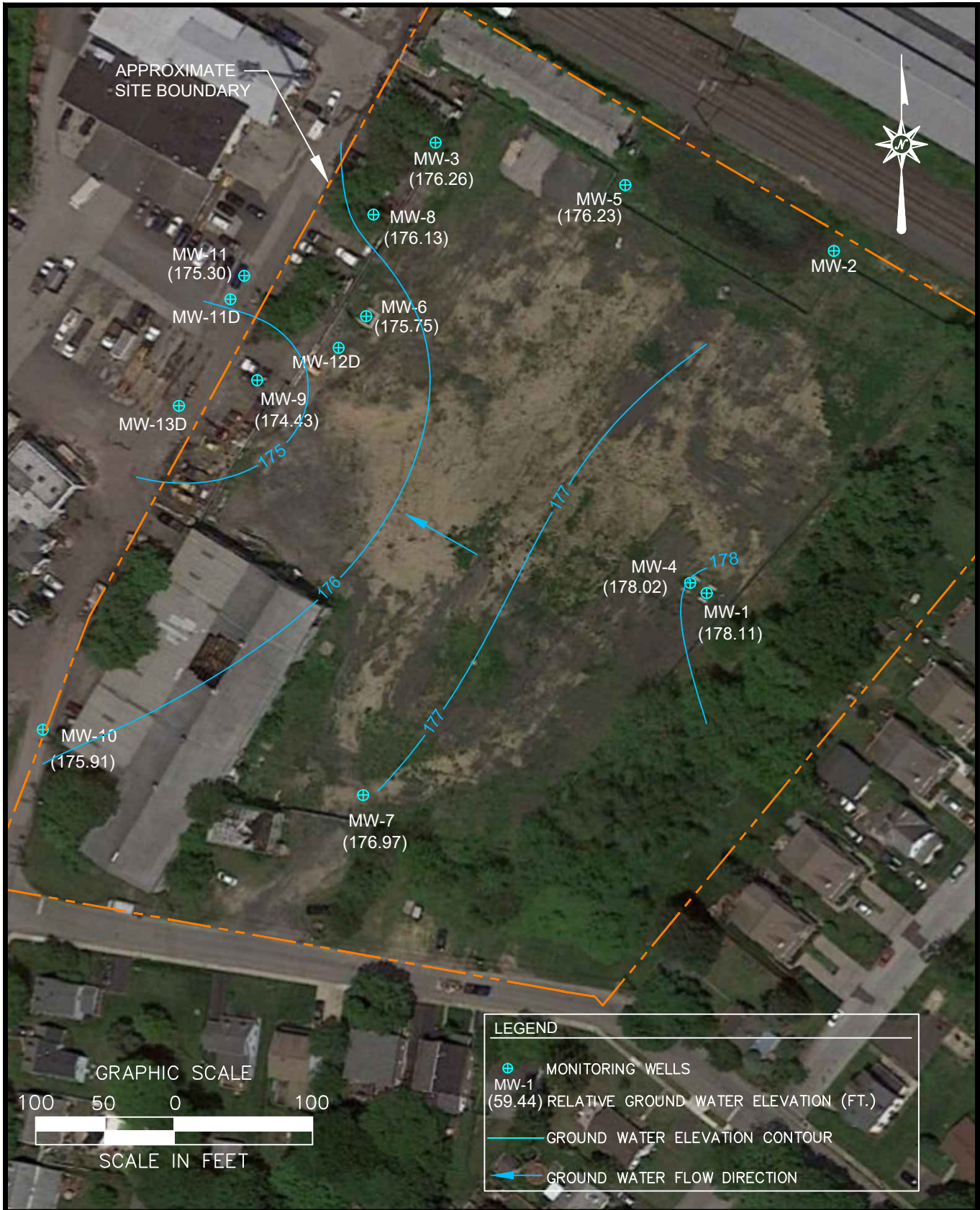
**FIGURE 4**

Drawn S.R.L.  
Reviewed R.S.  
Scale (Approx.) 1"=100'  
Project No. 17L5438  
Date 02/10/2022  
CAD File EV17L5438-GWS 2021-07-13



NOTE: Aerial imagery from Google Earth.





**GROUND WATER ELEVATION CONTOUR MAP (10/26/21)  
SHALLOW WELLS**

SPRINGFIELD TOWNSHIP  
1725 WALNUT AVENUE  
ORELAND, PENNSYLVANIA

**FIGURE 5**

Drawn	S.R.L.
Reviewed	R.S.
Scale (Approx.)	1"=100'
Project No.	17L5438
Date	02/10/2022
CAD File	EV17L5438-GWS 2021-10-26



NOTE: Aerial imagery from Google Earth.





**GROUND WATER ELEVATION CONTOUR MAP (01/12/22)**

**SHALLOW WELLS**

SPRINGFIELD TOWNSHIP  
1725 WALNUT AVENUE  
ORELAND, PENNSYLVANIA

**FIGURE 6**

Drawn	S.R.L.
Reviewed	R.S.
Scale (Approx.)	1"=100'
Project No.	17L5438
Date	02/10/2022
CAD File EV17L5438-GWS 2022-01-12	



NOTE: Aerial imagery from Google Earth.





**Projected Extent of TCE and Benzene in Ground Water**

SPRINGFIELD TOWNSHIP  
 1725 WALNUT AVENUE  
 ORELAND, PENNSYLVANIA

**FIGURE 7**

Drawn S.R.L.  
 Reviewed R.S.  
 Scale (Approx.) 1"=100'  
 Project No. 17L5438  
 Date 02/10/2022  
 CAD File EV17L5438-GWS 2021-04-12

NOTE: Aerial imagery from Google Earth.

## TABLES

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**Table 2**  
**Summary of 2020 Soil Analytical Results**  
**Former Tank Car Corporation of America Site**  
**1725 Walnut Avenue**  
**Springfield Twp., Montgomery County, PA**  
**BL Project No. 17L5438**

Sample ID:	Depth:	Date Sampled:	Units	Residential Soil to GW	Residential Direct Contact 0-15 ft	Non Res Soil to GW	Non Res Direct Contact 0-2 ft	Non Res Direct Contact 2-15 ft	B-1A	B-1B	B-2A	B-2B	B3-A	B-3B	B-4A	B-4B	B-5A	B-5B	B-6A	B-6B	B-7A	B-7B	B-8A	B-8B	B-9A	B-9B	B-10A	B-10B	B-11A	B12-A	B-12B	B-13A	B-13B	B-14A	B-14B	B-15A	B-15B	B-16A	B-16B
									1-2'	12-13'	1-2'	9-10'	0.5-1.5'	6-7'	0.5-1.5'	5-6'	0.5-1.5'	3-4'	1-2'	5-6'	0-1'	4.5-5.5'	0.5-1.5'	3.5-4.5'	1-2'	2-3'	1-2'	1-2'	5-6'	1-2'	4.5-5.5'	1-2'	12-13'	1-2'	5-6'	1-2'	5-6'	1-2'	5-6'
<b>Volatile Organic Compounds</b>																																							
Acetone	mg/kg	3100	10000	8800	10000	10000	10000	10000	<0.016	0.010 J	<0.012	<0.011	<0.012	0.0058 J	<0.0094	<0.012	<0.010	0.184	<0.015	<0.012	<0.011	0.0173	<0.0093	0.0213	0.0378	<18	<0.017	<0.011	<2.5	0.0275	<0.012	0.0162	<0.013	<0.017	<0.018	<0.015	<0.011	<0.016	<0.011
2-Butanone (MEK)	mg/kg	400	10000	400	10000	10000	10000	10000	<0.016 <sup>d</sup>	<0.011 <sup>c</sup>	<0.012 <sup>c</sup>	<0.011 <sup>d</sup>	<0.012	<0.0097	<0.0094	<0.012	<0.010	0.0277	<0.015	<0.012	<0.011	<0.0056	<0.0093	<0.020	<0.016	<18	<0.017	<0.011	<2.5	<0.022	<0.012	<0.015	<0.013	<0.017	<0.018	<0.015	<0.011	<0.016	<0.011
Benzene	mg/kg	0.5	57	0.5	280	330	<0.00079	<0.00055	<0.00060	<0.00056	<0.00061	<0.00049	<0.00047	<0.00060	<0.00052	<0.00052	<0.00052	<0.00052	<0.00075	<0.00059	<0.00055	<0.00047	<0.0010	<0.00082	<0.91	<0.00084	<0.00055	0.361	<0.0011	<0.00061	<0.00077	<0.00067	<0.00086	<0.00091	<0.00074	<0.00056	<0.00078	<0.00057	<0.00023
Carbon disulfide	mg/kg	150	10000	620	10000	10000	<0.0031	<0.0022	<0.0024	<0.0022	<0.0024	<0.0019	<0.0019	<0.0024	<0.0021	0.003	<0.0030	<0.0024	<0.0022	<0.0023	<0.0019	<0.0041	<0.0033	<3.7	<0.0034	<0.0022	<0.49	<0.0044	<0.0024	<0.0031	<0.0027	<0.0035	<0.0037	<0.0030	<0.0022	<0.0031	<0.0023	<0.0023	<0.0023
Chloroform	mg/kg	8	19	8	96	110	<0.0031	<0.0022	<0.0024	<0.0022	<0.0024	<0.0019	<0.0019	<0.0024	<0.0021	<0.0021	<0.0030	<0.0024	<0.0022	<0.0023	<0.0019	<0.0041	<0.0033	<3.7	<0.0034	<0.0022	<0.49	<0.0044	<0.0024	<0.0031	<0.0027	0.0012 J	<0.0037	<0.0030	<0.0022	<0.0031	<0.0023	<0.0023	
Ethylbenzene	mg/kg	70	180	70	880	1000	<0.0016	<0.0011	<0.0012	<0.0011	<0.0012	<0.00097	<0.00094	<0.0012	<0.0010	<0.0010	<0.0015	<0.0012	<0.0011	<0.0011	<0.00093	<0.0020	<0.0016	4.35	<0.0017	<0.0011	1.69	<0.0022	<0.0012	<0.0015	<0.0013	<0.0017	<0.0018	<0.0015	<0.0011	<0.0016	<0.0011	<0.0011	
Styrene	mg/kg	24	10000	24	10000	10000	<0.0031	<0.0022	<0.0024	<0.0022	<0.0024	<0.0019	<0.0019	<0.0024	<0.0021	<0.0021	<0.0030	<0.0024	<0.0022	<0.0023	<0.0019	<0.0041	<0.0033	3.09 J	<0.0034	<0.0022	1.14	<0.0044	<0.0024	<0.0031	<0.0027	<0.0035	<0.0037	<0.0030	<0.0022	<0.0031	<0.0023	<0.0023	
Toluene	mg/kg	100	10000	100	10000	10000	<0.0016	<0.0011	<0.0012	<0.0011	<0.0012	<0.00097	<0.00094	<0.0012	<0.0010	<0.0010	<0.0015	<0.0012	<0.0011	<0.0011	<0.00093	<0.0020	<0.0016	2.72	<0.0017	<0.0011	1.32	<0.0022	<0.0012	<0.0015	<0.0013	<0.0017	<0.0018	<0.0015	<0.0011	<0.0016	<0.0011	<0.0011	
Xylenes (total)	mg/kg	1000	1900	1000	7900	9100	<0.0016	<0.0011	<0.0012	<0.0011	<0.0012	<0.00097	<0.00094	<0.0012	<0.0010	<0.0010	<0.0015	<0.0012	<0.0011	<0.0011	<0.00093	<0.0020	<0.0016	22.4	<0.0017	<0.0011	8.78	<0.0022	<0.0012	<0.0015	<0.0013	<0.0017	<0.0018	<0.0015	<0.0011	<0.0016	<0.0011	<0.0011	
<b>Semivolatile Organic Compounds</b>																																							
Acenaphthene	mg/kg	2600	13000	4700	190000	190000	<0.036	<0.038	<0.038	<0.039	<0.038	0.0166 J	0.657	0.0194 J	<0.039	0.773	<0.040	<0.039	<0.038	<0.040	<0.033	<0.040	42.3	10.4	0.0361 J	<0.040	4.04	0.102 J	<0.041	0.0275 J	0.0273 J	0.0149 J	<0.041	<0.039	<0.039	<0.039	<0.039	<0.039	
Acenaphthylene	mg/kg	2400	13000	6800	190000	190000	<0.036	<0.038	<0.038	<0.039	0.0399	0.138	0.698	<0.038	<0.039	0.958	<0.040	<0.039	<0.038	<0.040	<0.033	<0.040	25.7	7.88	0.3	<0.040	1.17	0.186 J	<0.041	0.295	0.115	0.177	<0.041	<0.039	<0.039	<0.039	<0.039	<0.039	
Anthracene	mg/kg	350	66000	350	190000	190000	<0.036	<0.038	<0.038	<0.039	0.0416	0.118	2.74	0.0446	<0.039	21.8	<0.040	0.0302 J	<0.038	<0.040	<0.033	<0.040	288	36.5	0.306	<0.040	6.77	0.341	<0.041	0.274	0.134	0.23	<0.041	<0.039	<0.039	<0.039	<0.039	<0.039	
Benzo(a)anthracene	mg/kg	26	6.1	340	130	190000	0.0966	<0.038	<0.038	<0.039	0.127	0.421	<b>10.3</b>	0.114	0.0126 J	3.08	<0.040	0.0613	0.0153 J	0.0200 J	0.0924	0.0200 J	<b>151</b>	<b>30.1</b>	1.02	<0.040	<b>8.09</b>	0.756	0.0177 J	0.751	0.461	0.681	0.0211 J	0.0388 J	<0.039	0.0655	<0.039	<0.039	
Benzo(a)pyrene	mg/kg	46	4.2	46	91	190000	0.1	<0.038	<0.038	<0.039	0.117	0.369	<b>11.4</b>	0.118	<0.039	3.34	<0.040	0.0714	<0.038	0.0224 J	0.135	<0.040	<b>110</b>	<b>23.8</b>	1.13	<0.040	<b>6.91</b>	0.791	<0.041	0.914	0.515	0.814	<0.041	0.0427	<0.039	0.0718	<0.039	<0.039	
Benzo(b)fluoranthene	mg/kg	25	3.5	170	76	190000	0.14	<0.038	<0.038	<0.039	0.107	0.376	<b>13.1</b>	0.148	<0.039	<b>3.94</b>	<0.040	0.0808	0.0173 J	0.0301 J	0.173	0.0191 J	<b>144</b>	<b>29.5</b>	1.55	<0.040	<b>7.98</b>	1.22	0.0211 J	1.42	0.714	1.09	<0.041	0.0456	<0.039	0.0935	<0.039	<0.039	
Benzo(g,h,i)perylene	mg/kg	180	13000	1800	190000	190000	0.0595	<0.038	<0.038	<0.039	0.0602	0.242	7.55	0.0686	<0.039	1.94	<0.040	0.0408	<0.038	0.0222 J	0.117	<0.040	53.5	11.9	0.837	<0.040	3.18	0.806	0.0406 J	1.25	0.408	0.598	<0.041	0.0327 J	<0.039	0.0573	<0.039	<0.039	
Benzo(k)fluoranthene	mg/kg	200	3.5	610	76	190000	0.0521	<0.038	<0.038	<0.039	0.0319 J	0.109	<b>4.96</b>	0.0528	<0.039	1.55	<0.040	0.0342 J	<0.038	<0.040	0.0659	<0.040	<b>55.3</b>	<b>8.81</b>	0.514	<0.040	3.1	0.449	<0.041	0.455	0.217	0.348	<0.041	<0.039	<0.039	0.0323 J	<0.039	<0.039	
Chrysene	mg/kg	220	35	230	760	190000	0.112	<0.038	<0.038	<0.039	0.149	0.476	10.3	0.113	<0.039	3.34	<0.040	0.0694	0.0124 J	0.0215 J	0.12	0.0203 J	<b>147</b>	26	1.33	<0.040	8.19	1.02	0.0171 J	0.925	0.541	0.731	0.0147 J	0.0364 J	<0.039	0.0793	<0.039	<0.039	
Dibenzo(a,h)anthracene	mg/kg	23	1	270	22	190000	<0.036	<0.038	<0.038	<0.039	<0.038	0.0516	<b>1.76</b>	<0.038	<0.039	0.464	<0.040	<0.039	<0.038	<0.040	0.0180 J	<0.040	<b>17.3</b>	<b>3.48</b>	0.191	<0.040	0.867	0.189 J	<0.041	0.214	0.0838	0.14	<0.041	<0.039	<0.039	<0.039	<0.039	<0.039	
Fluoranthene	mg/kg	3200	8800	3200	130000	190000	0.216	<0.038	<0.038	<0.039	0.17	0.494	18.1	0.255	<0.039	5.93	<0.040	0.111	0.0205 J	0.0335 J	0.17	0.0343 J	434	79.1	2.13	<0.040	23.2	2	0.0281 J	1.52	0.862	1.12	0.0387 J	0.0581	<0.039	0.154	<0.039	<0.039	
Fluorene	mg/kg	2800	8800	3800	130000	190000	<0.036	<0.038	<0.038	<0.039	0.0264 J	0.0524	0.799	0.0195 J	<0.039	2.58	<0.040	<0.039	<0.038	<0.040	<0.033	<0.040	100	30.1	0.0756	<0.040	7.84	0.141 J	0.0261 J	0.0448	0.0514	0.0300 J	<0.041	<0.039	<0.039	<0.039	<0.039		
Indeno(1,2,3-cd)pyrene	mg/kg	1400	3.5	18000	76	190000	0.0617	<0.038	<0.038	<0.039	0.0538	0.208	<b>8.11</b>	0.0797	<0.039	2.16	<0.040	0.0437	<0.038	0.0223 J	0.107	<0.040	<b>51.1</b>	<b>10.8</b>	0.684	<0.040	2.88	0.628	<0.041	0.907	0.332	0.519	<0.041	0.0234 J	<0.039	0.0451	<0.039	<0.039	
Naphthalene	mg/kg	25	13	25	66	77	<0.036	<0.038	<0.038	<0.039	0.0152 J	0.0351 J	0.22	0.0134 J	<0.039	1.57	<0.040	0.0168 J	<0.038	<0.040	<0.033	<0.040	12.7	<b>22.1</b>	0.0767	<0.040	8.58	0.206	0.0126 J	0.155	1.13	0.0673	<0.041	<0.039	<0.039	<0.039	<0.039		
Phenanthrene	mg/kg	10000	66000	10000	190000	190000	0.0926	<0.038	<0.038	<0.039	0.165	0.293	9.77	0.1																									

**Table 3**  
**SUMMARY OF MONITORING WELL CONSTRUCTION AND ELEVATION DATA**  
**FORMER TANK CAR CORPORATION OF AMERICA SITE**  
**SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA**  
**BL COMPANIES PROJECT NO. 17L5438**

Monitoring Well ID	Date Sampled	Total Depth**	Well Diameter (inches*)	Screened/Open Interval	Surveyed TOC Elevation	Static Water Level**	Ground Water Elevation	
MW-1	8/31/17	50.33	4	32 - 51	103.16	43.56	59.60	
	9/20/17	53.71				43.72	59.44	
	1/12/18	--				44.62	58.54	
	10/29/20	50.78				219.92	42.42	177.50
	12/7/20	--				42.62	177.30	
	4/12/21	50.77				41.09	178.83	
	7/13/21	51.58				41.21	178.71	
	10/26/21	51.29				41.81	178.11	
	1/12/22	50.45				42.56	177.36	
MW-2	8/31/17	49.26	4	29 - 47.5	97.60	38.05	59.55	
	9/20/17	50.08				38.31	59.40	
	1/12/18	--				38.90	58.81	
	10/30/20	48.89				214.39	37.67	176.72
	12/7/20	--				37.39	177.00	
	4/12/21	49.57				36.92	177.47	
	7/13/21	49.79				36.74	177.65	
	10/26/21	48.51				41.34	173.05	
	1/12/22	48.81				37.90	176.49	
MW-3	8/31/17	45.28	4	31 - 48	100.00	41.66	58.34	
	9/20/17	51.15				41.82	58.18	
	1/12/18	--				41.86	58.14	
	10/29/20	49.56				216.81	41.45	175.36
	12/7/20	--				40.31	176.50	
	4/12/21	51.10				40.40	176.41	
	7/13/21	50.25				41.19	175.62	
	10/26/21	49.49				40.55	176.26	
	1/12/22	49.61				41.52	175.29	
MW-4	8/31/17	53.82	2	33 - 53	102.97	43.35	59.62	
	9/20/17	54.45				43.31	59.66	
	1/12/18	--				44.38	58.59	
	10/29/20	54.44				219.75	42.17	177.58
	12/7/20	--				42.38	177.37	
	4/12/21	54.65				40.73	179.02	
	7/13/21	54.12				40.94	178.81	
	10/26/21	54.23				41.73	178.02	
	1/12/22	53.94				42.33	177.42	
MW-5	8/31/17	52.58	2	34.5 - 55	98.80	39.99	58.81	
	9/20/17	54.39				42.22	56.58	
	1/12/18	--				40.33	58.47	
	10/30/20	49.67				215.53	39.96	175.57
	12/7/20	--				38.77	176.76	
	4/12/21	52.57				38.82	176.71	
	7/13/21	52.72				39.64	175.89	
	10/26/21	51.95				39.30	176.23	
	1/12/22	52.40				39.97	175.56	
MW-6	8/31/17	47.21	2	28 - 48.5	101.37	43.32	58.05	
	9/20/17	48.16				43.45	57.92	
	1/12/18	--				43.52	57.85	
	10/29/20	47.40				218.10	43.04	175.06
	12/7/20	--				42.35	175.75	
	4/12/21	47.99				42.20	175.90	
	7/13/21	47.94				42.86	175.24	
	10/26/21	47.35				42.35	175.75	
	1/12/22	47.41				43.12	174.98	
MW-7	10/30/20	49.55	2	30 - 50	219.30	42.91	176.39	
	12/7/20	--				43.13	176.17	
	4/12/21	49.57				41.73	177.57	
	7/13/21	49.45				41.86	177.44	
	10/26/21	49.29				42.33	176.97	
	1/12/22	49.95				43.04	176.26	
MW-8	10/29/20	49.78	2	30 - 50	215.93	40.41	175.52	
	12/7/20	--				39.53	176.40	
	4/12/21	50.81				39.05	176.88	
	7/13/21	50.72				39.97	175.96	
	10/26/21	51.71				39.80	176.13	
1/12/22	50.60	39.52	176.41					
MW-9	10/29/20	50.56	2	30 - 50	217.70	43.68	174.02	
	12/7/20	--				43.26	174.44	
	4/12/21	50.75				42.67	175.03	
	7/13/21	50.55				43.26	174.44	
	10/26/21	50.57				43.27	174.43	
1/12/22	50.56	43.74	173.96					
MW-10	10/29/20	50.31	2	30 - 50	219.41	43.97	175.44	
	12/7/20	--				43.03	176.38	
	4/12/21	50.40				43.07	176.34	
	7/13/21	50.28				43.24	176.17	
	10/26/21	50.29				43.50	175.91	
1/12/22	50.30	44.10	175.31					
MW-11	4/12/21	49.05	2	30 - 50	216.73	41.08	175.65	
	7/13/21	48.95				41.72	175.01	
	10/26/21	49.53				41.43	175.30	
	1/12/22	49.00				42.06	174.67	
MW-11D	4/12/21	129.90	5	70 - 99	216.68	41.17	175.51	
	7/13/21	<200				41.80	174.88	
	10/26/21	143.80				41.42	175.26	
	1/12/22	<200				42.60	174.08	
MW-12D	4/12/21	128.54	5	70 - 120	217.53	45.56	171.97	
	7/13/21	132.21				45.69	171.84	
	10/26/21	124.08				45.27	172.26	
	1/12/22	127.65				45.97	171.56	
MW-13D	4/12/21	81.26	5	70 - 80	217.62	42.54	175.08	
	7/13/21	79.19				43.12	174.50	
	10/26/21	79.28				43.00	174.62	
	1/12/22	79.38				43.51	174.11	

**Notes:**

ft. bgs - feet below ground surface  
 TOC - top of PVC or steel casing  
 \* Diameter of PVC or steel well screen and casing.  
 \*\* Feet below TOC

**Table 4**  
**Ground Water Data Summary - Samples from Temporary Wells**  
**Former Tank Car Corporation of America Site**  
**Springfield Township, Montgomery County, Pennsylvania**  
**BL COMPANIES PROJECT NO. 17L5438**

Sample ID	Sample Date	Volatile Organic Compounds																														
		Acetone	Benzene	Carbon Disulfide	Chlorobenzene	Chloroform	Cyclohexane	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dichloropropane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone (Methyl n-butyl ketone)	Isopropylbenzene	Methyl Isobutyl ketone (MIBK)	Methyl acetate	MTBE	Methylcyclohexane	Methyl Ethyl Ketone (2-Butanone)	Methylene Chloride	Styrene	Tetrachloroethene (PCE)	Toluene	1,1,2-Trichloroethane	Trichloroethene (TCE)	Total Xylenes
TW-01	11/19/2008	22 B	<b>460</b>	1.2 J	<5.0	14 B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	11 B	5.9	<5.0	<5.0	77	<10	7.9	3.1 J	0.86 J	<5.0	16 B	6.3 B	2.8 B	92	<b>10</b>	300	2.2 J	<5.0	470	
TW-02	11/19/2008	530	<b>3100</b>	15	22	0.56 B	1.0 J	<5.0	<b>890</b>	7.9	<b>110</b>	<5.0	<b>86</b>	10 B	13	<5.0	<5.0	290	40	25	89	1.1J	<5.0	17 B	150	22 B	<b>800</b>	<b>5.9</b>	<b>3500</b>	<5.0	<b>68</b>	2010
TW-06	11/20/2008	13 B	<b>580</b>	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<b>13</b>	<5.0	<5.0	<5.0	99	<10	4.0 J	<10	<5.0	<5.0	17 B	4.7 B	2.5 B	1.6 J	<5.0	25	<5.0	<5.0	45	
TW-09	11/20/2008	14 B	<b>150</b>	<5.0	2.9 J	0.58 B	<5.0	<b>82</b>	<5.0	<5.0	0.60 J	<5.0	<b>7.3</b>	11 B	<5.0	4.6 J	3.3 J	85	20	16	<10	<5.0	17 B	4.9 B	3.1 B	3.5 J	<5.0	22	0.52 J	0.69 J	90	
<b>ACT 2 STATEWIDE HEALTH STANDARDS</b>																																
Residential Used Aquifer		38,000	5	1,500	100	80	13,000	0.2	600	600	75	31	5	5	70	7.3	NS	700	63	840	3,300	42,000	20	NS	4,000	5	100	5	1,000	5	5	10,000
Non-Residential Used Aquifer		110,000	5	6,200	100	80	53,000	0.2	600	600	75	160	5	5	70	34	NS	700	260	3,500	9,300	120,000	20	NS	4,000	5	100	5	1,000	5	5	10,000
Sample ID	Sample Date	Semi-Volatile Organic Compounds																														
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	1,4-Biphenyl	Bis(2-ethylhexyl)phthalate	Carbazole	Dibenzofuran	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	4-Methylphenol (p-cresol)	Naphthalene	Phenanthrene	Phenol	Pyrene	2,4,5-Trichlorophenol	2-Chlorophenol	2-Methylphenol (o-cresol)	2,4-Dimethylphenol	Pentachlorophenol	N-Nitrosodiphenylamine		
TW-01	11/19/2008	73	110 J	<b>210</b>	<b>11</b>	<b>6.8</b>	<b>9.3</b>	<b>4.2 J</b>	<b>3.5 J</b>	43	<5.0	<b>440</b>	<b>110 J</b>	<b>21</b>	<b>1.2 J</b>	49	120 J	<b>4.2 J</b>	<b>390 J</b>	<b>1000</b>	<b>5200</b>	180	360 J	31	7.2	<5.0	500 J	680 J	<10	<5.0		
TW-02	11/19/2008	110 J	72	51	<b>12</b>	<b>6.7</b>	<b>8.1</b>	<b>3.1 J</b>	<b>3.0 J</b>	39	<5.0	<b>430 J</b>	<b>95 J</b>	<b>10</b>	<5.0	53	140 J	<b>3.0 J</b>	<b>440 J</b>	<b>7700</b>	<b>5900</b>	210 J	<b>3500</b>	45	3.9 J	<b>41</b>	<b>3400</b>	<b>4000</b>	<b>5.4 J</b>	29		
TW-06	11/20/2008	16	1.4 J	3.2 J	<b>1.0 J</b>	<b>0.88 J</b>	<b>1.2 J</b>	<b>0.60 J</b>	<5.0	3.5 J	0.62 J	16	8.6	1.1 J	<5.0	3.7 J	12	<5.0	21	10	<b>420</b>	9.7	5.8	3.1 J	<5.0	<5.0	9.8	36	<10	8.8		
TW-09	11/20/2008	220 J	9.7	23	<b>20</b>	<b>14</b>	<b>18</b>	<b>8.5</b>	<b>8.1</b>	52	1.3 J	<b>100 J</b>	<b>120 J</b>	<b>18</b>	<b>2.4 J</b>	69	120 J	<b>8.6</b>	96 J	<5.0	<b>2500</b>	160 J	<5.0	47	<5.0	<5.0	4.3 J	21	<10	<5.0		
<b>ACT 2 STATEWIDE HEALTH STANDARDS</b>																																
Residential Used Aquifer		2,500	2,500	66	0.32	0.2	0.19	0.26	0.19	91	6	37	42	1.9	0.055	260	1,700	0.19	170	210	100	1,100	2,000	130	4,200	40	2,100	830	1	150		
Non-Residential Used Aquifer		3,800	7,000	66	4.9	0.2	1.2	0.26	0.55	430	6	170	120	1.9	0.6	260	1,900	2.8	470	580	100	1,100	2,000	130	12,000	40	5,800	2,300	1	690		

All results expressed in micrograms per liter (µg/L)

All results reported to the most stringent reporting level, Method Detection Limit or Laboratory Reporting Limit

Ground Water Standards relate to Used Aquifers with Total Dissolved Solids ≤ 2,500

Bolded values meet or exceed the PADEP Residential Statewide Health Standard

Bolded and shaded values meet or exceed the PADEP Residential and Non-Residential Statewide Health Standards

NS - No standard established by PADEP

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

B - Not detected substantially above the level reported in the laboratory or field blanks.

NA - Not analyzed

NR - Not Reported





**Table 5**  
**Summary of Ground Water Analytical Results**  
**Former Tank Car Corporation of America Site**  
**1725 Walnut Avenue**  
**Springfield Twp., Montgomery County, PA**  
**BL Project No. 17L5438**

Sample ID	Sample Date	Dissolved Metals																								
		Aluminum	Arsimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	
MW-1	11/18/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	8/31/2017	214	<6.0	<5.0	28.8	<1.0	772	<3.0	45,800	<5.0	<5.0	<5.0	688	<5.0	26,000	64.6	<0.2	<10.0	2,850	<8.0	<6.0	6,990	<10.0	<5.0	<10.0	
	4/12/2018	28.1 J	<3.4	<2.7	30.0	<0.24	763	<0.87	49,000	1.0 J	<0.93	<3.3	32.5 J	<1.8	27,100	14.0	<0.30	1.1 J	3,100	<4.8	<0.99	8,510	<1.0	<0.47	<1.0	
	10/29/2020	NA	<6.0	<3.0	NA	NA	NA	NA	NA	<1.0	NA	<1.0	NA	<3.0	NA	NA	<0.20	12.5	NA	NA	NA	NA	NA	NA	35.7	
	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
MW-2	11/18/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	9/20/2017	<50.0	<6.0	<5.0	83.0	<1.0	1,670	<3.0	61,700	<5.0	<5.0	41.2	<70.0	<5.0	47,600	40.0	<0.2	<10.0	4,440	<8.0	<6.0	36,900	<10.0	<5.0	214	
	4/12/2018	<14.1	<3.4	<2.7	43.8	<0.24	1,150	<0.87	48,400	<0.86	<0.93	15.7	13.0 J	<1.8	40,800	1.8 J	<0.30	4.7 J	3,650	<4.8	<0.99	21,400	<2.2	<0.47	116	
	10/29/2020	NA	<6.0	<3.0	NA	NA	NA	NA	NA	<1.0	NA	69.6	NA	<3.0	NA	NA	<0.20	168	NA	NA	NA	NA	NA	NA	168	
	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	41.7	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	201	
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	24.8	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	109	
	10/27/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	41.7	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	125	
	1/13/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	24.3	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	85.4	
MW-3	11/18/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	8/31/2017	<50.0	<6.0	<5.0	13.6	<1.0	158	<3.0	105,000	11.5	<5.0	<5.0	<70.0	<5.0	40,200	<5.0	<0.2	<10.0	4,550	<8.0	<6.0	57,400	<10.0	<5.0	<10.0	
	4/12/2018	28.5 J	<3.4	<2.7	15.2	<0.24	317	<0.87	174,000	20.6	<0.93	<3.3	66.8	<1.8	55,200	7.8	<0.30	<1.0	4,350	9.1	<0.99	90,000	<2.2	0.71 J	3.2 J	
	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	NA	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	NA	NA	<20	
	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	19.4	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
MW-4	6/11/2009	1380 J	<60	2.9 B	73.0 J	1.3 J	NA	<5.0	57,800	2.7 J	5.7 J	<25	10,500	<10	36,100	<b>1,750</b>	<0.2	11.1 J	12,300	<35	<10	8,750 J	<25	<50	45.3 B	
	8/31/2017	<50.0	<6.0	<5.0	42	<1.0	856	<3.0	82,200	<5.0	<5.0	<5.0	<70.0	<5.0	24,400	<b>1,200</b>	<0.2	<10.0	5,700	<8.0	<6.0	8,710	<10	<5.0	<10.0	
	4/12/2018	3170	<3.4	<2.7	71.5	1.5	857	<0.87	85,500	9.5	6.6	7.8	11,500	3.5 J	28,300	<b>1,710</b>	<0.030	12.7	6,840	<4.8	<0.99	9,920	<2.2	<b>5.9</b>	58.3	
	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	NA	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	<20	
	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
	10/26/2021	NA	<6.0	<3.0	NA	2.7	NA	<3.0	NA	<10	NA	<10	NA	<b>9.1</b>	NA	NA	<0.20	24.3	NA	<10	<10	<10	NA	<10	NA	84.9
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20	
MW-5	6/11/2009	650 J	<60	3.5 B	64.4 J	<5.0	NA	<5.0	11,300	<10.0	6.8 J	<25	6,860	<10	3,980	<b>7,800</b>	<0.2	9.2 J	13,500	<35	<10	93,300 J	<25	<50	38.8 B	
	8/31/2017	<50.0	<6.0	<5.0	56.2	<1.0	877	<3.0	15,500	10.9	6.2	<5.0	<70.0	<5.0	9,670	<b>16,400</b>	<0.2	10.4	10,400	<8.0	<6.0	79,900	<10	<b>21.7</b>	17.4	
	4/12/2018	4,740	<3.4	3.3 J	128	2.6	939	<0.87	11,700	2.2 J	12.7	9.7	23,000	<b>7.5</b>	13,900	<b>15,000</b>	<0.030	24.3	14,600	<4.8	<0.99	87,500	<2.2	<b>8.2</b>	68.2	
	10/30/2020	NA	<6.0	<3.0	NA	<1.0	NA	NA	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	<20	
	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	15.2	NA	<10	<10	NA	<10	NA	<20	
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	14	NA	<10	<10	NA	<10	NA	<20	
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	12.2	NA	<10	<10	NA	<10	NA	<20	
	1/13/2022	NA	<6.0	8	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	13.1	NA	<20	<10	NA	<20	NA	<20	
Residential Used Aquifer	NS	6	10	2,000	4	6,000	5	NS	100	10	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	2.4	2,000		
Non-Residential Used Aquifer	NS	6	10	2,000	4	6,000	5	NS	100	29	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	6.8	2,000		

All results expressed in micrograms per liter (µg/L).  
 Ground Water Standards relate to Used Aquifers with Total Dissolved Solids ≤ 2,500  
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NS - No standard established by PADEP  
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**Table 5**  
**Summary of Ground Water Analytical Results**  
**Former Tank Car Corporation of America Site**  
**1725 Walnut Avenue**  
**Springfield Twp., Montgomery County, PA**  
**BL Project No. 17L5438**

Sample ID	Sample Date	Dissolved Metals																								
		Aluminum	Arsenite	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	
MW-6	6/12/2009	32.9 B	<8.0	4.6 J	41.4 J	<5.0	NA	<5.0	75,800	2.9 J	<5.0	<25	278 J	<10	30,900	135	<0.2	<40	4,580	<35	<10	78,600	<25	<50	10.9 B	
	8/31/2017	<50.0	<8.0	<5.0	39.3	<1.0	5,590	<3.0	87,800	<5.0	<5.0	<5.0	80.8	<5.0	24,400	23.3	<0.2	<10.0	2,730	<8.0	<8.0	175,000	<10.0	<5.0	<10.0	
	4/12/2018	84.9	<3.4	<2.7	39.0	<0.24	<b>6,440</b>	<0.87	65,400	<0.86	<0.93	<3.3	486	<1.8	21,900	46.5	<0.030	1.5 J	2,680	<4.8	<0.99	163,000	<2.2	0.82 J	3.4 J	
	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	NA	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	<20	
	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	NA	<10	NA	<10	NA	<20
	7/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	12.7	<10	NA	<10	NA	NA	<20
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	NA	<10	NA	<10	NA	<20
1/13/2022	NA	<6.0	3.5	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	12.5	NA	<10	<10	NA	<10	NA	NA	<20	
MW-7	10/30/2020	NA	<6.0	<3.0	NA	<1.0	NA	NA	NA	<10	NA	NA	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	NA	<20
	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	NA	<10	NA	<10	NA	<20
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
MW-8	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	16.7	NA	NA	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	NA	<20
	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	14.6	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	NA	<10	NA	<10	NA	<20
	7/14/2021	NA	<6.0	<3.0	NA	2.3	NA	<3.0	NA	15.2	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	11.6	<10	NA	<10	NA	NA	<20
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	10.6	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	NA	<10	NA	<10	NA	<20
	1/13/2022	NA			NA	<1.0	NA		NA	<10	NA	<10	NA	<3.0	NA	NA		<10	NA	<10		NA	<10	NA	<20	
MW-9	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	NA	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	NA	<20
	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	7/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	10/27/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
MW-10	10/29/2020	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	NA	NA	<3.0	NA	NA	<0.20	<10	NA	NA	NA	NA	NA	NA	NA	<20
	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	10/27/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
	1/13/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	NA	<20
Residential Used Aquifer	NS	6	10	2,000	4	6,000	5	NS	100	10	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	2.4	2,000		
Non-Residential Used Aquifer	NS	6	10	2,000	4	6,000	5	NS	100	29	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	6.8	2,000		

All results expressed in micrograms per liter (µg/L).

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**Summary of Ground Water Analytical Results**  
**Former Tank Car Corporation of America Site**  
**1725 Walnut Avenue**  
**Springfield Twp., Montgomery County, PA**  
**BL Project No. 17L5438**

Sample ID	Sample Date	Dissolved Metals																							
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
MW-11	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	7/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	21	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	21.3	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
MW-11D	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	10/27/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	26.1	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
MW-12D	4/12/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	7/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	10/26/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
MW-13D	4/13/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	7/14/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	10/27/2021	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
	1/12/2022	NA	<6.0	<3.0	NA	<1.0	NA	<3.0	NA	<10	NA	<10	NA	<3.0	NA	NA	<0.20	<10	NA	<10	<10	NA	<10	NA	<20
Residential Used Aquifer		NS	6	10	2,000	4	6,000	5	NS	100	10	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	2.4	2,000
Non-Residential Used Aquifer		NS	6	10	2,000	4	6,000	5	NS	100	29	1,000	NS	5	NS	300	2	100	NS	50	100	NS	2	6.8	2,000

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# **APPENDIX A**

## **Act 2 Administrative Documents**

For DEP Use Only

PF # \_\_\_\_\_

Rem ID # \_\_\_\_\_

## NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires four general information items to be included in the NIR: the general location, listing of contaminants, intended use of property, and proposed remediation measures. In addition, indicate the standard(s) to be obtained (if known) and attach a scaled site map (if available).

Property Name Former Tank Car Corporation of America Site

Former Name(s) / AKA Former TCCA Site

Address / Location 1725 Walnut Avenue

City Oreland Zip Code 19075

Municipality(s) Springfield Township County(ies) Montgomery

Latitude 40 ° (deg). 7 ' (min) 12 " (sec) Longitude 75 ° (deg). 11 ' (min) 30.84 " (sec)

Horizontal Collection Method Google Earth

Horizontal Reference Datum WGS84 Reference Point USEPA Site Location Coordinates

Wish to participate in the DEP/EPA MOA. Contact the Land Recycling Program Manager at [landrecycling@pa.gov](mailto:landrecycling@pa.gov) for details.

EPA ID#, if known PAN00306553

DEP ID#(s), if known eFACTs PF# 604445, Env. Cleanup ID 252520  
(i.e., eFACTS site ID#, storage tank facility ID#, water quality permit #, watershed permit, air quality permit #, etc.)

Date Release Occurred (if known) \_\_\_\_\_

Provide a brief description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any know primary contaminants to be addressed, and the intended future use of the property.

The Tank Car Corporation of America (TCCA) Site is the former location of a railroad tank car rehabilitation facility that operated for most of the 20th century. The facility fabricated, cleaned and painted tank cars on the premises. Tank car rehabilitation activities ceased by the early to mid 2000s. Currently the Site is used by several businesses unrelated to TCCA for equipment storage and vehicular parking. The Site is located in a mixed use area surrounded by residences, a golf course, commercial operations, and an active SEPTA rail line. Between 2007 and 2011, several tank cars containing hazardous substances and wastes were removed from the Site by the USEPA under a Response Action Plan. Several underground storage tanks, which were tank cars, containing hazardous substances, and soils contaminated by hazardous substances (a black tarry waste primarily including benzene, naphthalene, and polycyclic aromatic hydrocarbons (PAHs)) were removed from the Site. In addition, the Site has been covered with a large amount of sandblasting grit contaminated by inorganic elements (e.g., lead) and organic contamination (e.g., PAHs), and this material was placed within the remedial excavations and capped with clay and 2RC stone. Ground water characterization activities identified relatively low levels of chlorinated volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) beneath the Site at concentrations above USEPA Maximum Contaminant Levels (MCLs) and/or Pennsylvania's Act 2 Statewide Health Standards, with decreased concentrations toward the downgradient Site boundary. The USEPA determined, during its investigations at the Site, that the surrounding area is served by public water. Therefore, the actions taken to date have focused on mitigating Direct Contact and Ingestion-related exposure to the on-Site impacts, while also providing protective measures to area residents through assessment of surface soil conditions in the area and cleaning surrounding homes affected by wind-blown

sandblasting residuals or sediment runoff. Additional assessment of other areas of concern, including a suspected heating oil underground storage tank (UST) and former Paint Shop building, are being evaluated and will be remediated as necessary to facilitate the Remediator's intended future use of the Site as a ball park and open recreational space.

Provide a general description of proposed remediation measures.

The Site includes an engineering control in the form of the protective cap over sandblasting residuals that previously covered a large portion of the Site. The cap was established during the USEPA's remedial activities and is intended to remain at the Site, undisturbed. Given that the area is served by public water, ground water at the Site will likely be remediated to the Site Specific Standard using pathway elimination measures to ensure that exposure pathways are incomplete in the future. Following additional assessment activities, other areas of concern will likely be remediated to the Site Specific Standard, the Statewide Health Standard, or a combination thereof.



Remediation Standard(s) planned (if known at this time):

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Unknown at this time                                       | <input type="checkbox"/> Soil            | <input type="checkbox"/> Groundwater            |
| <input type="checkbox"/> Background Contaminants:                                   | <input type="checkbox"/> Soil            | <input type="checkbox"/> Groundwater            |
| <input type="checkbox"/> Statewide Health - Residential Contaminants:               | <input type="checkbox"/> Soil            | <input type="checkbox"/> Groundwater            |
| <input type="checkbox"/> Statewide Health – Non-Residential Contaminants:           | <input type="checkbox"/> Soil            | <input type="checkbox"/> Groundwater            |
| <input checked="" type="checkbox"/> Site Specific Contaminants: VOCs, SVOCs, Metals | <input checked="" type="checkbox"/> Soil | <input checked="" type="checkbox"/> Groundwater |
| <input type="checkbox"/> Special Industrial Area* Contaminants:                     | <input type="checkbox"/> Soil            | <input type="checkbox"/> Groundwater            |

\*NOTE: Specific standard or Special Industrial Area require a 30-day municipal comment period

Remediator / Property Owner / Consultant. Complete the form below for each recipient obtaining a release of liability upon approval of the final report. Attach additional sheets as necessary.

<b>Remediator</b>		
Contact Person/Title	<u>Mr. Donald E. Berger, Jr., Township Manager</u>	eFACTS Client ID* _____
Relationship to Site	<u>Owner/Remediator</u>	Client Type* <u>Municipality</u>
(e.g. owner, remediator, participant in cleanup, consultant, etc.)		
Phone Number	<u>(215) 836-7600</u>	Email Address <u>dberger@springfield-township.org</u>
Company Name	<u>Springfield Township</u>	EIN or Federal ID # _____
Address (street, city, state, zip) <u>1510 Paper Mill Road, Wyndmoor, PA 19038-7032</u>		

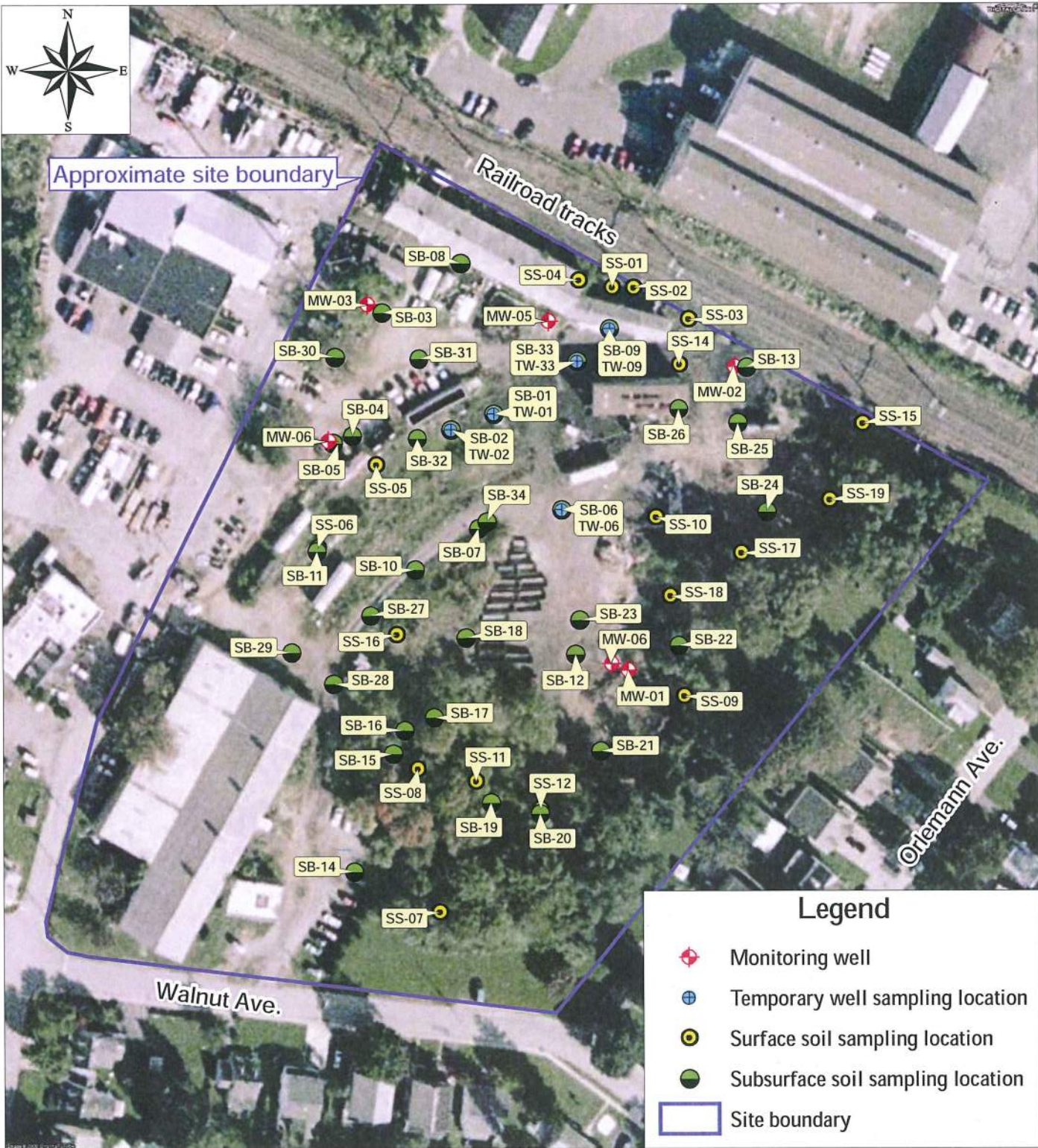
<b>Property Owner</b>		
Contact Person/Title	<u>Mr. Donald E. Berger, Jr., Township Manager</u>	eFACTS Client ID* _____
Relationship to Site	<u>Owner/Remediator</u>	Client Type* <u>Municipality</u>
(e.g. owner, remediator, participant in cleanup, consultant, etc.)		
Phone Number	<u>(215) 836-7600</u>	Email Address <u>dberger@springfield-township.org</u>
Company Name	<u>Springfield Township</u>	EIN or Federal ID # _____
Address (street, city, state, zip) <u>1510 Paper Mill Road, Wyndmoor, PA 19038-7032</u>		

<b>Consultant</b>		
Contact Person/Title	<u>Mr. Bradley S. Wolf</u>	eFACTS Client ID* _____
Relationship to Site	<u>Consultant</u>	Client Type* _____
(e.g. owner, remediator, participant in cleanup, consultant, etc.)		
Phone Number	<u>(610) 994-4619</u>	Email Address <u>bwolf@blcompanies.com</u>
Company Name	<u>BL Companies</u>	EIN or Federal ID # _____
Address (street, city, state, zip) <u>1100 First Avenue, Suite 104, King of Prussia, PA 19406</u>		

\*Include eFACTS Client ID (if known) – “Client Types” below:

- |                          |                               |                     |
|--------------------------|-------------------------------|---------------------|
| Association/Organization | Limited Liability company     | Partnership-General |
| Authority                | Limited Liability Partnership | Partnership-Limited |
| County                   | Municipality                  | School District     |
| Estate/Trust             | Non-Pennsylvania Government   | Sole Proprietorship |
| Federal Agency           | Other (Non-Government)        | State Agency        |
| Individual               | Pennsylvania Corporation      |                     |

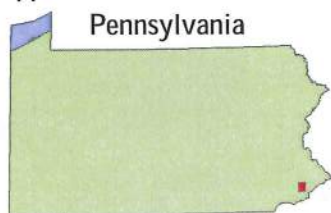
<b>Preparer of Notice of Intent to Remediate</b>		
Name	<u>Mr. Randy Shick</u>	Title <u>Senior Project Scientist</u>
Phone Number	<u>(717) 943-1693</u>	Email Address <u>rshick@blcompanies.com</u>
Company Name	<u>BL Companies</u>	eFACTS Client ID _____
Address (street, city, state, zip) <u>4242 Carlisle Pike, Suite 260, Camp Hill, PA 17011</u>		



Source: Modified from DigitalGlobe aerial photography, October 2006.



Approximate Site Location = ■



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

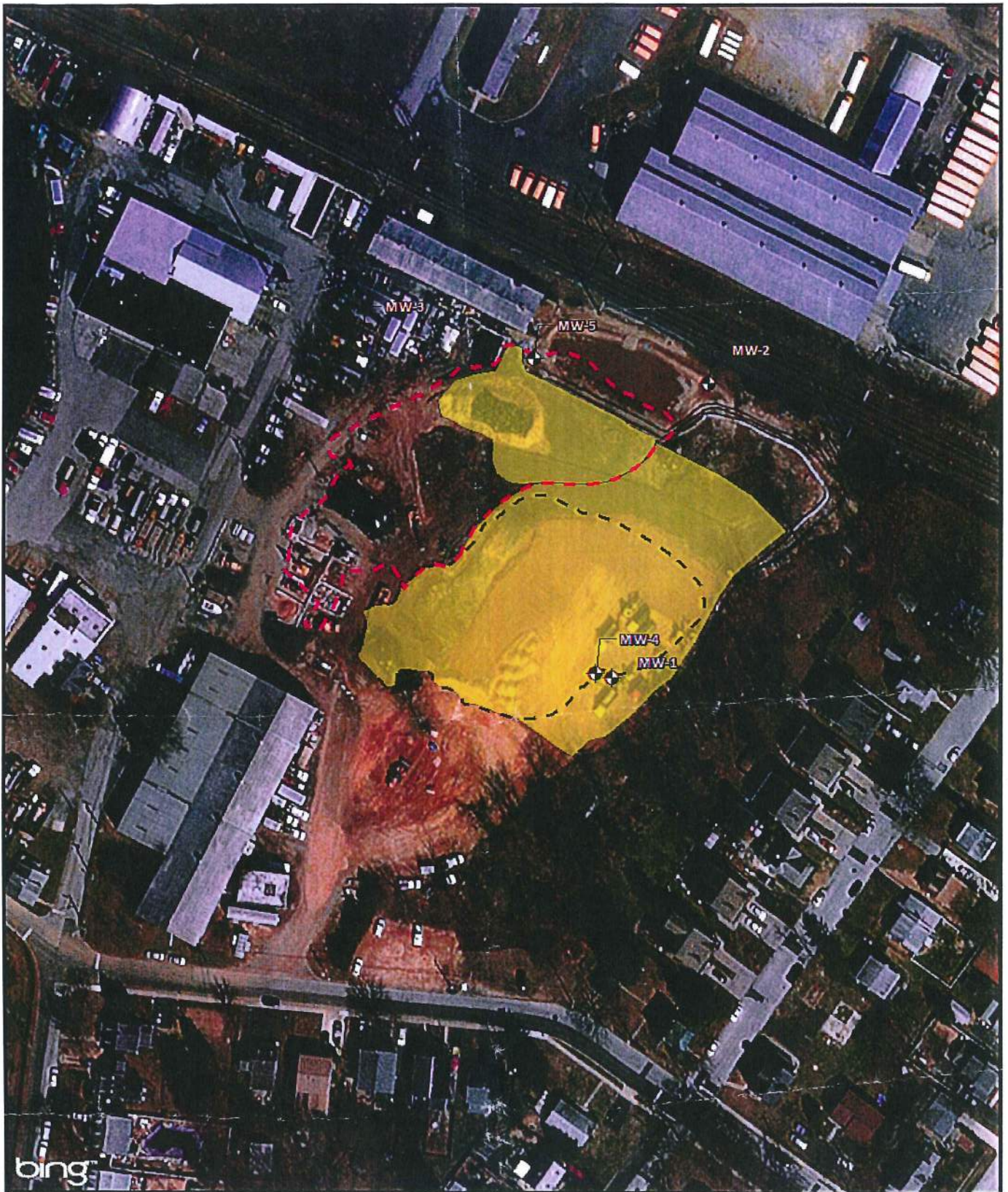
**Figure 3**  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.







**Legend**

-  Monitoring Well
-  Excavated Area Small Lagoon Waste
-  Excavated Area Large Lagoon Waste
-  Buried Sand

Data Sources:  
 Basemap - ESRI Bing Hybrid Map Service, 2012  
 Data - Field GPS collection

Coordinate System:  
 PA State Plane, NAD83, feet



Tank Car Corporation of America  
 Oreland, Pennsylvania

Waste Excavation Areas  
 Backfilled Sand Area and  
 Monitoring Well Locations  
 June 2013

TDD#: WS01-10-07-001  
 Contract: EP-S3-10-05  
 DCN#: W001.1H.00151





**Proof of Publication in The Philadelphia Daily News  
Under Act. No 587, Approved May 16, 1929**

**STATE OF PENNSYLVANIA  
COUNTY OF PHILADELPHIA**

Helene Sweeney being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

April 12, 2017

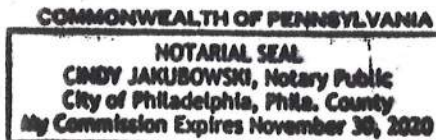
Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.



Sworn to and subscribed before me this 12th day of  
April 2017.

  
Notary Public

My Commission Expires:



**Copy of Notice of Publication**

**NOTICE**

Pursuant to the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. 4, No. 1995-2, notice is hereby given that Springfield Township is submitting to the Pennsylvania Department of Environmental Protection a Notice of Intent to Remediate a site located at 1725 Walnut Avenue, in Springfield Township, Montgomery County, Pennsylvania. This NIR states that the site is currently vacant but was occupied by the Former Tank Car Corporation of America. The site has been found to be contaminated with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals, which have impacted soil and ground water. Certain pathway elimination measures are already in place, and additional measures will be instituted to demonstrate attainment of Act 2 standards. The future use of the property is currently planned to include open, public recreational space and a ball field. Springfield Township plans to remediate the Site to the Act 2 Site Specific Standard. The Act provides for a 30-day public comment period for Site Specific Standard remediations. The 30-day comment period is initiated with the publication of this notice. Until May 12, 2017, requests may be submitted to Springfield Township to be involved in the development of the remediation plans and reuse plans for the site. During the 30-day comment period, copies of requests to Springfield Township to develop and implement a public involvement plan and of any comments should also be sent to the Department of Environmental Protection, Southeast Regional Office, 2 East Main Street, Norristown, PA 19401.



An Employee-Owned Company

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

April 10, 2017

Mr. Donald E. Berger, Jr.  
Township Manager  
Springfield Township  
1510 Paper Mill Road  
Wyndmoor, PA 19038-7032

RE: Notice of Intent to Remediate  
Former Tank Car Corp. of America Site  
1725 Walnut Avenue  
Oreland, PA 19075  
**BL Project No. 17L5438**

Dear Mr. Berger:

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) be provided to the municipality in which the site is located. Act 2 also provides that when a site is a Special Industrial Area or is being remediated to a Site Specific Standard, the municipality is afforded a 30-day comment period. In accordance with the provisions of the Act, we are formally notifying you of our intent to remediate the subject site. A copy of the NIR which is being sent to the Pennsylvania Department of Environmental Protection (DEP), is enclosed. This notice will be published in the Pennsylvania Bulletin, and a summary of the notice will appear in the Philadelphia Daily News newspaper.

Publication of this notice in a local newspaper initiates the 30-day public comment period.

Sincerely,

**BL Companies**

Bradley S. Wolf  
Director, Environmental Site Assessment

Enclosure

cc: Aaron S. Mapes, Post & Schell, P.C.

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**Mr. DONALD F. BERGER**  
**Springfield TOWNSHIP**  
**1510 PAPER MILL Rd.**  
**WYNDMOOR, PA 19038**



9590 9401 0039 5071 2582 07

2. Article Number (Transfer from service label)

7015 0640 0008 0070 5429

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *MTKass*  Agent  
 Addressee

B. Received by (Printed Name)

*MTKASS*

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

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12 APR '17

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 USPS  
 Permit No. G-10

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**BL Companies, Inc.**  
 4242 Carlisle Pike, Suite 260  
 Camp Hill, PA 17011

*1715438*

USPS TRACKING#



9590 9401 0039 5071 2582 07



# The Philadelphia Inquirer

801 MARKET STREET, SUITE 300, PHILADELPHIA, PA 19107

## Affidavit of Publication

On Behalf of:

BL COMPANIES  
2601 MARKET ST  
SUITE 350  
HARRISBURG, PA 17110

STATE OF PENNSYLVANIA COUNTY OF PHILADELPHIA:

Before the undersigned authority personally appeared the undersigned who, on oath represented a and say: that I am an employee of The Philadelphia Inquirer, LLC, and am authorized to make this affidavit of publication, and being duly sworn, I depose and say:

1. The Philadelphia Inquirer, LLC is the publisher of the Philadelphia Daily News, with its headquarters at 801 Market Street, Suite 300, Philadelphia, Pennsylvania 19107.
2. The Philadelphia Daily News is an edition of The Philadelphia Inquirer. The Philadelphia Daily News is continuously published and distributed Sunday-Friday in the City of Philadelphia, count and state aforesaid.
3. The printed notice or publication attached hereto set forth on attached hereto was published in all regular print editions of the Philadelphia Daily News on

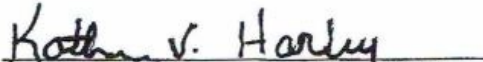
### Legal Notices

as published in Daily News Legals in the issue(s) of:

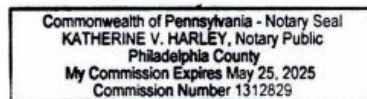
3/30/2022

4. Under oath, I state that the following is true and correct, and that neither I nor The Philadelphia Inquirer, LLC have any interest in the subject matter of the aforesaid notice or advertisement.



  
Notary Public

My Commission Expires:



Ad No: 100910

Customer No: 114156

## COPY OF ADVERTISEMENT

### NOTICE

Notice is hereby given that Springfield Township of Montgomery County is submitting a Remedial Investigation Report and Cleanup Plan to the Pennsylvania Department of Environmental Protection, Southeast Regional Office, for a site located at the 1725 Walnut Avenue in Springfield Township, Montgomery County, Pennsylvania. Springfield Township has indicated that the planned remediation measures will attain compliance with the site-specific cleanup standard established under the Land Recycling and Environmental Remediation Standards Act.

This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.



An Employee-Owned Company

**VIA EMAIL –CONFIRMATION OF RECEIPT REQUESTED**

March 28, 2022

Mr. Michael Taylor, Township Manager  
Springfield Township  
1510 Paper Mill Road  
Wyndmoor, PA 19038-7032

RE: Notice of Report Submittal  
Former Tank Car Corporation of America Site  
1725 Walnut Avenue  
Oreland, PA 19075  
**BL Project No. 17L5438**

Dear Mr. Taylor:

Notice is hereby given that Springfield Township of Montgomery County is submitting a Remedial Investigation Report and Cleanup Plan to the Department of Environmental Protection for the site known as the Former Tank Car Corporation of America site, located at 1725 Walnut Avenue in Springfield Township, Montgomery County, Pennsylvania. The report indicates that the remediation planned will attain compliance with the Act 2 site-specific cleanup standard.

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Sincerely,

**BL Companies**

Randy Shick  
Senior Environmental Scientist



## Shick, Randy

---

**From:** Michael Taylor <mtaylor@springfieldmontco.org>  
**Sent:** Monday, March 28, 2022 11:31 AM  
**To:** Shick, Randy  
**Subject:** RE: Notice of Act 2 Report Submittal

Good morning Mr. Shick,

Please accept this e-mail as acknowledgement of receipt of the Act 2 Report Submittal for the property located at 1725 Walnut Avenue, Oreland PA 19075.

Mike

*Michael Taylor  
Township Manager  
Springfield Township  
1510 Paper Mill Road  
Wyndmoor, PA 19038  
215-836-7600  
215-836-7180 (Fax)  
MTaylor@springfieldmontco.org*

---

**From:** Shick, Randy [mailto:rshick@blcompanies.com]  
**Sent:** Monday, March 28, 2022 10:54 AM  
**To:** Michael Taylor <mtaylor@springfieldmontco.org>  
**Subject:** Notice of Act 2 Report Submittal

Mr. Taylor,

Please see the attached notice and kindly reply to this email to acknowledge that you have received it. Typically, this would be handled through certified mail, but during the pandemic, the DEP has allowed email confirmation.

Thank you,  
Randy

**Randy Shick**  
Senior Environmental Scientist  
BL Companies | *Employee owned. Client driven.*



2601 Market Place, Suite 350, Harrisburg, PA 17110  
mobile: 717.979.1444  
[www.blcompanies.com](http://www.blcompanies.com)

## **APPENDIX B**

### Clean Fill Due Diligence Report



## **CLEAN FILL DUE DILLIGENCE**

### **SPRINGFIELD TOWNSHIP HIGH SCHOOL ATHLETIC FIELD**

**1801 PAPER MILL ROAD  
SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY,  
PENNSYLVANIA**

**Prepared For:            Springfield School System  
                                 1801 Paper Mill Road  
                                 Oreland, PA 19075**

**EEl Project No. 29573.01**

**June 9, 2017**

*Corporate Headquarters*  
**115 W Germantown Pike  
East Norriton, PA 19401  
(610)277-0880 FAX 277-0878**

*Southern New Jersey*  
403 Commerce Lane  
West Berlin, NJ 08091  
(856)768-1001 FAX 768-1144

*Central Pennsylvania*  
5010 Ritter Road, Suite 116  
Mechanicsburg, PA 17055  
(717)697-5701 FAX 697-5702

*Lehigh Valley*  
149 Main Street  
Emmaus, PA 18049  
(610)967-4540 FAX 967-4488

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### APPENDICES

SUMMARY OF MONTGOMERY COUNTY PROPERTY LISTING

ENVIRONMENTAL DATABASE REPORT

FORM FP-001 CERTIFICATE OF CLEAN FILL



# 1 General Information

Earth Engineering, Inc. (EEI) was contracted by the Springfield School System to perform Clean Fill Due Dilligence for the athletic fields of the subject property located at 1801 Paper Mill Road, Glenside, Montgomery County, Pennsylvania. The subject property is Montgomery County Parcel 52-00-13198-00-7.

## 2 Executive Summary

### 2.1 *Subject Property Description*

The subject property is approximately a 5.51 acre, rectangular shaped parcel of land. The property is presently an athletic field with spectator stands, a single story structure, running track, paved areas, and green space.

### 2.2 *Data Gaps*

EEI did not identify historical references for a five year maximum span; however the site conditions observed in the available historical references indicate that additional historical references would not provide significant information for the subject property.

### 2.3 *Environmental Report Summary*

Earth Engineering, Inc. (EEI) was contracted to perform Clean Fill Due Dilligence for the athletic field of the subject property at 1801 Paper Mill Road, Glenside, Montgomery County, Pennsylvania, *the property*. The assessment reveals that the subject property progressed from undeveloped land to an athletic field for the adjacent Springfield Township High School from 1958 to the present. The Montgomery County tax records identify the current structure built in 1954. The surrounding properties are residential or commercial type facilities.

Springfield Township High School, the parcel of which the subject property is a portion of, was listed in the RCRA database as a small-quantity generator of ignitable, corrosive, and reactive waste. No violations were found. The school property is listed in the ARCHIVE UST database with two (2) 10,000-gallon heating oil USTs being closed without permit on the site. No violations were directly linked to the ARCHIVE USTs. However, the site is listed in the UNREG LTANKS database for a leaking Fuel Oil No. 2 UST on the site. No specific information related to the extent of the impact was provided; the cleanup was handled by authorities other than Act 32 and was closed as of January 24<sup>th</sup>, 1995. Based

on the distance of the site relative to the athletic field, adverse impacts to the subject property are unlikely. Two (2) MANIFEST entries are listed for the Springfield Township School in the EDR database.

EEl has reviewed the database information and has not identified any nearby facilities which are likely to have an adverse impact on the subject property.

We have performed a Clean Fill Due Dilligence investigation in conformance with the scope and limitations of the PADEP Management of Fill Policy of the property located 1801 Paper Mill Road, Springfield Township, Montgomery County, PA (Montgomery County Parcel 52-00-13198-00-7). This assessment has revealed no evidence of recognized environmental conditions in connection with the source area and the soils meet the definition of clean fill according to the Management of Fill Policy guidance.

### **3 Introduction**

#### **3.1 Purpose**

Earth Engineering, Incorporated (EEI), was contracted by the Springfield School System to perform a Clean Fill Due Diligence investigation on the subject property for the purpose of identifying potential environmental conditions on the subject property and assessing the risk any identified conditions represent. This Clean Fill Due Diligence was conducted in accordance with the PADEP Management of Fill Policy.

#### **3.2 Scope of Work**

The Scope of Work for this project included a review of the federal, state, and local databases for any information which may represent an environmental liability on the subject property, obtaining and reviewing historical documents including, historical aerial photographs, historical maps, property references, and lien records. The information collected during the research phase of the project has been analyzed and documented. Conclusions and opinions of an environmental professional are also presented in this report.

#### **3.3 Significant Assumptions**

There were no significant assumptions made during this investigation.

### **3.4 Limitations and Exceptions**

The data and conclusions contained in this report are based upon available information obtained for the site and observations made in the field. Discrepancies or inaccuracies regarding any data provided are not the responsibility of EEI. EEI further assumes no responsibility or liability for environmentally hazardous materials, which are the responsibility of the site owners, adjacent property owners, or other persons or entities.

## **4 Site Description**

### **4.1 Location and Legal Description**

The subject property is a single section of a larger tax parcel, approximately 5.51 acres in size with a rectangular shape. Overall, the Springfield Township High School Parcel is approximately 43.46 acres. The subject property outlines are shown on the following tax map.



**Figure 1 Site Location Shown on EDR Tax Map**

The property is zoned E – Exempt – BD of ED, Secondary.

The coordinates of the property are Latitude (North): 40° 6' 1.80", Longitude (West): 75° 11' 48.47".



## **4.2 Activity and Use Limitations**

No activity and Use Limitations were identified for the property.

## **4.3 Site and Vicinity Description**

The subject property lies within an area of residential and some commercial use properties. All adjacent properties are residential and commercial. Commercial properties are located to the north and east along Paper Mill Road. Residential properties lie to the east, west, and south of the subject property.

## **4.4 Current Use of Property**

The subject property is currently a utilized as an athletic field.

## **4.5 Description of Structures and Other Improvements**

The subject property is currently developed with an athletic field, running track, spectator stands, and a single story field house. Access to the property is via both Fraser Road to the southwest, and Springfield Way to the northeast. The structure is served by public water, sewer, electricity and gas.

## **4.6 Adjoining Property Information**

<b>Direction</b>	<b>Land Use</b>
North	Springfield Township High School, Route 309.
South	Fraser Road, Paper Mill Road, Springfield Township Municipal Building.
East	Paper Mill Road, Springfield Ambulance Association, additional sports fields.
West	Residential properties.

# **5 User Provided Information**

## **5.1 Specialized Knowledge**

No specialized knowledge is reported.

## **5.2 Valuation Reduction for Environmental Issues**

There are no reductions in the value of the property due to known environmental issues.

### ***5.3 Owner, Property Manager, and Occupant Information***

According to the Montgomery County Records, the parcel is owned by the Springfield School District as of June 16, 1983. No prior owners of the subject property were listed. The property is currently an athletic field for the Springfield Township High School.

## **6 Records Review**

### **6.1 Standard Environmental Records Sources**

Federal, state, and local databases were searched, and the findings were reviewed for evidence of potential impact to the subject property.

#### **6.1.1 Subject Property**

Springfield Township High School, the parcel on which the property is present, was identified on several databases in the EDR report. However, the listings have no direct impact on the athletic field discussed in this report due to the distance of the school building relative to the property. A summary of the listings follows below.

Springfield Township High School was listed in the RCRA database as a small-quantity generator of ignitable, corrosive, and reactive waste. No violations were found. The school property is listed in the ARCHIVE UST database with two (2) 10,000-gallon heating oil USTs being closed without permit on the site. No violations were directly linked to the ARCHIVE USTs. However, the site is listed in the UNREG LTANKS database for a leaking Fuel Oil No. 2 UST on the site. No specific information related to the extent of the impact was provided; the cleanup was handled by authorities other than Act 32 and was closed as of January 24<sup>th</sup>, 1995. Based on the distance of the site relative to the athletic field, adverse impacts to the subject property are unlikely. Two (2) MANIFEST entries are listed for the Springfield Township School in the EDR database.

### 6.1.2 Nearby Facilities

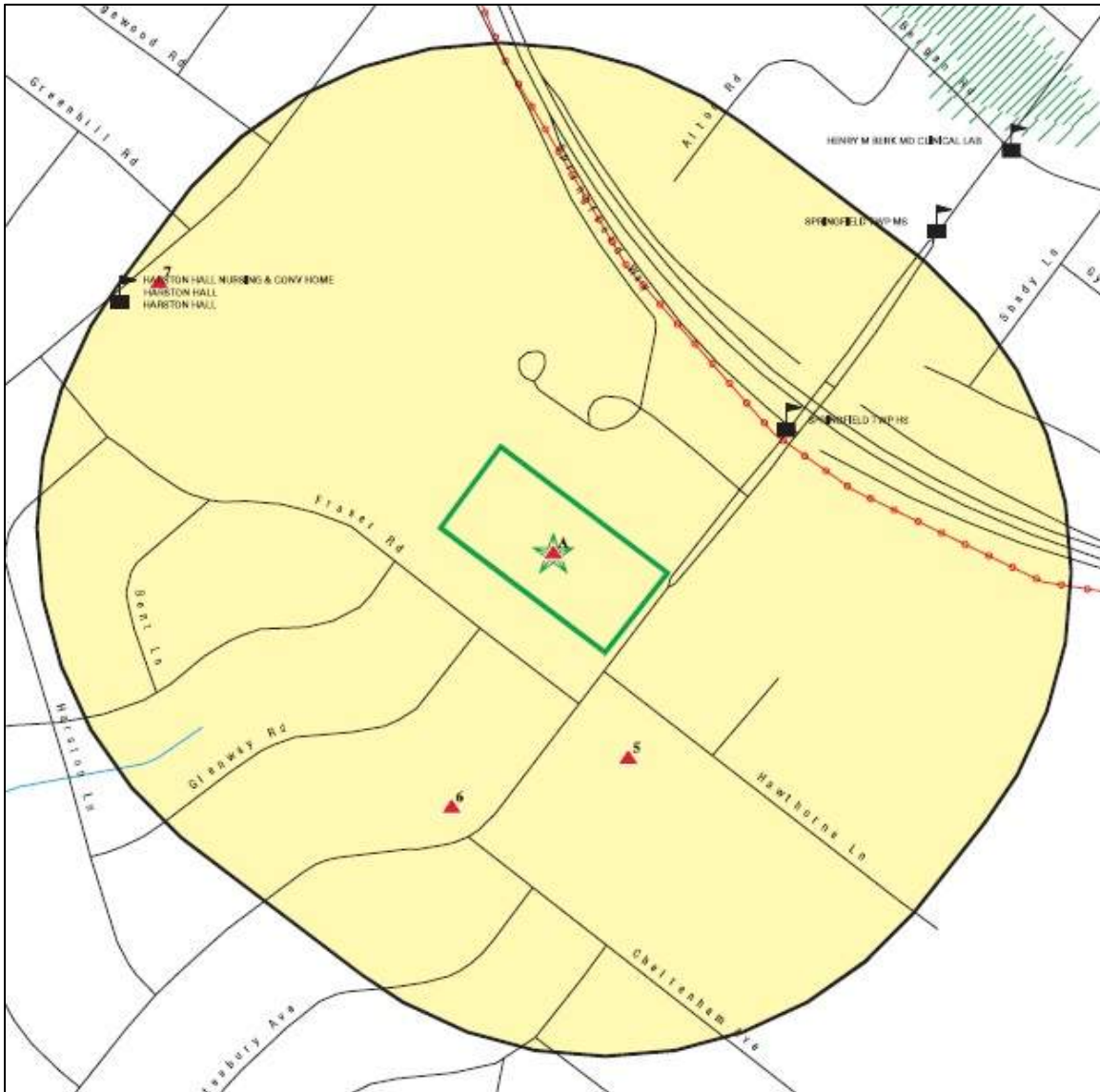


Figure 2 Map of Environmental Records Near Subject Property.

Ring is  $\frac{1}{4}$  radius.

EEl reviewed each of the records within the database search. The facilities identified within the ASTM search radii depicted on the map above were reviewed and the details of each are presented below.

SITE NAME	ADDRESS	DATABASES	DIST(mi)
SPRINGFIELD TWP	1510 PAPER MILL ROAD	Facility of a small quantity generator with no violations. The facility has a 10,000-gallon diesel fuel UST listed in the ARCHIVE UST database; the tank is documented as being removed. Site had a release from a diesel fuel UST which impacted soil; cleanup was considered completed on August 18, 2014. The site has an NPDES listing associated with an unnamed tributary of the Wissahickon Creek. The status was minor and the listing was closed on March 9, 2008.	0.066
KOSTYCK/ROBERTSON PROP	1501 PAPER MILL ROAD	Facility is documented as a VCP site with soil impact. The site is currently closed since cleanup was completed on November 21, 2000.	0.133

The EDR database also listed two (2) MANIFEST sites.

These records indicate that the nearby properties are unlikely to have an adverse impact on the subject property due to the status indicated in the databases and/or the intervening topography.

A copy of the Environmental Data Resources Report of the database information is included in the appendix of this report.

## 6.2 Additional Environmental Records Sources

EEL is actively completing a geotechnical investigation along the southern portion of the Springfield Township High School with soil borings advanced on April 19, 2017. While the borings were not advanced on the athletic fields that comprise the source area, the types of soils encountered will likely exhibit similar characteristics to the soils existing in the source area. Five (5) soil borings were advanced to 20 feet or refusal on the southern portion of the Springfield Township High School. Soils encountered included a layer of topsoil, one to two feet of sandy silt considered to be fill, natural soils consisting of sandy silt to silty sand of varying colors, and weathered rock at approximately 20 feet below surface grade. No contaminated soils, odors, or suspect waste was encountered during the geotechnical investigation.

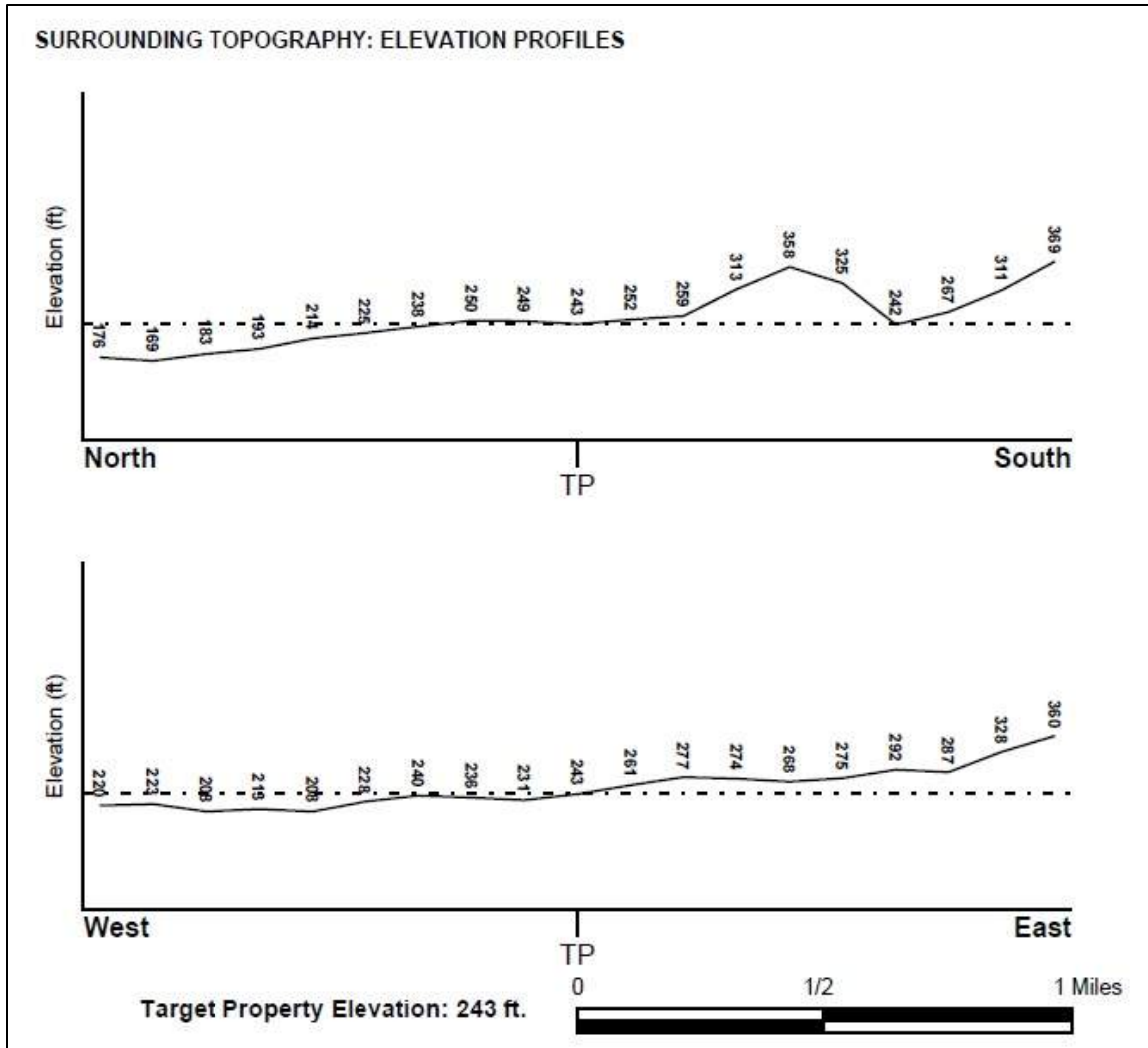
## 6.3 Physical Setting Sources

The physical setting of the subject property was determined using:

- Germantown, PA USGS 7.5' topographic quadrangle.
- <http://www.gis.dcnr.state.pa.us/geology/index.html>

According to the USGS Topographic Quadrangle, the topography of the subject property is at an approximate elevation of approximately 243 feet and slopes down generally to the northwest.





**Figure 3 Elevation Profiles through the Subject Property**

According to the PAGEode web application, the subject property is located on the Conestoga Formation (Geologic symbol OCc).

The Conestoga Formation consists of medium-gray, impure limestone with black, graphitic shale partings. It is conglomeratic at the base. In Chester County, it includes micaceous limestone, phyllite, and alternating dolomite and limestone. The total thickness is at least 300 feet (Geyer and Wilshusen, 1982).



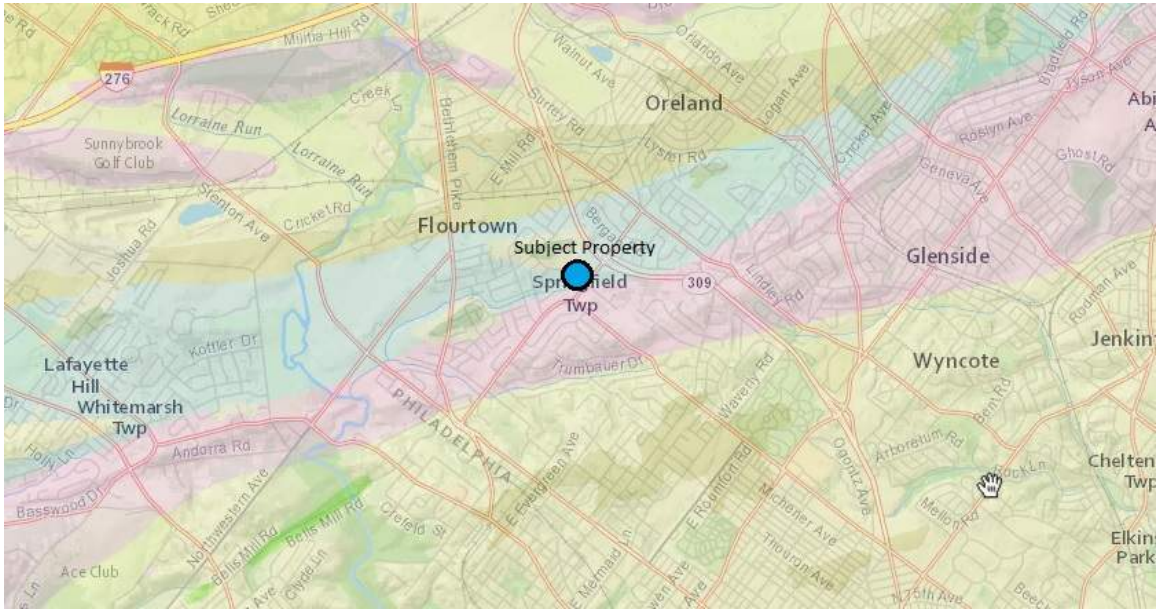


Figure 4 Geologic Map of Subject Property and Surrounding Area

#### 6.4 Historical Use of Property and Surrounding Properties

EEL searched for historical references including aerial photographs, Sanborn Fire Insurance Maps, and historical maps/records of the subject property.



Figure 5 1942 Aerial Photograph

There are no structures on subject property and limited development on surrounding parcels.





**Figure 6 1958 Aerial Photograph**

Subject Property has been improved with an athletic field. Springfield Township High School is located immediately north of the subject property; Springfield Township Middle School is visible northeast of the subject property across Route 309. Residential dwellings are visible south and west of the subject property.



**Figure 7 1967 Aerial Photograph**

Subject Property remains an athletic field. Construction activities for two additions to Springfield Township High School are visible. The adjacent property to the northeast has been improved with a baseball field. Commercial and residential development has continued to the east across Paper Mill Road. Route 309 has been expanded since the 1958 photograph was taken.



**Figure 8 1971 Aerial Photograph**

Subject property remains an athletic field. The additions to Springfield Township High School are shown to be completed.



**Figure 9 2010 Aerial Photograph**

Subject property remains an athletic field with the addition of a single story structure. Save for the athletic fields east of the subject property, no major changes to the surrounding area are visible from the 1971 photograph.

## **6.5 *Environmental Liens and Activity/Use Limitations***

None identified for the property.

## **7 Interviews**

EEl discussed the site conditions with Mr. Henry Guarriello during the initial stages of the project. Mr. Guarriello, who works for D'Huy Engineering involved with the construction of the new stadium facility, indicated that to his knowledge the source area has only been used for athletic fields as part of the school system for at least 50 years.

## 8 Signature

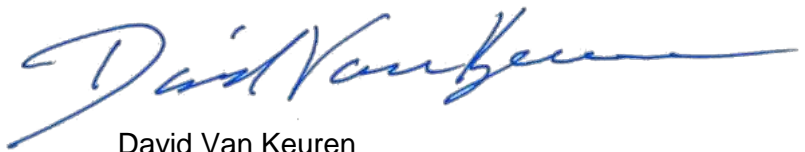
This report is intended to provide a professional service to the Springfield Township School District, and is intended to present a professional opinion regarding the subject property, located at 1801 Paper Mill Road, Springfield Township, Montgomery County, Pennsylvania, being identified as Montgomery County Parcel 52-00-13198-00-7.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set for in 40 CFR Part 312.

Respectfully submitted,  
**EARTH ENGINEERING, INCORPORATED**



Max W. Perlow  
Geologist



David Van Keuren  
GeoEnvironmental Project Manager

PARID: 520013198007  
 SPRINGFIELD SCHOOL DISTRICT

1801 PAPER MILL RD

### Parcel

---

TaxMapID	52040 009
Parid	52-00-13198-00-7
Land Use Code	9960
Land Use Description	E - EXEMPT - BD OF ED, SECONDARY
Property Location	1801 PAPER MILL RD
Lot #	
Lot Size	19.15 ACRES
Front Feet	974
Municipality	SPRINGFIELD
School District	SPRINGFIELD TWP
Utilities	ALL PUBLIC//

### Owner

---

Name(s)	SPRINGFIELD SCHOOL DISTRICT
Name(s)	
Mailing Address	1901 PAPER MILL RD
Care Of	
Mailing Address	
Mailing Address	ORELAND PA 19075

### Current Assessment

---

Appraised Value	Assessed Value	Restrict Code
8,167,910	8,167,910	Exempt

### Estimated Taxes

---

County	0
Montco Community College	0
Municipality	0
School District	0
Total	0
Tax Lien	<a href="#">Tax Claim Bureau Parcel Search</a>

### Last Sale

---

Sale Date	16-JUN-83
Sale Price	\$1
Tax Stamps	0
Deed Book and Page	-
Grantor	
Grantee	SPRINGFIELD SCHOOL DISTRICT
Date Recorded	



**1801 Papermill Road**

1801 Papermill Road

Glenside, PA 19038

Inquiry Number: 04949796.2r

May 30, 2017

# The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



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***Thank you for your business.***  
 Please contact EDR at 1-800-352-0050  
 with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

1801 PAPERMILL ROAD  
GLENSIDE, PA 19038

#### COORDINATES

Latitude (North): 40.1005020 - 40° 6' 1.80"  
Longitude (West): 75.1967980 - 75° 11' 48.47"  
Universal Transverse Mercator: Zone 18  
UTM X (Meters): 483225.6  
UTM Y (Meters): 4438720.5  
Elevation: 243 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5949514 GERMANTOWN, PA  
Version Date: 2013

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20150816  
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:  
 1801 PAPERMILL ROAD  
 GLENSIDE, PA 19038

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
<a href="#">A1</a>	SPRINGFIELD HIGH SCH	1801 E PAPERMILL RD	RCRA-SQG, PA UNREG LTANKS, FINDS, ECHO		TP
<a href="#">A2</a>	SCHOOL DISTRICT OF S	1801 PAPER MILL RD	MN MANIFEST		TP
<a href="#">A3</a>	CLEAN VENTURE CYCLE	1801 PAPERMILL ROAD	PA MANIFEST		TP
<a href="#">A4</a>	SPRINGFIELD HIGH SCH	1801 E PAPER MILL RD	PA ARCHIVE UST		TP
<a href="#">5</a>	SPRINGFIELD TWP	1510 PAPER MILL RD	RCRA-SQG, PA LUST, PA UST, PA ARCHIVE UST, FINDS,...	Higher	350, 0.066, SSE
<a href="#">6</a>	KOSTYCK/ROBERTSON PR	1501 PAPERMILL RD	PA VCP	Higher	704, 0.133, SSW
<a href="#">7</a>	HARSTON HALL NURSING	350 HAWS LN	PA ARCHIVE UST	Higher	1219, 0.231, NW

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
SPRINGFIELD HIGH SCH 1801 E PAPERMILL RD ERDENHEIM, PA 19038	RCRA-SQG EPA ID:: PAD982579682  PA UNREG LTANKS Closed: 1/24/1995  FINDS Registry ID:: 110001020467  ECHO	PAD982579682
SCHOOL DISTRICT OF S 1801 PAPER MILL RD ERDENHEIM, PA 19038	MN MANIFEST	N/A
CLEAN VENTURE CYCLE 1801 PAPERMILL ROAD GLENSIDE, PA 19038	PA MANIFEST Generator EPA Id: PADEP0014386	N/A
SPRINGFIELD HIGH SCH 1801 E PAPER MILL RD ERDENHEIM, PA 19038	PA ARCHIVE UST Status: Closed Without a Permit Facility Id: 46-40884	N/A

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

## EXECUTIVE SUMMARY

### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
SEMS..... Superfund Enterprise Management System

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent NPL***

PA SHWS..... Hazardous Sites Cleanup Act Site List  
PA HSCA..... HSCA Remedial Sites Listing

### ***State and tribal landfill and/or solid waste disposal site lists***

PA SWF/LF..... Operating Facilities

### ***State and tribal leaking storage tank lists***

PA LAST..... Storage Tank Release Sites  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing  
PA AST..... Listing of Pennsylvania Regulated Aboveground Storage Tanks  
INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

PA ENG CONTROLS..... Engineering Controls Site Listing

## EXECUTIVE SUMMARY

PA INST CONTROL..... Institutional Controls Site Listing  
PA AUL..... Environmental Covenants Listing

### ***State and tribal voluntary cleanup sites***

INDIAN VCP..... Voluntary Cleanup Priority Listing

### ***State and tribal Brownfields sites***

PA BROWNFIELDS..... Brownfields Sites

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

PA HIST LF..... Abandoned Landfill Inventory  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands  
ODI..... Open Dump Inventory  
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
IHS OPEN DUMPS..... Open Dumps on Indian Land

#### ***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL..... Delisted National Clandestine Laboratory Register  
US CDL..... National Clandestine Laboratory Register

#### ***Local Lists of Registered Storage Tanks***

PA ARCHIVE AST..... Archived Aboveground Storage Tank Sites

#### ***Local Land Records***

LIENS 2..... CERCLA Lien Information  
PA ACT 2-DEED..... Act 2-Deed Acknowledgment Sites

#### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System  
PA SPILLS..... State spills

#### ***Other Ascertainable Records***

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
FUDS..... Formerly Used Defense Sites  
DOD..... Department of Defense Sites  
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
US FIN ASSUR..... Financial Assurance Information  
EPA WATCH LIST..... EPA WATCH LIST  
2020 COR ACTION..... 2020 Corrective Action Program List  
TSCA..... Toxic Substances Control Act

## EXECUTIVE SUMMARY

TRIS.....	Toxic Chemical Release Inventory System
SSTS.....	Section 7 Tracking Systems
ROD.....	Records Of Decision
RMP.....	Risk Management Plans
RAATS.....	RCRA Administrative Action Tracking System
PRP.....	Potentially Responsible Parties
PADS.....	PCB Activity Database System
ICIS.....	Integrated Compliance Information System
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS.....	Material Licensing Tracking System
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database
RADINFO.....	Radiation Information Database
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS.....	Incident and Accident Data
CONSENT.....	Superfund (CERCLA) Consent Decrees
INDIAN RESERV.....	Indian Reservations
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US MINES.....	Mines Master Index File
ABANDONED MINES.....	Abandoned Mines
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
UXO.....	Unexploded Ordnance Sites
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
PA AIRS.....	Permit and Emissions Inventory Data
PA DRYCLEANERS.....	Drycleaner Facility Locations
PA MINES.....	MINES
PA UIC.....	Underground Injection Wells

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner.....	EDR Exclusive Historic Dry Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

PA RGA HWS.....	Recovered Government Archive State Hazardous Waste Facilities List
PA RGA LF.....	Recovered Government Archive Solid Waste Facilities List
PA RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.



## EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### **STANDARD ENVIRONMENTAL RECORDS**

#### ***Federal RCRA generators list***

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/12/2016 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>SPRINGFIELD TWP</i></b>	<b><i>1510 PAPER MILL RD</i></b>	<b><i>SSE 0 - 1/8 (0.066 mi.)</i></b>	<b><i>5</i></b>	<b><i>17</i></b>

#### ***State and tribal leaking storage tank lists***

PA LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Resources' List of Confirmed Releases.

A review of the PA LUST list, as provided by EDR, and dated 12/12/2016 has revealed that there is 1 PA LUST site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>SPRINGFIELD TWP</i></b> Facility Id: 605428	<b><i>1510 PAPER MILL RD</i></b>	<b><i>SSE 0 - 1/8 (0.066 mi.)</i></b>	<b><i>5</i></b>	<b><i>17</i></b>

#### ***State and tribal registered storage tank lists***

PA UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Resources' Regulated Underground Storage Tank Listing.

A review of the PA UST list, as provided by EDR, and dated 12/01/2016 has revealed that there is 1 PA UST site within approximately 0.25 miles of the target property.

## EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SPRINGFIELD TWP</b> Site ID: 584365 Tank Status: Currently In Use	<b>1510 PAPER MILL RD</b>	<b>SSE 0 - 1/8 (0.066 mi.)</b>	<b>5</b>	<b>17</b>

### ***State and tribal voluntary cleanup sites***

PA VCP: The VCP listings included Completed Sites, Sites in Progress and Act 2 Non-Use Aquifer Determinations Sites. Formerly known as the Act 2, the Land Recycling Program encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites.

A review of the PA VCP list, as provided by EDR, and dated 10/12/2016 has revealed that there is 1 PA VCP site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>KOSTYCK/ROBERTSON PR</b> Activity ID: 618282	<b>1501 PAPERMILL RD</b>	<b>SSW 1/8 - 1/4 (0.133 mi.)</b>	<b>6</b>	<b>26</b>

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Lists of Registered Storage Tanks***

PA ARCHIVE UST: The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

A review of the PA ARCHIVE UST list, as provided by EDR, and dated 04/10/2017 has revealed that there are 2 PA ARCHIVE UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SPRINGFIELD TWP</b> Status: Removed Facility Id: 46-42694	<b>1510 PAPER MILL RD</b>	<b>SSE 0 - 1/8 (0.066 mi.)</b>	<b>5</b>	<b>17</b>
<b>HARSTON HALL NURSING</b> Status: Closed Without a Permit Facility Id: 46-46232	<b>350 HAWS LN</b>	<b>NW 1/8 - 1/4 (0.231 mi.)</b>	<b>7</b>	<b>26</b>

#### ***Other Ascertainable Records***

PA MANIFEST: Hazardous waste manifest information.

A review of the PA MANIFEST list, as provided by EDR, and dated 12/31/2015 has revealed that there is 1 PA MANIFEST site within approximately 0.25 miles of the target property.

## EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SPRINGFIELD TWP</b> Generator EPA Id: PAD987381480	<b>1510 PAPER MILL RD</b>	<b>SSE 0 - 1/8 (0.066 mi.)</b>	<b>5</b>	<b>17</b>

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

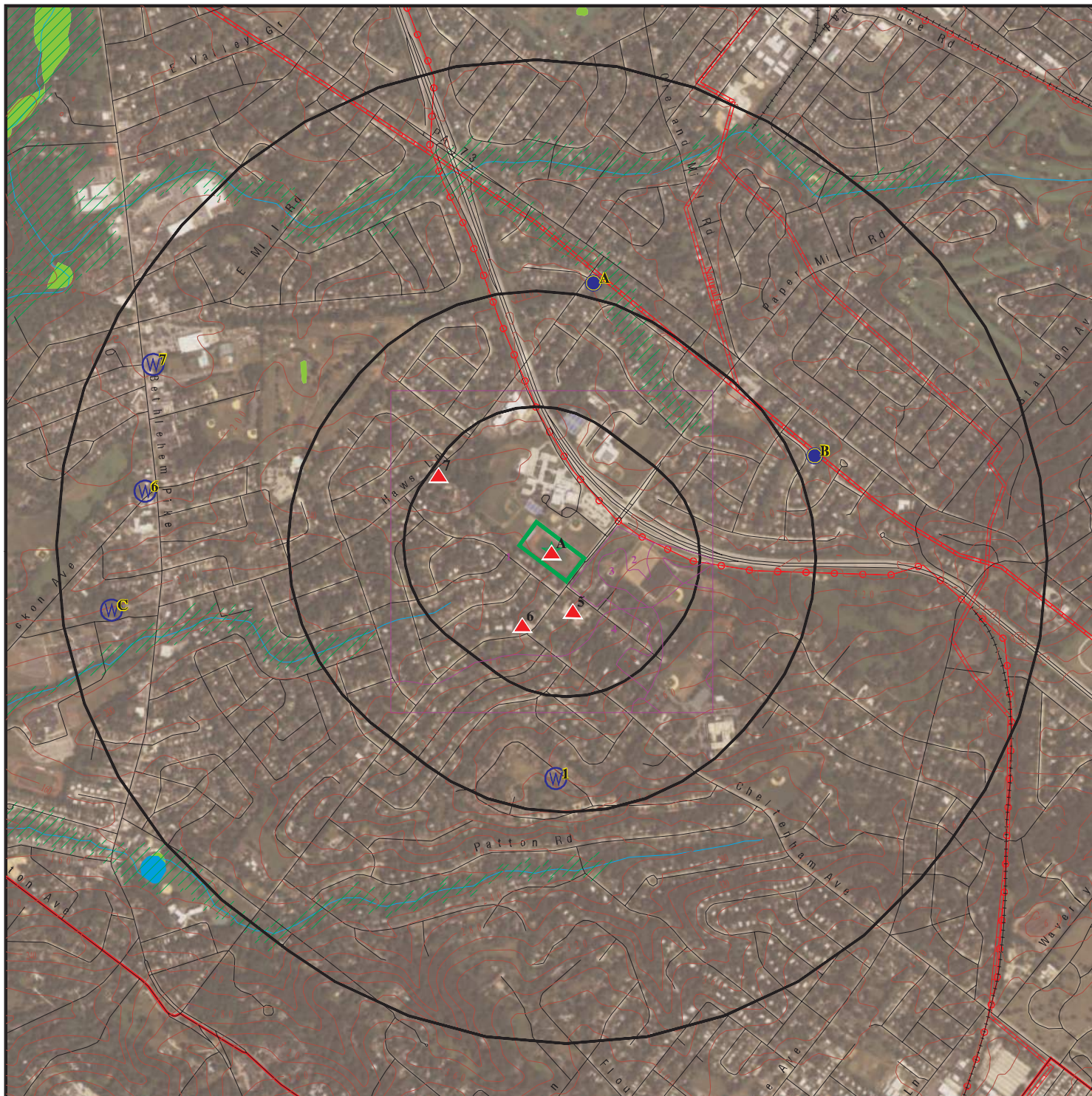
A review of the NY MANIFEST list, as provided by EDR, and dated 01/30/2017 has revealed that there is 1 NY MANIFEST site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SPRINGFIELD TWP</b> Generator EPA Id: PAD987381480	<b>1510 PAPER MILL RD</b>	<b>SSE 0 - 1/8 (0.066 mi.)</b>	<b>5</b>	<b>17</b>


## EXECUTIVE SUMMARY


There were no unmapped sites in this report.

# OVERVIEW MAP - 04949796.2R



 Target Property

 Sites at elevations higher than or equal to the target property

 Sites at elevations lower than the target property

 Manufactured Gas Plants

 National Priority List Sites

 Dept. Defense Sites

 Indian Reservations BIA

 County Boundary

 Power transmission lines

 Pipelines

 100-year flood zone

 500-year flood zone

 National Wetland Inventory

 State Wetlands

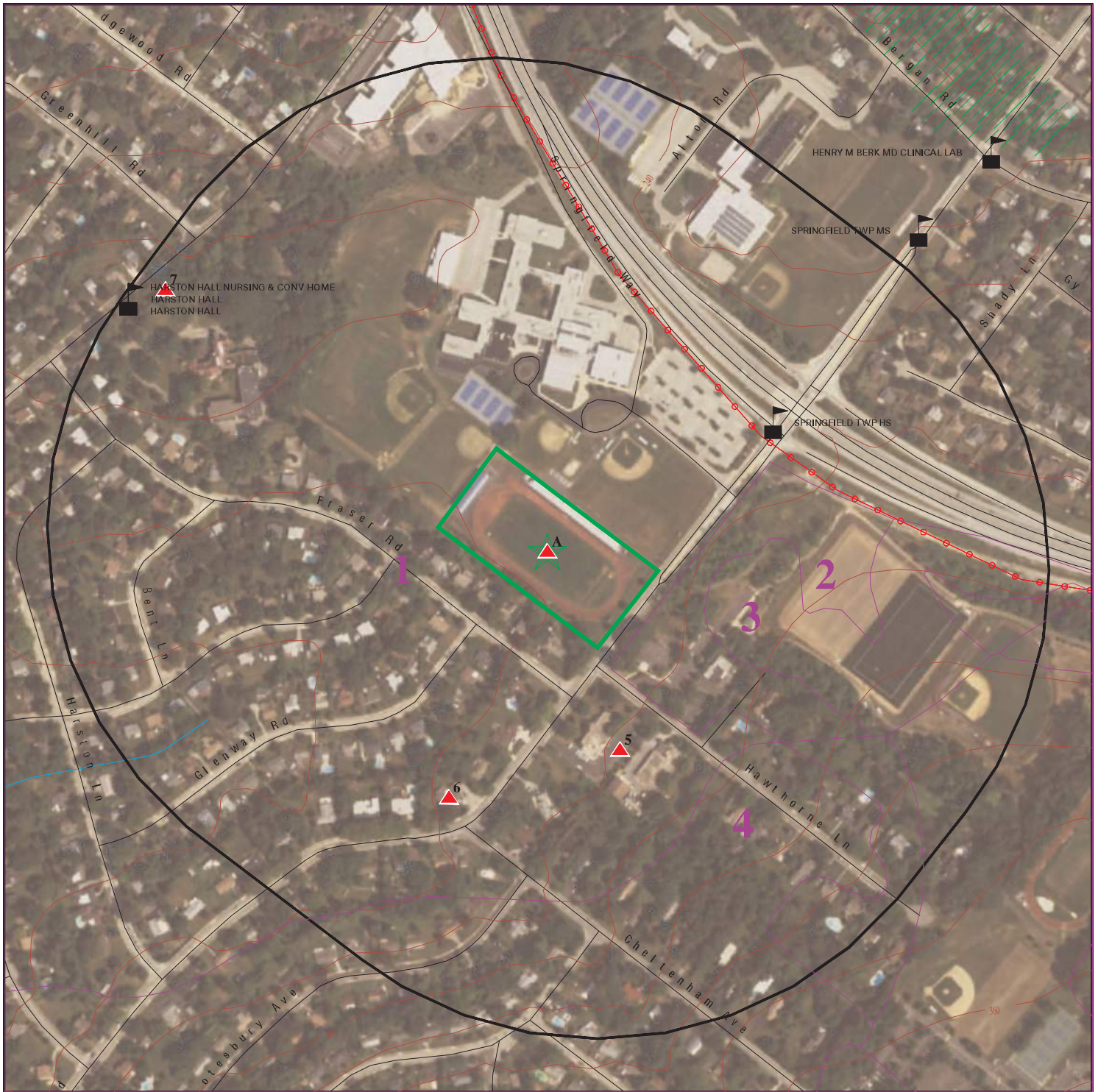
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.








SITE NAME: 1801 Papermill Road  
 ADDRESS: 1801 Papermill Road  
 Glenside PA 19038  
 LAT/LONG: 40.100502 / 75.196798





CLIENT: Earth Engineering Inc.  
 CONTACT: Max W. Perlow  
 INQUIRY #: 04949796.2r  
 DATE: May 30, 2017 11:33 am



# DETAIL MAP - 04949796.2R



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Power transmission lines
-  100-year flood zone
-  500-year flood zone

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 1801 Papermill Road  
 ADDRESS: 1801 Papermill Road  
 Glenside PA 19038  
 LAT/LONG: 40.100502 / 75.196798

CLIENT: Earth Engineering Inc.  
 CONTACT: Max W. Perlow  
 INQUIRY #: 04949796.2r  
 DATE: May 30, 2017 11:48 am

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250	1	1	0	NR	NR	NR	2
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent NPL</i></b>								
PA SHWS	1.000		0	0	0	0	NR	0
PA HSCA	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
PA SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
PA LAST	0.500		0	0	0	NR	NR	0
PA LUST	0.500		1	0	0	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0



## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PA UNREG LTANKS	0.500	1	0	0	0	NR	NR	1
<b>State and tribal registered storage tank lists</b>								
FEMA UST	0.250		0	0	NR	NR	NR	0
PA UST	0.250		1	0	NR	NR	NR	1
PA AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
PA ENG CONTROLS	0.500		0	0	0	NR	NR	0
PA INST CONTROL	0.500		0	0	0	NR	NR	0
PA AUL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
PA VCP	0.500		0	1	0	NR	NR	1
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
PA BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
PA HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Lists of Registered Storage Tanks</b>								
PA ARCHIVE UST	0.250	1	1	1	NR	NR	NR	3
PA ARCHIVE AST	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
PA ACT 2-DEED	0.500		0	0	0	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
PA SPILLS	TP		NR	NR	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.500		0	0	0	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP	1	NR	NR	NR	NR	NR	1
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PA AIRS	TP		NR	NR	NR	NR	NR	0
PA DRYCLEANERS	0.250		0	0	NR	NR	NR	0
PA MANIFEST	0.250	1	1	0	NR	NR	NR	2
NY MANIFEST	0.250		1	0	NR	NR	NR	1
MN MANIFEST	0.250	1	0	0	NR	NR	NR	1
PA MINES	0.250		0	0	NR	NR	NR	0
PA NPDES	TP		NR	NR	NR	NR	NR	0
PA UIC	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### **EDR Exclusive Records**

EDR MGP	1.000		0	0	0	0	NR	0
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## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
<b><u>EDR RECOVERED GOVERNMENT ARCHIVES</u></b>								
<b><i>Exclusive Recovered Govt. Archives</i></b>								
PA RGA HWS	TP		NR	NR	NR	NR	NR	0
PA RGA LF	TP		NR	NR	NR	NR	NR	0
PA RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		7	6	2	0	0	0	15

**NOTES:**

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

A1  
Target  
Property

SPRINGFIELD HIGH SCH  
1801 E PAPERMILL RD  
ERDENHEIM, PA 19038

RCRA-SQG  
PA UNREG LTANKS  
FINDS  
ECHO

1000257275  
PAD982579682

Site 1 of 4 in cluster A

Actual:  
243 ft.

RCRA-SQG:

Date form received by agency: 04/06/1988  
Facility name: SPRINGFIELD HIGH SCHOOL  
Facility address: 1801 E PAPERMILL RD  
ERDENHEIM, PA 19118  
EPA ID: PAD982579682  
Mailing address: 1901 E PAPERMILL RD  
ORELAND, PA 19075  
Contact: NICHOLAS SCHILLER  
Contact address: 1801 E PAPERMILL RD  
ERDENHEIM, PA 19118  
Contact country: US  
Contact telephone: (215) 233-6066  
Contact email: Not reported  
EPA Region: 03  
Classification: Small Small Quantity Generator  
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: SPRINGFIELD TOWNSHIP SCHOOL DISTRICT  
Owner/operator address: OWNERSTREET  
OWNERCITY, AK 99999  
Owner/operator country: Not reported  
Owner/operator telephone: (215) 555-1212  
Legal status: State  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: OPERNAME  
Owner/operator address: OPERSTREET  
OPERCITY, AK 99999  
Owner/operator country: Not reported  
Owner/operator telephone: (215) 555-1212  
Legal status: State  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD HIGH SCH (Continued)**

**1000257275**

Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

. Waste code: D000  
. Waste name: Not Defined

. Waste code: D001  
. Waste name: IGNITABLE WASTE

. Waste code: D002  
. Waste name: CORROSIVE WASTE

. Waste code: D003  
. Waste name: REACTIVE WASTE

Violation Status: No violations found

**UNREG LTANKS:**

Region: South East  
Contaminant: FUEL OIL #2  
**Closed: 1/24/1995**  
Class: Cleanup of Tanks using authorities other than Act 32

**FINDS:**

Registry ID: 110001020467

**Environmental Interest/Information System**

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

PA-EFACTS (Pennsylvania - Environmental Facility Application Compliance Tracking System) is a Department-wide database that provides a holistic view of clients and sites (including facilities) that DEP regulates.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**SPRINGFIELD HIGH SCH (Continued)**

**1000257275**

Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000257275  
 Registry ID: 110001020467  
 DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110001020467>

**A2  
 Target  
 Property**

**SCHOOL DISTRICT OF SPRINGFIELD  
 1801 PAPER MILL RD  
 ERDENHEIM, PA 19038**

**MN MANIFEST S119131102  
 N/A**

**Site 2 of 4 in cluster A**

**Actual:  
 243 ft.**

MANIFEST:  
 Manifest ID: 598858  
 Generator ID: PAD982579682  
 Generator AI ID: 41415  
 Transporter 1 ID: MND980791321  
 Transporter 1 AI ID: 36828  
 Transporter 1 AI Name: MCI Paint & Drywall  
 Transporter 1 Address: 21400 Hamburg Ave  
 Transporter 1 City: Lakeville  
 Transporter 1 State: MN  
 Transporter 1 ZIP: 55044  
 Transporter 2 ID: Not reported  
 Transporter 2 AI ID: Not reported  
 Transporter 2 AI Name: Not reported  
 Transporter 2 Address: Not reported  
 Transporter 2 City: Not reported  
 Transporter 2 State: Not reported  
 Transporter 2 ZIP: Not reported  
 TSD ID: MND981190242  
 TSD AI ID: 36830  
 TSD AI Name: Aptus Nei  
 TSD Address: 21750 Cedar Ave  
 TSD City: Lakeville  
 TSD State: MN  
 TSD Zip: 55044  
 Gen Copy Recd Date: Not reported  
 Fac Copy Recd Date: 1993-09-16 00:00:00  
 Gen Ship Date: 1993-08-31 00:00:00  
 Trans 1 Recd Date: 1993-08-31 00:00:00  
 Trans 2 Recd Date: Not reported  
 Tsd Recd Date: 1993-09-08 00:00:00  
 Comments: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

SCHOOL DISTRICT OF SPRINGFIELD (Continued)

S119131102

Detail:

Manifest ID: 598858  
Manifest Row: 1  
Haz Material Name: PCB  
Haz Class Number: Not reported  
UN NA Number: NA9188  
Packing Group Number: Not reported  
Container Qty: 4  
Container Code: DMML  
Waste Qty: 1076  
Waste Units Code: AL  
Waste Code List: MN03

A3  
Target  
Property

CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP H  
1801 PAPERMILL ROAD  
GLENSIDE, PA 19038

PA MANIFEST S110050581  
N/A

Site 3 of 4 in cluster A

Actual:  
243 ft.

Manifest Details:

Year: 2008  
Manifest Number: 000841267JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: PAD067098822  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 550 INDUSTRIAL DRIVE  
TSD Facility City: LEWISBERRY  
TSD Facility State: PA  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 3  
Waste Number: D001  
Container Number: 5  
Container Type: Fiber or plastic boxes, cartons, cases  
Waste Quantity: 4088  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP HIGH SCHOOL (Continued)**

**S110050581**

TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: U279  
Container Number: 14  
Container Type: Metal drums, barrels, kegs  
Waste Quantity: 1737  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 000841267JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: PAD067098822  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 550 INDUSTRIAL DRIVE  
TSD Facility City: LEWISBERRY  
TSD Facility State: PA  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: D001  
Container Number: 5  
Container Type: Fiber or plastic boxes, cartons, cases  
Waste Quantity: 2103  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP HIGH SCHOOL (Continued)**

**S110050581**

TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 2  
Waste Number: U051  
Container Number: 3  
Container Type: Fiber or plastic boxes, cartons, cases  
Waste Quantity: 2077  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 2  
Waste Number: U278  
Container Number: 3  
Container Type: Fiber or plastic boxes, cartons, cases  
Waste Quantity: 2077  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 000841267JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: PAD067098822  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 550 INDUSTRIAL DRIVE  
TSD Facility City: LEWISBERRY  
TSD Facility State: PA

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP HIGH SCHOOL (Continued)**

**S110050581**

Facility Telephone: Not reported  
Page Number: 1  
Line Number: 2  
Waste Number: x99x  
Container Number: 3  
Container Type: Portable tanks  
Waste Quantity: 5507  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469800JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/15/2008  
Mailing Address: Not reported  
Mailing City,St,Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: D001  
Container Number: 2  
Container Type: Metal drums, barrels, kegs  
Waste Quantity: 390  
Unit: Kilograms  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City,St,Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP HIGH SCHOOL (Continued)**

**S110050581**

Waste Number: U240  
Container Number: 14  
Container Type: Metal drums, barrels, kegs  
Waste Quantity: 1737  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported

Page Number: 1  
Line Number: 2  
Waste Number: U279  
Container Number: 3  
Container Type: Fiber or plastic boxes, cartons, cases  
Waste Quantity: 2077  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2008  
Manifest Number: 004469651JJK  
Manifest Type: TSD Copy  
Generator EPA Id: PADEP0014386  
Generator Date: 08/02/2008  
Mailing Address: Not reported  
Mailing City, St, Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 908-355-5800  
TSD EPA Id: NJD002200046  
TSD Date: Not reported  
TSD Facility Name: CYCLE CHEM INC  
TSD Facility Address: 217 SOUTH FIRST STREET  
TSD Facility City: ELIZABETH  
TSD Facility State: NJ  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: U036  
Container Number: 14  
Container Type: Metal drums, barrels, kegs

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CLEAN VENTURE CYCLE CHEM AT SPRINGFIELD TOWNSHIP HIGH SCHOOL (Continued)**

**S110050581**

Waste Quantity: 1737  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

[Click this hyperlink](#) while viewing on your computer to access  
4 additional PA\_MANIFEST: record(s) in the EDR Site Report.

**A4  
Target  
Property**

**SPRINGFIELD HIGH SCH  
1801 E PAPER MILL RD  
ERDENHEIM, PA 19038**

**PA ARCHIVE UST S119704236  
N/A**

**Site 4 of 4 in cluster A**

**Actual:  
243 ft.**

ARCHIVE UST:  
Facility Id: 46-40884  
Site ID: Not reported  
Municipality: Springfield Twp  
Client Date: Not reported  
Owner Id: Not reported  
Owner Name: SPRINGFIELD TWP SCH DIST  
Owner Address: 1901 PAPER MILL RD  
Owner Address 2: Not reported  
Owner City,St,Zip: ORELAND, PA 19075-2418  
Owner Phone: Not reported  
Owner County Code: Not reported  
Resp Party Name: Not reported  
RP Address: Not reported  
RP Address 2: Not reported  
RP City,St,Zip: Not reported  
Region Code Name: Not reported  
Regulated Expire Date: Not reported  
  
Tank Sequence #: 002  
Tank Id: Not reported  
Status: Closed Without a Permit  
Status Code End Date: Not reported  
Capacity: 10000  
Substance: Heating Oil  
Tank Substance End Date: Not reported  
Install Date: 10/01/1953  
Tank Code: UST  
Inspection Code: Not reported  
Last Inspection: Not reported  
Substance Type: P  
CASRN for Hazardous Substances: Not reported  
Chemical Name: Not reported  
Other Information Regarding The Tank Substance: Not reported  
Undeliverable Address Ind.: N  
Contact Name: UNKNOWN  
Company: Not reported  
  
Tank Sequence #: 001  
Tank Id: Not reported  
Status: Closed Without a Permit  
Status Code End Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD HIGH SCH (Continued)**

**S119704236**

Capacity: 10000  
Substance: Heating Oil  
Tank Substance End Date: Not reported  
Install Date: 10/01/1953  
Tank Code: UST  
Inspection Code: Not reported  
Last Inspection: Not reported  
Substance Type: P  
CASRN for Hazardous Substances: Not reported  
Chemical Name: Not reported  
Other Information Regarding The Tank Substance: Not reported  
Undeliverable Address Ind.: N  
Contact Name: UNKNOWN  
Company: Not reported

5  
SSE  
< 1/8  
0.066 mi.  
350 ft.

**SPRINGFIELD TWP  
1510 PAPER MILL RD  
WYNDMOOR, PA 19118**

**RCRA-SQG 1000695538  
PA LUST PAD987381480  
PA UST  
PA ARCHIVE UST  
FINDS  
ECHO  
PA MANIFEST  
NY MANIFEST  
PA NPDES**

**Relative:  
Higher**

**Actual:  
262 ft.**

**RCRA-SQG:**

Date form received by agency: 06/29/1992  
Facility name: SPRINGFIELD TWP  
Facility address: 1510 PAPER MILL RD  
WYNDMOOR, PA 19118  
EPA ID: PAD987381480  
Contact: BOB WENTZ  
Contact address: 1510 PAPER MILL RD  
WYNDMOOR, PA 19118  
Contact country: US  
Contact telephone: (215) 836-7600  
Contact email: Not reported  
EPA Region: 03  
Classification: Small Small Quantity Generator  
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

**Owner/Operator Summary:**

Owner/operator name: SPRINGFIELD TWP  
Owner/operator address: OWNST  
OWNCTY, PA 66666  
Owner/operator country: Not reported  
Owner/operator telephone: Not reported  
Legal status: Municipal  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

. Waste code: D000  
. Waste name: Not Defined

. Waste code: D018  
. Waste name: BENZENE

Violation Status: No violations found

LUST:

Region: EP SE Rgnl Off Norristown  
Municipality: Springfield Twp  
Facility Id: 605428  
Facility Type: Underground Storage Tank Containing Petroleum  
**Facility Status: Cleanup Completed**  
Status Date: 02/17/1993  
Confirmed Date: 08/05/1989  
Program Other Id: 46-42694  
Client: SPRINGFIELD TWP MONTGOMERY CNTY  
Incident Id: 2817  
Incident Desc: SPRINGFIELD TWP  
Suspect Date: Not reported  
Source Of Notification: Not reported  
Release Discovered: Not reported  
Source Cause Of Release: Not reported  
Tank: Not reported  
Impact Desc: Soil  
Substance: Gasoline  
CAS RN: Not reported  
Chemical: Not reported  
Comments: Not reported  
Horizontal Ref Datum: Not reported  
Altitude Datum: Not reported  
Latitude: Not reported  
Longitude: Not reported

Region: EP SE Rgnl Off Norristown  
Municipality: Springfield Twp  
Facility Id: 605428  
Facility Type: Underground Storage Tank Containing Petroleum  
**Facility Status: Cleanup Completed**



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

1000695538

Status Date: 08/18/2014  
Confirmed Date: 12/31/2013  
Program Other Id: 46-42694  
Client: SPRINGFIELD TWP MONTGOMERY CNTY  
Incident Id: 46025  
Incident Desc: NOC  
Suspect Date: Not reported  
Source Of Notification: OWNER  
Release Discovered: VISOD  
Source Cause Of Release: PUST  
Tank: Not reported  
Impact Desc: Soil  
Substance: Diesel Fuel  
CAS RN: Not reported  
Chemical: Not reported  
Comments: Not reported  
Horizontal Ref Datum: Not reported  
Altitude Datum: Not reported  
Latitude: Not reported  
Longitude: Not reported

UST:

Site ID: 584365  
Other Id: 46-42694  
Client Id Number: 71044  
Municipality Name: Springfield  
Region: EP SE Rgnl Off Norristown  
Mailing Name: SPRINGFIELD TWP MONTGOMERY CNTY  
Mailing Address: 1510 PAPER MILL RD  
Mailing Address 2: Not reported  
Mailing City,St,Zip: WYNDMOOR, PA 19038  
Registration Expiration Date: 02/04/2017

Tank Seq No: 001  
**Tank Status:** **Currently In Use**  
Capacity: 10000  
Substance: Gasoline  
Date Installed: 08/01/1974  
Tank Code: UST  
Inspection Code: Facility Operation Inspection  
Tank Last Dt Inspected: 12/02/2015  
Decode for Tstatus: Currently In Use  
Decode for Substance: Gasoline

Tank Seq No: 003  
**Tank Status:** **Currently In Use**  
Capacity: 10000  
Substance: Diesel Fuel  
Date Installed: 07/30/1998  
Tank Code: UST  
Inspection Code: Facility Operation Inspection  
Tank Last Dt Inspected: 12/02/2015  
Decode for Tstatus: Currently In Use  
Decode for Substance: Diesel Fuel

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

ARCHIVE UST:

Facility Id: 46-42694  
Site ID: Not reported  
Municipality: Springfield Twp  
Client Date: Not reported  
Owner Id: Not reported  
Owner Name: SPRINGFIELD TWP MONTGOMERY CNTY  
Owner Address: 1510 PAPER MILL RD  
Owner Address 2: Not reported  
Owner City,St,Zip: WYNDMOOR, PA 19038-7032  
Owner Phone: Not reported  
Owner County Code: Not reported  
Resp Party Name: Not reported  
RP Address: Not reported  
RP Address 2: Not reported  
RP City,St,Zip: Not reported  
Region Code Name: Not reported  
Regulated Expire Date: Not reported

Tank Sequence #: 002  
Tank Id: Not reported  
Status: Removed  
Status Code End Date: Not reported  
Capacity: 10000  
Substance: Diesel Fuel  
Tank Substance End Date: Not reported  
Install Date: 06/01/1982  
Tank Code: UST  
Inspection Code: Not reported  
Last Inspection: Not reported  
Substance Type: P  
CASRN for Hazardous Substances: Not reported  
Chemical Name: Not reported  
Other Information Regarding The Tank Substance: Not reported  
Undeliverable Address Ind.: N  
Contact Name: JEFFREY T. HARBISON TWP PRES  
Company: Not reported

FINDS:

Registry ID: 110004867564

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

PA-EFACTS (Pennsylvania - Environmental Facility Application Compliance Tracking System) is a Department-wide database that provides a holistic view of clients and sites (including facilities) that DEP regulates.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**

Envid: 1000695538  
Registry ID: 110004867564  
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110004867564>

**Manifest Details:**

Year: 2010  
Manifest Number: 002462644SKS  
Manifest Type: TSD Copy  
Generator EPA Id: PAD987381480  
Generator Date: 05/25/2010  
Mailing Address: Not reported  
Mailing City,St,Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 215-836-7600  
TSD EPA Id: KYD053348108  
TSD Date: Not reported  
TSD Facility Name: SAFETY KLEEN CORP  
TSD Facility Address: 3700 LAGRANGE ROAD  
TSD Facility City: SMITHFIELD  
TSD Facility State: KY  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: D001  
Container Number: NULL  
Container Type: Metal drums, barrels, kegs  
Waste Quantity: 185  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

Year: 2010  
Manifest Number: 002462644SKS  
Manifest Type: TSD Copy  
Generator EPA Id: PAD987381480  
Generator Date: 05/25/2010  
Mailing Address: Not reported  
Mailing City,St,Zip: Not reported  
Contact Name: Not reported  
Contact Phone: 215-836-7600  
TSD EPA Id: KYD053348108  
TSD Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

TSD Facility Name: SAFETY KLEEN CORP  
TSD Facility Address: 3700 LAGRANGE ROAD  
TSD Facility City: SMITHFIELD  
TSD Facility State: KY  
Facility Telephone: Not reported  
Page Number: 1  
Line Number: 1  
Waste Number: D018  
Container Number: NULL  
Container Type: Metal drums, barrels, kegs  
Waste Quantity: 185  
Unit: Pounds  
Handling Code: Not reported  
TSP EPA Id: Not reported  
Date TSP Sig: Not reported

**NY MANIFEST:**

Country: USA  
EPA ID: PAD987381480  
Facility Status: Not reported  
Location Address 1: 1510 PAPERMILL ROAD  
Code: BP  
Location Address 2: Not reported  
Total Tanks: Not reported  
Location City: WYNDMOOR  
Location State: PA  
Location Zip: 19118  
Location Zip 4: Not reported

**NY MANIFEST:**

EPAID: PAD987381480  
Mailing Name: SPRINGFIELD TOWNSHIP  
Mailing Contact: SPRINGFIELD TOWNSHIP  
Mailing Address 1: 1510 PAPERMILL ROAD  
Mailing Address 2: Not reported  
Mailing City: WYNDMOOR  
Mailing State: PA  
Mailing Zip: 19118  
Mailing Zip 4: Not reported  
Mailing Country: USA  
Mailing Phone: 2158367600

**NY MANIFEST:**

Document ID: NYC4930334  
Manifest Status: K  
seq: Not reported  
Year: 1997  
Trans1 State ID: YM81642  
Trans2 State ID: 11277PNY  
Generator Ship Date: 12/16/1997  
Trans1 Recv Date: 12/16/1997  
Trans2 Recv Date: 12/22/1997  
TSD Site Recv Date: 12/16/1997  
Part A Recv Date: 01/07/1998  
Part B Recv Date: 01/15/1998  
Generator EPA ID: PAD987381480  
Trans1 EPA ID: ILD984908202

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

Trans2 EPA ID: NYD980769947  
TSDF ID 1: NYD000708198  
TSDF ID 2: Not reported  
Manifest Tracking Number: Not reported  
Import Indicator: Not reported  
Export Indicator: Not reported  
Discr Quantity Indicator: Not reported  
Discr Type Indicator: Not reported  
Discr Residue Indicator: Not reported  
Discr Partial Reject Indicator: Not reported  
Discr Full Reject Indicator: Not reported  
Manifest Ref Number: Not reported  
Alt Facility RCRA ID: Not reported  
Alt Facility Sign Date: Not reported  
MGMT Method Type Code: Not reported  
Waste Code: D039 - TETRACHLOROETHYLENE 0.73 MG/L TCLP  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00005  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 001  
Container Type: DF - Fiberboard or plastic drums (glass)  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 100

Document ID: NYC4436651  
Manifest Status: C  
seq: Not reported  
Year: 1997  
Trans1 State ID: PAYR61036  
Trans2 State ID: Not reported  
Generator Ship Date: 01/17/1997  
Trans1 Recv Date: 01/17/1997  
Trans2 Recv Date: / /  
TSD Site Recv Date: 01/24/1997  
Part A Recv Date: 02/05/1997  
Part B Recv Date: 02/05/1997  
Generator EPA ID: PAD987381480  
Trans1 EPA ID: ILD984908202  
Trans2 EPA ID: Not reported  
TSDF ID 1: NYD000708198  
TSDF ID 2: Not reported  
Manifest Tracking Number: Not reported  
Import Indicator: Not reported  
Export Indicator: Not reported  
Discr Quantity Indicator: Not reported  
Discr Type Indicator: Not reported  
Discr Residue Indicator: Not reported  
Discr Partial Reject Indicator: Not reported  
Discr Full Reject Indicator: Not reported  
Manifest Ref Number: Not reported  
Alt Facility RCRA ID: Not reported  
Alt Facility Sign Date: Not reported  
MGMT Method Type Code: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

Waste Code: D039 - TETRACHLOROETHYLENE 0.73 MG/L TCLP  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00005  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 001  
Container Type: DF - Fiberboard or plastic drums (glass)  
Handling Method: R Material recovery of more than 75 percent of the total material.  
Specific Gravity: 100

Document ID: NYC4275101  
Manifest Status: K  
seq: Not reported  
Year: 1996  
Trans1 State ID: PAYR61036  
Trans2 State ID: Not reported  
Generator Ship Date: 09/27/1996  
Trans1 Recv Date: 09/27/1996  
Trans2 Recv Date: / /  
TSD Site Recv Date: 10/04/1996  
Part A Recv Date: 10/17/1996  
Part B Recv Date: 10/22/1996  
Generator EPA ID: PAD987381480  
Trans1 EPA ID: ILD984908202  
Trans2 EPA ID: Not reported  
TSDF ID 1: NYD000708198  
TSDF ID 2: Not reported  
Manifest Tracking Number: Not reported  
Import Indicator: Not reported  
Export Indicator: Not reported  
Discr Quantity Indicator: Not reported  
Discr Type Indicator: Not reported  
Discr Residue Indicator: Not reported  
Discr Partial Reject Indicator: Not reported  
Discr Full Reject Indicator: Not reported  
Manifest Ref Number: Not reported  
Alt Facility RCRA ID: Not reported  
Alt Facility Sign Date: Not reported  
MGMT Method Type Code: Not reported  
Waste Code: D039 - TETRACHLOROETHYLENE 0.73 MG/L TCLP  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00005  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 001  
Container Type: DF - Fiberboard or plastic drums (glass)  
Handling Method: R Material recovery of more than 75 percent of the total material.  
Specific Gravity: 100

Document ID: NYC5038356  
Manifest Status: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGFIELD TWP (Continued)**

**1000695538**

seq: 01  
Year: 1998  
Trans1 State ID: PAYV03245  
Trans2 State ID: Not reported  
Generator Ship Date: 04/07/1998  
Trans1 Recv Date: 04/07/1998  
Trans2 Recv Date: Not reported  
TSD Site Recv Date: 04/17/1998  
Part A Recv Date: Not reported  
Part B Recv Date: Not reported  
Generator EPA ID: PAD987381480  
Trans1 EPA ID: ILD984908202  
Trans2 EPA ID: Not reported  
TSD ID 1: NYD000708198  
TSD ID 2: Not reported  
Manifest Tracking Number: Not reported  
Import Indicator: Not reported  
Export Indicator: Not reported  
Discr Quantity Indicator: Not reported  
Discr Type Indicator: Not reported  
Discr Residue Indicator: Not reported  
Discr Partial Reject Indicator: Not reported  
Discr Full Reject Indicator: Not reported  
Manifest Ref Number: Not reported  
Alt Facility RCRA ID: Not reported  
Alt Facility Sign Date: Not reported  
MGMT Method Type Code: Not reported  
Waste Code: D039 - TETRACHLOROETHYLENE 0.73 MG/L TCLP  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00005  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 001  
Container Type: DF - Fiberboard or plastic drums (glass)  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 01.00

**NPDES:**

Permit Number: PAG130078  
Permit Name: SPRINGFIELD TWP MONTGOMERY CNTY  
Effective Date: 02/01/2004  
Expiration Date: 03/09/2008  
Receiving Waters: Unnamed Tributary Of Wissahickon Creek  
Current Major Minor Status: Minor  
Total App. Design Flow (MGD): Not reported  
Cognizant Official: Not reported  
Cognizant Official Telephone: Not reported  
Permit Street Address: 1510 PAPER MILL RD  
Permit City/State/Zip: WYNDMOOR, PA 19038



MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Site

Database(s)

EDR ID Number  
EPA ID Number

**6**  
**SSW**  
**1/8-1/4**  
**0.133 mi.**  
**704 ft.**

**KOSTYCK/ROBERTSON PROP**  
**1501 PAPERMILL RD**  
**ERDENHEIM, PA 19038**

**PA VCP**    **S106983513**  
**N/A**

**Relative:**  
**Higher**

VCP:

Cleanup Records:

**Actual:**  
**247 ft.**

Municipality:	Springfield Twp
Region:	Southeast Region
Category Desc:	PAH
Type:	Complete Sites
LRP Activity Number:	2788
Remediation:	Statewide Health Standard
Activity:	NO
Date Approved:	11/21/2000
Date Received:	Not reported
Date Nonuse:	Not reported
ICS Code:	Not reported
Media:	Soil
Latitude:	Not reported
Longitude:	Not reported

Activity:

Activity ID:	618282, 618282,
Municipality:	Springfield Twp
Region:	Southeast Region
Category Desc:	Not reported
Type:	Complete Sites
LRP Activity Number:	2788
Remediation:	Statewide Health Standard
Activity:	NO
Date Approved:	11/21/2000
Date Received:	Not reported
Date Nonuse:	Not reported
ICS Code:	Not reported
Media:	Soil
Latitude:	Not reported
Longitude:	Not reported

**7**  
**NW**  
**1/8-1/4**  
**0.231 mi.**  
**1219 ft.**

**HARSTON HALL NURSING HOME**  
**350 HAWS LN**  
**FLOWERTOWN, PA 19031**

**PA ARCHIVE UST**    **S119704664**  
**N/A**

**Relative:**  
**Higher**

ARCHIVE UST:

**Actual:**  
**266 ft.**

Facility Id:	46-46232
Site ID:	Not reported
Municipality:	Springfield Twp
Client Date:	Not reported
Owner Id:	Not reported
Owner Name:	CROZER KEYSTONE HEALTH SYS
Owner Address:	1400 PROVIDENCE RD
Owner Address 2:	ROSE TREE CORP CTR
Owner City,St,Zip:	MEDIA, PA 19063
Owner Phone:	Not reported
Owner County Code:	Not reported
Resp Party Name:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**HARSTON HALL NURSING HOME (Continued)**

**S119704664**

RP Address:	Not reported
RP Address 2:	Not reported
RP City,St,Zip:	Not reported
Region Code Name:	Not reported
Regulated Expire Date:	Not reported
Tank Sequence #:	001
Tank Id:	Not reported
Status:	Closed Without a Permit
Status Code End Date:	Not reported
Capacity:	10000
Substance:	Heating Oil
Tank Substance End Date:	Not reported
Install Date:	04/10/1995
Tank Code:	UST
Inspection Code:	Not reported
Last Inspection:	Not reported
Substance Type:	P
CASRN for Hazardous Substances:	Not reported
Chemical Name:	Not reported
Other Information Regarding The Tank Substance:	Not reported
Undeliverable Address Ind.:	N
Contact Name:	UNKNOWN
Company:	Not reported

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/17/2017
	Data Release Frequency: Quarterly

#### NPL Site Boundaries

##### Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/17/2017
	Data Release Frequency: Quarterly

#### NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

### Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/17/2017
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

### FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 04/07/2017
Number of Days to Update: 92	Next Scheduled EDR Contact: 07/17/2017
	Data Release Frequency: Varies

### SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/07/2017	Source: EPA
Date Data Arrived at EDR: 04/19/2017	Telephone: 800-424-9346
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 07/31/2017
	Data Release Frequency: Quarterly

## ***Federal CERCLIS NFRAP site list***

### SEMS-ARCHIVE: Superfund Enterprise Management System Archive

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 02/07/2017	Source: EPA
Date Data Arrived at EDR: 04/19/2017	Telephone: 800-424-9346
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/25/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 07/31/2017
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2016	Source: EPA
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-424-9346
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-438-2474
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-438-2474
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-438-2474
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

### RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-438-2474
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Varies

### ***Federal institutional controls / engineering controls registries***

#### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/28/2016	Source: Department of the Navy
Date Data Arrived at EDR: 01/04/2017	Telephone: 843-820-7326
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/15/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 08/28/2017
	Data Release Frequency: Varies

#### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/15/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/29/2016	Telephone: 703-603-0695
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 02/28/2017
Number of Days to Update: 66	Next Scheduled EDR Contact: 06/12/2017
	Data Release Frequency: Varies

#### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/15/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/29/2016	Telephone: 703-603-0695
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 02/28/2017
Number of Days to Update: 66	Next Scheduled EDR Contact: 06/12/2017
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **Federal ERNS list**

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/26/2016  
Date Data Arrived at EDR: 09/29/2016  
Date Made Active in Reports: 11/11/2016  
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard  
Telephone: 202-267-2180  
Last EDR Contact: 03/29/2017  
Next Scheduled EDR Contact: 07/10/2017  
Data Release Frequency: Annually

## **State- and tribal - equivalent NPL**

SHWS: Hazardous Sites Cleanup Act Site List

The Hazardous Sites Cleanup Act Site List includes sites listed on PA Priority List, sites delisted from PA Priority List, Interim Response Completed sites, and Sites Being Studied or Response Being Planned.

Date of Government Version: 10/18/2016  
Date Data Arrived at EDR: 10/20/2016  
Date Made Active in Reports: 11/22/2016  
Number of Days to Update: 33

Source: Department Environmental Protection  
Telephone: 717-783-7816  
Last EDR Contact: 04/19/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: Semi-Annually

HSCA: HSCA Remedial Sites Listing

A list of remedial sites on the PA Priority List. This is the PA state equivalent of the federal NPL superfund list.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 10/25/2016  
Date Made Active in Reports: 11/22/2016  
Number of Days to Update: 28

Source: Department of Environmental Protection  
Telephone: 717-783-7816  
Last EDR Contact: 04/19/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: Varies

## **State and tribal landfill and/or solid waste disposal site lists**

SWF/LF: Operating Facilities

The listing includes Municipal Waste Landfills, Construction/Demolition Waste Landfills and Waste-to-Energy Facilities.

Date of Government Version: 11/21/2016  
Date Data Arrived at EDR: 11/23/2016  
Date Made Active in Reports: 01/24/2017  
Number of Days to Update: 62

Source: Department of Environmental Protection  
Telephone: 717-787-7564  
Last EDR Contact: 05/25/2017  
Next Scheduled EDR Contact: 09/04/2017  
Data Release Frequency: Semi-Annually

## **State and tribal leaking storage tank lists**

LAST: Storage Tank Release Sites

Leaking Aboveground Storage Tank Incident Reports.

Date of Government Version: 12/12/2016  
Date Data Arrived at EDR: 12/15/2016  
Date Made Active in Reports: 01/24/2017  
Number of Days to Update: 40

Source: Department of Environmental Protection  
Telephone: 717-783-7509  
Last EDR Contact: 03/15/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Semi-Annually

LUST: Storage Tank Release Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/12/2016  
Date Data Arrived at EDR: 12/15/2016  
Date Made Active in Reports: 01/24/2017  
Number of Days to Update: 40

Source: Department of Environmental Protection  
Telephone: 717-783-7509  
Last EDR Contact: 03/15/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Semi-Annually

## INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/14/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Varies

## INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/07/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Quarterly

## INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/06/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Quarterly

## INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/17/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Quarterly

## INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/01/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Varies

## INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/01/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA Region 6  
Telephone: 214-665-6597  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016	Source: EPA Region 4
Date Data Arrived at EDR: 01/27/2017	Telephone: 404-562-8677
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 98	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 11/14/2016	Source: EPA Region 1
Date Data Arrived at EDR: 01/26/2017	Telephone: 617-918-1313
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Varies

UNREG LTANKS: Unregulated Tank Cases

Leaking storage tank cases from unregulated storage tanks.

Date of Government Version: 04/12/2002	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/14/2003	Telephone: 717-783-7509
Date Made Active in Reports: 08/29/2003	Last EDR Contact: 08/14/2003
Number of Days to Update: 15	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## **State and tribal registered storage tank lists**

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 04/11/2017
Number of Days to Update: 55	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Varies

UST: Listing of Pennsylvania Regulated Underground Storage Tanks

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 12/01/2016	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/15/2016	Telephone: 717-772-5599
Date Made Active in Reports: 01/23/2017	Last EDR Contact: 03/15/2017
Number of Days to Update: 39	Next Scheduled EDR Contact: 06/26/2017
	Data Release Frequency: Varies

AST: Listing of Pennsylvania Regulated Aboveground Storage Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 12/01/2016	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/15/2016	Telephone: 717-772-5599
Date Made Active in Reports: 01/23/2017	Last EDR Contact: 03/15/2017
Number of Days to Update: 39	Next Scheduled EDR Contact: 06/26/2017
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/26/2017	Telephone: 206-553-2857
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Quarterly

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/06/2016	Source: EPA Region 9
Date Data Arrived at EDR: 01/26/2017	Telephone: 415-972-3368
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Quarterly

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/17/2016	Source: EPA Region 8
Date Data Arrived at EDR: 01/26/2017	Telephone: 303-312-6137
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Quarterly

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/01/2016	Source: EPA Region 6
Date Data Arrived at EDR: 01/26/2017	Telephone: 214-665-7591
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Semi-Annually

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/01/2016	Source: EPA Region 7
Date Data Arrived at EDR: 01/26/2017	Telephone: 913-551-7003
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Varies

## INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/14/2017	Source: EPA Region 5
Date Data Arrived at EDR: 01/26/2017	Telephone: 312-886-6136
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/28/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Varies

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/14/2016  
Date Data Arrived at EDR: 01/27/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 98

Source: EPA Region 4  
Telephone: 404-562-9424  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Semi-Annually

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 11/14/2016  
Date Data Arrived at EDR: 01/26/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 99

Source: EPA, Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Varies

## **State and tribal institutional control / engineering control registries**

### ENG CONTROLS: Engineering Controls Site Listing

Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/15/2008  
Date Data Arrived at EDR: 05/16/2008  
Date Made Active in Reports: 06/12/2008  
Number of Days to Update: 27

Source: Department of Environmental Protection  
Telephone: 717-783-9470  
Last EDR Contact: 04/18/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: No Update Planned

### AUL: Environmental Covenants Listing

A listing of sites with environmental covenants.

Date of Government Version: 10/18/2016  
Date Data Arrived at EDR: 10/19/2016  
Date Made Active in Reports: 11/22/2016  
Number of Days to Update: 34

Source: Department of Environmental Protection  
Telephone: 717-783-7509  
Last EDR Contact: 04/19/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: Varies

### INST CONTROL: Institutional Controls Site Listing

Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/15/2008  
Date Data Arrived at EDR: 05/16/2008  
Date Made Active in Reports: 06/12/2008  
Number of Days to Update: 27

Source: Department of Environmental Protection  
Telephone: 717-783-9470  
Last EDR Contact: 04/18/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: No Update Planned

## **State and tribal voluntary cleanup sites**

### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008  
Date Data Arrived at EDR: 04/22/2008  
Date Made Active in Reports: 05/19/2008  
Number of Days to Update: 27

Source: EPA, Region 7  
Telephone: 913-551-7365  
Last EDR Contact: 04/20/2009  
Next Scheduled EDR Contact: 07/20/2009  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/27/2017
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/10/2017
	Data Release Frequency: Varies

## VCP: Voluntary Cleanup Program Sites

The VCP listings included Completed Sites, Sites in Progress and Act 2 Non-Use Aquifer Determinations Sites. Formerly known as the Act 2, the Land Recycling Program encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites.

Date of Government Version: 10/12/2016	Source: Department of Environmental Protection
Date Data Arrived at EDR: 10/13/2016	Telephone: 717-783-2388
Date Made Active in Reports: 11/22/2016	Last EDR Contact: 04/12/2017
Number of Days to Update: 40	Next Scheduled EDR Contact: 07/31/2017
	Data Release Frequency: Semi-Annually

## ***State and tribal Brownfields sites***

### BROWNFIELDS: Brownfields Sites

Brownfields are generally defined as abandoned or underused industrial or commercial properties where redevelopment is complicated by actual or perceived environmental contamination. Brownfields vary in size, location, age and past use. They can range from a small, abandoned corner gas station to a large, multi-acre former manufacturing plant that has been closed for years.

Date of Government Version: 10/18/2016	Source: Department of Environmental Protection
Date Data Arrived at EDR: 10/20/2016	Telephone: 717-783-1566
Date Made Active in Reports: 11/22/2016	Last EDR Contact: 04/19/2017
Number of Days to Update: 33	Next Scheduled EDR Contact: 07/31/2017
	Data Release Frequency: Varies

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/02/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2017	Telephone: 202-566-2777
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 03/02/2017
Number of Days to Update: 36	Next Scheduled EDR Contact: 07/03/2017
	Data Release Frequency: Semi-Annually

### ***Local Lists of Landfill / Solid Waste Disposal Sites***

#### HIST LF INACTIVE: Inactive Facilities List

A listing of inactive non-hazardous facilities (10000 & 300000 series). This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP's name was the Department of Environmental Resources.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/20/1994  
Date Data Arrived at EDR: 07/12/2005  
Date Made Active in Reports: 08/11/2005  
Number of Days to Update: 30

Source: Department of Environmental Protection  
Telephone: 717-787-7381  
Last EDR Contact: 06/21/2005  
Next Scheduled EDR Contact: 12/19/2005  
Data Release Frequency: No Update Planned

## HIST LF INVENTORY: Facility Inventory

A listing of solid waste facilities. This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP's name was the Department of Environmental Resources.

Date of Government Version: 06/02/1999  
Date Data Arrived at EDR: 07/12/2005  
Date Made Active in Reports: 08/11/2005  
Number of Days to Update: 30

Source: Department of Environmental Protection  
Telephone: 717-787-7381  
Last EDR Contact: 09/19/2005  
Next Scheduled EDR Contact: 12/19/2005  
Data Release Frequency: No Update Planned

## HIST LF ALI: Abandoned Landfill Inventory

The report provides facility information recorded in the Pennsylvania Department of Environmental Protection ALI database. Some of this information has been abstracted from old records and may not accurately reflect the current conditions and status at these facilities

Date of Government Version: 01/04/2005  
Date Data Arrived at EDR: 01/04/2005  
Date Made Active in Reports: 02/04/2005  
Number of Days to Update: 31

Source: Department of Environmental Protection  
Telephone: 717-787-7564  
Last EDR Contact: 11/26/2012  
Next Scheduled EDR Contact: 03/11/2013  
Data Release Frequency: Varies

## INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 05/01/2017  
Next Scheduled EDR Contact: 08/14/2017  
Data Release Frequency: Varies

## DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 04/24/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: No Update Planned

## ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 05/05/2017  
Next Scheduled EDR Contact: 08/14/2017  
Data Release Frequency: Varies

## **Local Lists of Hazardous waste / Contaminated Sites**

### **US HIST CDL: National Clandestine Laboratory Register**

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/30/2016  
Date Data Arrived at EDR: 01/05/2017  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 36

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 02/28/2017  
Next Scheduled EDR Contact: 06/12/2017  
Data Release Frequency: No Update Planned

### **US CDL: Clandestine Drug Labs**

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/30/2016  
Date Data Arrived at EDR: 12/05/2016  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 67

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 02/28/2017  
Next Scheduled EDR Contact: 06/12/2017  
Data Release Frequency: Quarterly

## **Local Lists of Registered Storage Tanks**

### **ARCHIVE UST: Archived Underground Storage Tank Sites**

The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 04/10/2017  
Date Data Arrived at EDR: 04/10/2017  
Date Made Active in Reports: 04/14/2017  
Number of Days to Update: 4

Source: Department of Environmental Protection  
Telephone: 717-772-5599  
Last EDR Contact: 05/01/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Varies

### **ARCHIVE AST: Archived Aboveground Storage Tank Sites**

The list includes aboveground tanks with a capacity greater than 21,000 gallons that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 04/10/2017  
Date Data Arrived at EDR: 04/10/2017  
Date Made Active in Reports: 04/14/2017  
Number of Days to Update: 4

Source: Department of Environmental Protection  
Telephone: 717-772-5599  
Last EDR Contact: 05/01/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Varies

## **Local Land Records**

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/18/2014	Telephone: 202-564-6023
Date Made Active in Reports: 04/24/2014	Last EDR Contact: 04/21/2017
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Varies

## ACT 2-DEED: Act 2-Deed Acknowledgment Sites

This listing pertains to sites where the Department has approved a cleanup requiring a deed acknowledgment under Act 2. This list includes sites remediated to a non-residential Statewide health standard (Section 303(g)); all sites demonstrating attainment of a Site-specific standard (Section 304(m)); and sites being remediated as a special industrial area (Section 305(g)). Persons who remediated a site to a standard that requires a deed acknowledgment shall comply with the requirements of the Solid Waste Management Act or the Hazardous Sites Cleanup Act, as referenced in Act 2. These statutes require a property description section in the deed concerning the hazardous substance disposal on the site. The location of disposed hazardous substances and a description of the type of hazardous substances disposed on the site shall be included in the deed acknowledgment. A deed acknowledgment is required at the time of conveyance of the property.

Date of Government Version: 04/23/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/28/2010	Telephone: 717-783-9470
Date Made Active in Reports: 04/30/2010	Last EDR Contact: 07/22/2011
Number of Days to Update: 2	Next Scheduled EDR Contact: 11/07/2011
	Data Release Frequency: Varies

## **Records of Emergency Release Reports**

### HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/28/2016	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 12/28/2016	Telephone: 202-366-4555
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 03/29/2017
Number of Days to Update: 37	Next Scheduled EDR Contact: 07/10/2017
	Data Release Frequency: Annually

### SPILLS: State spills

A listing of hazardous material incidents.

Date of Government Version: 10/11/2016	Source: DEP, Emergency Response
Date Data Arrived at EDR: 11/04/2016	Telephone: 717-787-5715
Date Made Active in Reports: 11/22/2016	Last EDR Contact: 04/14/2017
Number of Days to Update: 18	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Varies

## **Other Ascertainable Records**

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-438-2474
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 05/02/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Varies



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 07/08/2015	Telephone: 202-528-4285
Date Made Active in Reports: 10/13/2015	Last EDR Contact: 02/24/2017
Number of Days to Update: 97	Next Scheduled EDR Contact: 06/05/2017
	Data Release Frequency: Varies

## DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/14/2017
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Semi-Annually

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/14/2017
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: N/A

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/19/2017
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/28/2017
	Data Release Frequency: Varies

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 02/13/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/15/2017	Telephone: 202-566-1917
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 05/17/2017
Number of Days to Update: 86	Next Scheduled EDR Contact: 08/28/2017
	Data Release Frequency: Quarterly

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/30/2013  
Date Data Arrived at EDR: 03/21/2014  
Date Made Active in Reports: 06/17/2014  
Number of Days to Update: 88

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 05/08/2017  
Next Scheduled EDR Contact: 08/21/2017  
Data Release Frequency: Quarterly

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013  
Date Data Arrived at EDR: 03/03/2015  
Date Made Active in Reports: 03/09/2015  
Number of Days to Update: 6

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 05/05/2017  
Next Scheduled EDR Contact: 08/21/2017  
Data Release Frequency: Varies

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 01/15/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 14

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 03/24/2017  
Next Scheduled EDR Contact: 07/03/2017  
Data Release Frequency: Every 4 Years

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 11/24/2015  
Date Made Active in Reports: 04/05/2016  
Number of Days to Update: 133

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 02/24/2017  
Next Scheduled EDR Contact: 06/05/2017  
Data Release Frequency: Annually

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 04/26/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Annually

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013  
Date Data Arrived at EDR: 12/12/2013  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 74

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 03/06/2017  
Next Scheduled EDR Contact: 06/19/2017  
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/09/2017	Telephone: 202-564-8600
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 57	Next Scheduled EDR Contact: 08/07/2017
	Data Release Frequency: Varies

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 05/09/2017
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/21/2017
	Data Release Frequency: Quarterly

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016	Source: EPA
Date Data Arrived at EDR: 04/28/2016	Telephone: 202-566-0500
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 04/10/2017
Number of Days to Update: 127	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Annually

## ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 04/10/2017
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 05/19/2017  
Next Scheduled EDR Contact: 09/04/2017  
Data Release Frequency: Quarterly

### FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 05/19/2017  
Next Scheduled EDR Contact: 09/04/2017  
Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016  
Date Data Arrived at EDR: 09/08/2016  
Date Made Active in Reports: 10/21/2016  
Number of Days to Update: 43

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 05/08/2017  
Next Scheduled EDR Contact: 08/21/2017  
Data Release Frequency: Quarterly

### COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 03/06/2017  
Next Scheduled EDR Contact: 06/19/2017  
Data Release Frequency: Varies

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: N/A  
Last EDR Contact: 03/06/2017  
Next Scheduled EDR Contact: 06/19/2017  
Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011  
Date Data Arrived at EDR: 10/19/2011  
Date Made Active in Reports: 01/10/2012  
Number of Days to Update: 83

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 04/28/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Varies

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/04/2017  
Date Data Arrived at EDR: 01/06/2017  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 35

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 04/06/2017  
Next Scheduled EDR Contact: 07/17/2017  
Data Release Frequency: Quarterly

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 05/02/2017  
Next Scheduled EDR Contact: 08/14/2017  
Data Release Frequency: Varies

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2016  
Date Data Arrived at EDR: 11/18/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 77

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 03/27/2017  
Next Scheduled EDR Contact: 07/10/2017  
Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013  
Date Data Arrived at EDR: 02/24/2015  
Date Made Active in Reports: 09/30/2015  
Number of Days to Update: 218

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 02/22/2017  
Next Scheduled EDR Contact: 06/05/2017  
Data Release Frequency: Biennially

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 04/14/2017
Number of Days to Update: 546	Next Scheduled EDR Contact: 07/24/2017
	Data Release Frequency: Semi-Annually

## FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016	Source: Department of Energy
Date Data Arrived at EDR: 12/27/2016	Telephone: 202-586-3559
Date Made Active in Reports: 02/17/2017	Last EDR Contact: 05/05/2017
Number of Days to Update: 52	Next Scheduled EDR Contact: 08/21/2017
	Data Release Frequency: Varies

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 05/22/2017
Number of Days to Update: 146	Next Scheduled EDR Contact: 09/04/2017
	Data Release Frequency: Varies

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 12/05/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8787
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 36	Next Scheduled EDR Contact: 07/17/2017
	Data Release Frequency: Varies

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 03/07/2017  
Next Scheduled EDR Contact: 07/10/2017  
Data Release Frequency: Annually

## US AIRS MINOR: Air Facility System Data A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 03/07/2017  
Next Scheduled EDR Contact: 04/10/2017  
Data Release Frequency: Annually

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/08/2017  
Date Data Arrived at EDR: 02/28/2017  
Date Made Active in Reports: 04/07/2017  
Number of Days to Update: 38

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 02/28/2017  
Next Scheduled EDR Contact: 06/12/2017  
Data Release Frequency: Semi-Annually

## US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 03/03/2017  
Next Scheduled EDR Contact: 06/12/2017  
Data Release Frequency: Varies

## US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 03/03/2017  
Next Scheduled EDR Contact: 06/12/2017  
Data Release Frequency: Varies

## ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/14/2017  
Date Data Arrived at EDR: 03/17/2017  
Date Made Active in Reports: 04/07/2017  
Number of Days to Update: 21

Source: Department of Interior  
Telephone: 202-208-2609  
Last EDR Contact: 03/13/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/04/2017	Source: EPA
Date Data Arrived at EDR: 04/07/2017	Telephone: (215) 814-5000
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 04/07/2017
Number of Days to Update: 35	Next Scheduled EDR Contact: 06/19/2017
	Data Release Frequency: Quarterly

## DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/03/2016	Telephone: 202-564-0527
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 05/24/2017
Number of Days to Update: 91	Next Scheduled EDR Contact: 09/11/2017
	Data Release Frequency: Varies

## UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015	Source: Department of Defense
Date Data Arrived at EDR: 01/29/2016	Telephone: 571-373-0407
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 05/22/2017
Number of Days to Update: 67	Next Scheduled EDR Contact: 07/31/2017
	Data Release Frequency: Varies

## ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/19/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2017	Telephone: 202-564-2280
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 03/21/2017
Number of Days to Update: 52	Next Scheduled EDR Contact: 07/03/2017
	Data Release Frequency: Quarterly

## FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/22/2017	Source: EPA
Date Data Arrived at EDR: 02/22/2017	Telephone: 800-385-6164
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 79	Next Scheduled EDR Contact: 09/04/2017
	Data Release Frequency: Quarterly

## AIRS: Permit and Emissions Inventory Data

Permit and emissions inventory data.

Date of Government Version: 12/31/2014	Source: Department of Environmental Protection
Date Data Arrived at EDR: 02/11/2016	Telephone: 717-787-9702
Date Made Active in Reports: 04/11/2016	Last EDR Contact: 03/27/2017
Number of Days to Update: 60	Next Scheduled EDR Contact: 07/10/2017
	Data Release Frequency: Annually



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## DRYCLEANERS: Drycleaner Facility Locations

A listing of drycleaner facility locations.

Date of Government Version: 11/23/2016  
Date Data Arrived at EDR: 11/23/2016  
Date Made Active in Reports: 01/26/2017  
Number of Days to Update: 64

Source: Department of Environmental Protection  
Telephone: 717-787-9702  
Last EDR Contact: 03/20/2017  
Next Scheduled EDR Contact: 07/03/2017  
Data Release Frequency: Varies

## PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 07/22/2016  
Date Made Active in Reports: 11/22/2016  
Number of Days to Update: 123

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/18/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: Annually

## MINES: Abandoned Mine Land Inventory

This data set portrays the approximate location of Abandoned Mine Land Problem Areas containing public health, safety, and public welfare problems created by past coal mining.

Date of Government Version: 10/03/2016  
Date Data Arrived at EDR: 10/27/2016  
Date Made Active in Reports: 11/22/2016  
Number of Days to Update: 26

Source: PASDA  
Telephone: 814-863-0104  
Last EDR Contact: 04/26/2017  
Next Scheduled EDR Contact: 08/07/2017  
Data Release Frequency: Semi-Annually

## NPDES: NPDES Permit Listing

A listing of facilities with an NPDES permit.

Date of Government Version: 12/05/2016  
Date Data Arrived at EDR: 12/08/2016  
Date Made Active in Reports: 01/24/2017  
Number of Days to Update: 47

Source: Department of Environmental Protection  
Telephone: 717-787-9642  
Last EDR Contact: 03/10/2017  
Next Scheduled EDR Contact: 06/19/2017  
Data Release Frequency: Varies

## UIC: Underground Injection Wells

A listing of underground injection well locations.

Date of Government Version: 12/20/2016  
Date Data Arrived at EDR: 12/21/2016  
Date Made Active in Reports: 01/24/2017  
Number of Days to Update: 34

Source: Department of Environmental Protection  
Telephone: 717-783-7209  
Last EDR Contact: 03/22/2017  
Next Scheduled EDR Contact: 07/03/2017  
Data Release Frequency: Varies

## EDR HIGH RISK HISTORICAL RECORDS

### ***EDR Exclusive Records***

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 12/30/2013  
Number of Days to Update: 182

Source: Department Environmental Protection  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/10/2014  
Number of Days to Update: 193

Source: Department Environmental Protection  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A

Date Data Arrived at EDR: 07/01/2013

Date Made Active in Reports: 12/30/2013

Number of Days to Update: 182

Source: Department Environmental Protection

Telephone: N/A

Last EDR Contact: 06/01/2012

Next Scheduled EDR Contact: N/A

Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

## CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013

Date Data Arrived at EDR: 08/19/2013

Date Made Active in Reports: 10/03/2013

Number of Days to Update: 45

Source: Department of Energy & Environmental Protection

Telephone: 860-424-3375

Last EDR Contact: 05/15/2017

Next Scheduled EDR Contact: 08/28/2017

Data Release Frequency: No Update Planned

## NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015

Date Data Arrived at EDR: 09/29/2016

Date Made Active in Reports: 01/03/2017

Number of Days to Update: 96

Source: Department of Environmental Protection

Telephone: N/A

Last EDR Contact: 04/11/2017

Next Scheduled EDR Contact: 07/24/2017

Data Release Frequency: Annually

## NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/30/2017

Date Data Arrived at EDR: 02/01/2017

Date Made Active in Reports: 02/13/2017

Number of Days to Update: 12

Source: Department of Environmental Conservation

Telephone: 518-402-8651

Last EDR Contact: 05/03/2017

Next Scheduled EDR Contact: 08/14/2017

Data Release Frequency: Annually

## RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013

Date Data Arrived at EDR: 06/19/2015

Date Made Active in Reports: 07/15/2015

Number of Days to Update: 26

Source: Department of Environmental Management

Telephone: 401-222-2797

Last EDR Contact: 05/22/2017

Next Scheduled EDR Contact: 09/04/2017

Data Release Frequency: Annually

## VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/07/2016  
Date Data Arrived at EDR: 11/18/2016  
Date Made Active in Reports: 01/06/2017  
Number of Days to Update: 49

Source: Department of Environmental Conservation  
Telephone: 802-241-3443  
Last EDR Contact: 04/17/2017  
Next Scheduled EDR Contact: 07/31/2017  
Data Release Frequency: Annually

## WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 04/14/2016  
Date Made Active in Reports: 06/03/2016  
Number of Days to Update: 50

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/13/2017  
Next Scheduled EDR Contact: 06/26/2017  
Data Release Frequency: Annually

## Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

## Electric Power Transmission Line Data

Source: PennWell Corporation

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## AHA Hospitals:

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

## Nursing Homes

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

## Public Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

## Private Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

## Daycare Centers: Child Care Facility List

Source: Department of Public Welfare  
Telephone: 717-783-3856

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Pennsylvania Spatial Data Access

Telephone: 610-344-6105

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

### STREET AND ADDRESS INFORMATION

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

1801 PAPERMILL ROAD  
1801 PAPERMILL ROAD  
GLENSIDE, PA 19038

### **TARGET PROPERTY COORDINATES**

Latitude (North):	40.100502 - 40° 6' 1.81"
Longitude (West):	75.196798 - 75° 11' 48.47"
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	483225.6
UTM Y (Meters):	4438720.5
Elevation:	243 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	5949514 GERMANTOWN, PA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

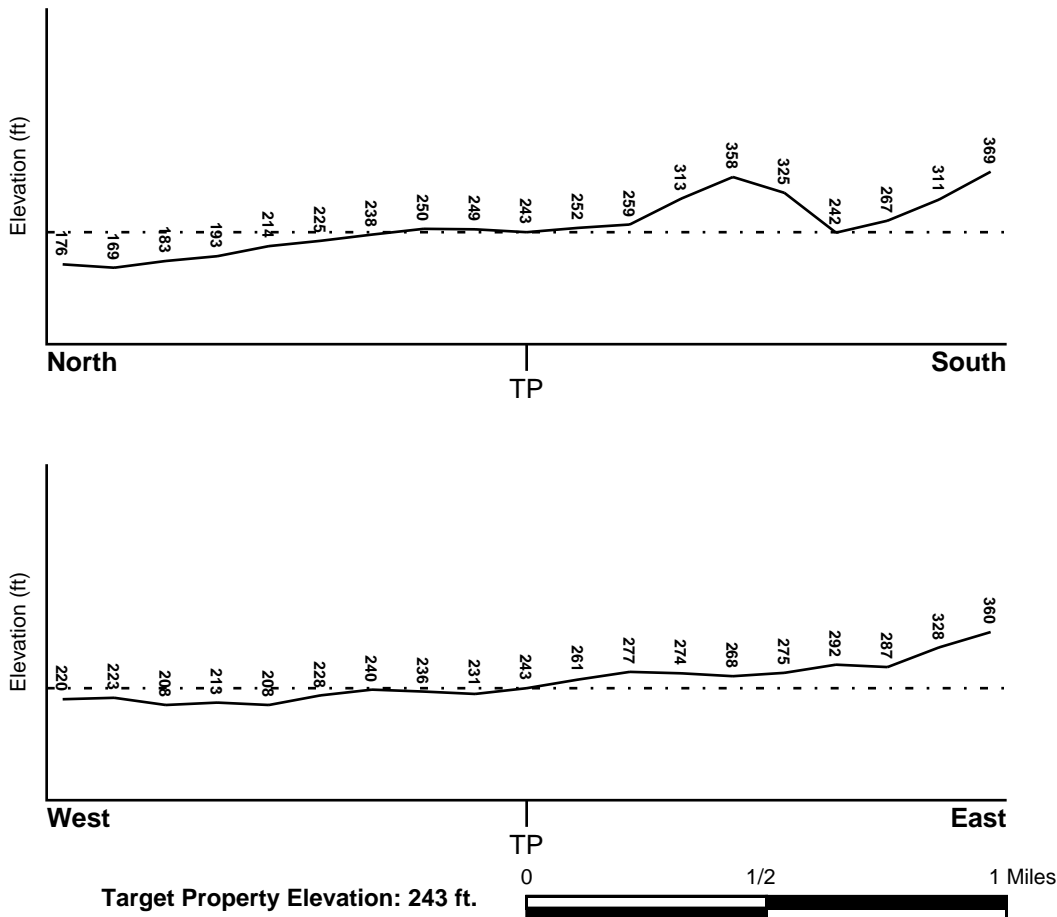
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NW

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## **FEMA FLOOD ZONE**

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
42091C0377E	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
42091C0381E	FEMA FIRM Flood data
42091C0379E	FEMA FIRM Flood data
42091C0383E	FEMA Q3 Flood data

## **NATIONAL WETLAND INVENTORY**

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
GERMANTOWN	YES - refer to the Overview Map and Detail Map

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## **AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		



## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

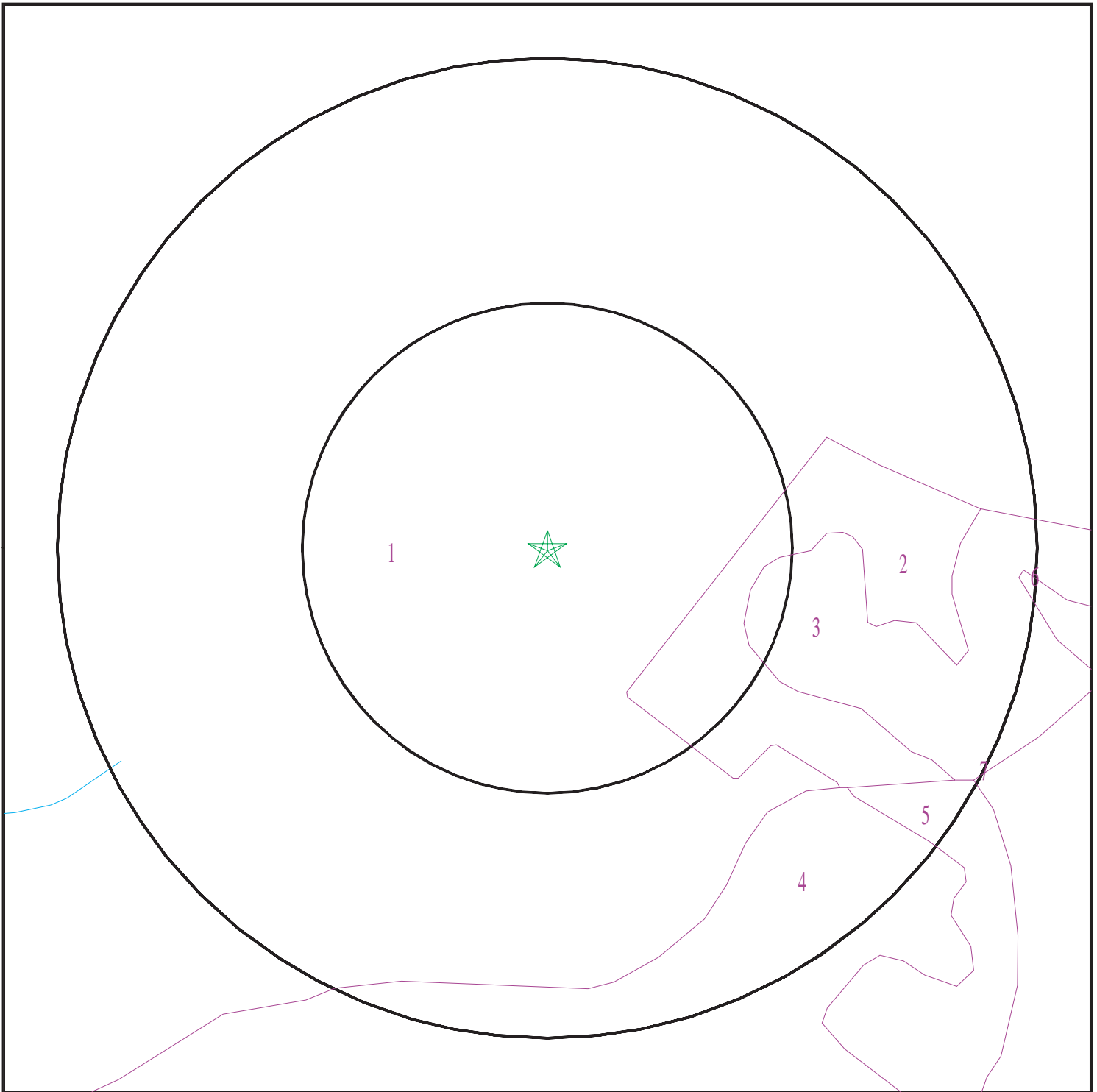
Era:	Paleozoic
System:	Cambrian
Series:	Cambrian
Code:	C ( <i>decoded above as Era, System &amp; Series</i> )

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 04949796.2r



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: 1801 Papermill Road  
ADDRESS: 1801 Papermill Road  
Glenside PA 19038  
LAT/LONG: 40.100502 / 75.196798

CLIENT: Earth Engineering Inc.  
CONTACT: Max W. Perlow  
INQUIRY #: 04949796.2r  
DATE: May 30, 2017 11:54 am

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

#### Soil Map ID: 1

Soil Component Name: Made land

Soil Surface Texture:  
Hydrologic Group: Not reported

Soil Drainage Class:  
Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 145 inches

No Layer Information available.

---

#### Soil Map ID: 2

Soil Component Name: Lawrenceville

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 46 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	9 inches	26 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
3	26 inches	51 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4.23 Min: 1.41	Max: 6 Min: 4.5
4	51 inches	61 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4.23 Min: 1.41	Max: 6 Min: 4.5

### Soil Map ID: 3

Soil Component Name: Duffield

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 186 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 5.1
2	5 inches	62 inches	gravelly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 5.1
3	62 inches	98 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

### Soil Map ID: 4

Soil Component Name:                      Made land

Soil Surface Texture:                      silt loam

Hydrologic Group:                          Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:  
Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min:                      > 0 inches

Depth to Watertable Min:                      > 137 inches

No Layer Information available.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 5**

Soil Component Name: Edgemont

Soil Surface Texture: channery loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 122 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	42 inches	channery loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6
3	42 inches	57 inches	very channery sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 6**

Soil Component Name: Duffield

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 186 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 5.1
2	5 inches	62 inches	gravelly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 5.1
3	62 inches	98 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

**Soil Map ID: 7**

Soil Component Name: Edgemont

Soil Surface Texture: channery loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 122 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	42 inches	channery loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6
3	42 inches	57 inches	very channery sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000



# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A3	USGS40001008973	1/2 - 1 Mile North

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

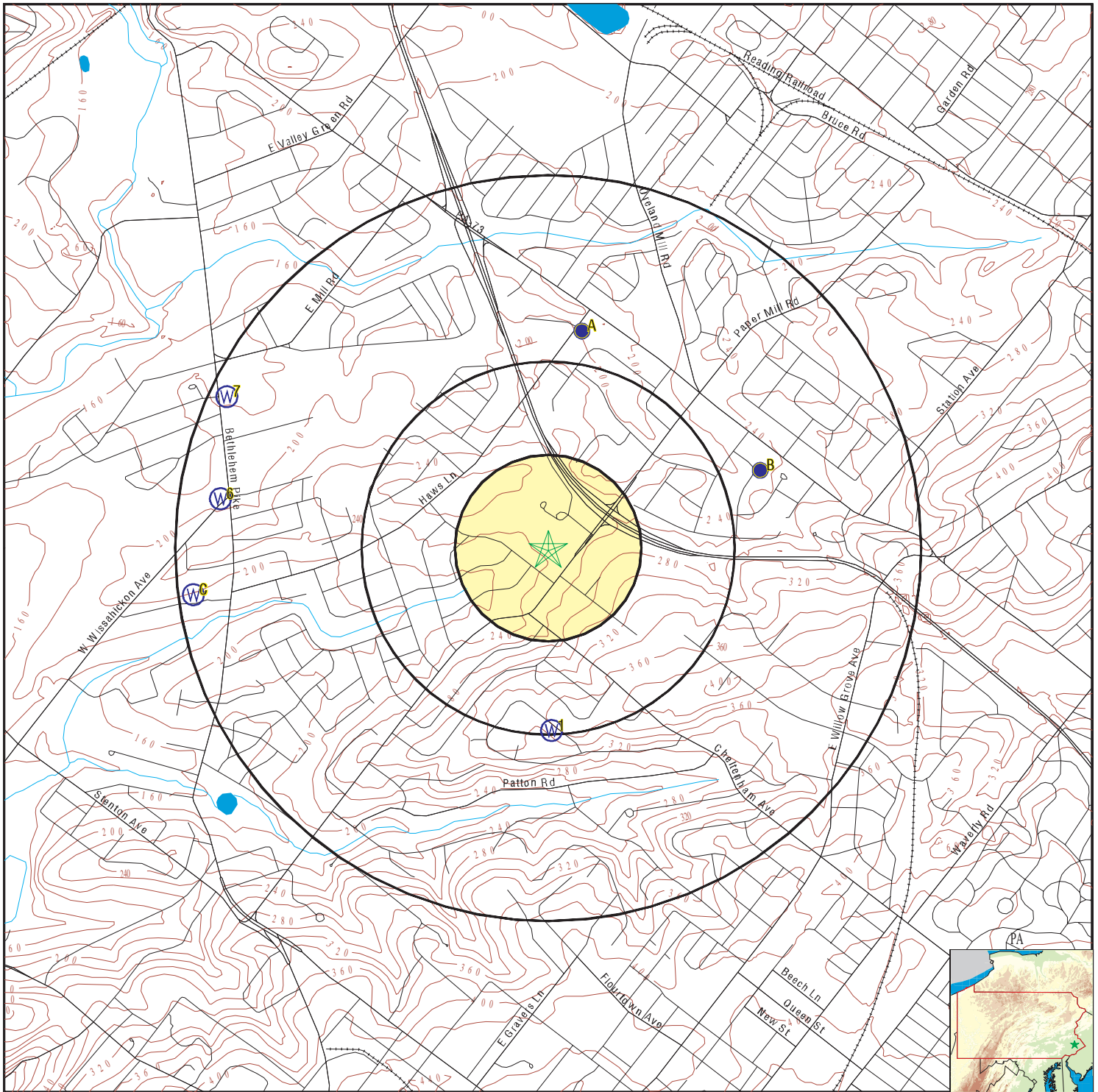
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
B4	PA1460073	1/2 - 1 Mile ENE

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	SPA0160580	1/4 - 1/2 Mile South
A2	PASI50000027453	1/2 - 1 Mile North
B5	PASI50000027444	1/2 - 1 Mile ENE
6	PASI50000408032	1/2 - 1 Mile West
7	PASI50000027446	1/2 - 1 Mile WNW
C8	PASI50000380974	1/2 - 1 Mile West
C9	PASI50000380828	1/2 - 1 Mile West
C10	PASI50000380976	1/2 - 1 Mile West
C11	PASI50000380975	1/2 - 1 Mile West

# PHYSICAL SETTING SOURCE MAP - 04949796.2r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Oil, gas or related wells



SITE NAME: 1801 Papermill Road  
 ADDRESS: 1801 Papermill Road  
 Glenside PA 19038  
 LAT/LONG: 40.100502 / 75.196798

CLIENT: Earth Engineering Inc.  
 CONTACT: Max W. Perlow  
 INQUIRY #: 04949796.2r  
 DATE: May 30, 2017 11:54 am

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**1**  
**South**  
**1/4 - 1/2 Mile**  
**Higher**

**PA WELLS      SPAW0160580**

Well ID:	6877N	County	MONROE
Owner's Name:	HOFF B	Longitude:	751149
Latitude:	400536	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Quadrangle:	EAST STROUDSBURG	Topographic Setting:	HILLTOP
Hydrologic Unit:	02040104	Site Usage:	WITHDRAWAL
Water Usage:	DOMESTIC	Finish:	OPEN HOLE
Well Depth:	180	Casing1 Diameter(inches):	6
Casing 1:	20	Casing2 Diameter(inches):	Not Reported
Casing2:	Not Reported	Date Drilled:	04-00-85
Grouted:	Not Reported	Production WL:	175
Static Water Level:	75	Yield Measurement Method:	B
Yield (gpm):	5	Test Time:	1.5
Drawdown:	100	Driller:	954
Bedrock:	3	Water Bearing Zone 1:	90
Water Bearing Zone 1:	90	Water Bearing Zone 2:	145
Water Bearing Zone 3:	170	Lithology:	OTHER
Municipality:	PRICE	Remark:	RT=RED ROCK;HOLLOWOOD ACRES
Aquifer:	LONG RUN, BEAVERDAM RUN, WALCKVILLE MEMBERS		

**A2**  
**North**  
**1/2 - 1 Mile**  
**Lower**

**PA WELLS      PASI50000027453**

Objectid:	27453	Depcounter:	-1
Siteid:	400632075114301	Transactioncount:	1
Localwellnumber:	MG 288	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	371ELBK	Topographycode:	V
Welldepth:	456	Elevation:	190
Elevmethodcode:	M	Accuracyofelevat:	10
Hydrologicunit:	02040203	Latlongaccuracyc:	S
Quadcode:	1844	Typeofsitecode:	W
Datecreated:	17-MAR-78	Dateupdated:	03-MAR-90
Datareliabilityc:	U	Sourcedepthdatac:	D
Municipalitycode:	46008		
Latitueddd:	40.1088888888889		
Longitueddd:	-75.1952777777778		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	03-AUG-55	Pagwis id:	27454
Sourcesitedataco:	1	Localpermit:	Not Reported
Latestowner:	27217	Driller scoordme:	0
Latestproduction:	44398	Latestwelluse:	27454
Site id:	PASI50000027453	GeneralCounter:	27454

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**A3**  
**North**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40001008973**

Org. Identifier:	USGS-PA			
Formal name:	USGS Pennsylvania Water Science Center			
Monloc Identifier:	USGS-400632075114301			
Monloc name:	MG 288			
Monloc type:	Well			
Monloc desc:	Not Reported			
Huc code:	02040203	Drainagearea value:	Not Reported	
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported	
Contrib drainagearea units:	Not Reported	Latitude:	40.1089991	
Longitude:	-75.1948987	Sourcemap scale:	24000	
Horiz Acc measure:	1	Horiz Acc measure units:	seconds	
Horiz Collection method:	Interpolated from map			
Horiz coord refsys:	NAD83	Vert measure val:	190	
Vert measure units:	feet	Vertacc measure val:	10	
Vert accmeasure units:	feet			
Vertcollection method:	Interpolated from topographic map			
Vert coord refsys:	NGVD29	Countrycode:	US	
Aquifername:	Not Reported			
Formation type:	Elbrook Formation			
Aquifer type:	Not Reported			
Construction date:	19550803	Welldepth:	456	
Welldepth units:	ft	Wellholedepth:	Not Reported	
Wellholedepth units:	Not Reported			

Ground-water levels, Number of Measurements: 1

	Feet below	Feet to
Date	Surface	Sealevel
-----		
1955-11-08	36.2	

**B4**  
**ENE**  
**1/2 - 1 Mile**  
**Lower**

**FRDS PWS      PA1460073**

Epa region:	03	State:	PA
Pwsid:	PA1460073		
Pwsname:	AQUA PA MAIN SYSTEM		
City served:	Not Reported	State served:	PA
Zip served:	Not Reported	Fips county:	42091
Status:	Active	Pop srvd:	784939
Pwsvconn:	337907	Source:	Surface_water
Pws type:	CWS	Owner:	Private
Contact:	WILLIAM MCGINTY		
Contact gname:	AQUA PA MAIN SYSTEM		
Contact phone:	610-645-1082	Contact address1:	762 LANCASTER AVE.
Contact address2:	Not Reported	Contact city:	BRYN MAWR
Contact state:	PA	Contact zip:	19010
Activity code:	A		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facid:	301		
Facname:	PLYMOUTH 1		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	302		
Facname:	PLYMOUTH2		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Facid:	303		
Facname:	NORTH HILLS		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Treatment obj:	organics removal	Treatment process:	aeration, packed tower
Facid:	305		
Facname:	FLOURTOWN		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	not reported
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	organics removal	Treatment process:	aeration, packed tower
Facid:	306		
Facname:	ORELAND		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	307		
Facname:	HALL ROAD		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	ultraviolet radiation
Treatment obj:	disinfection	Treatment process:	chloramines
Facid:	308		
Facname:	KARR'S LANE		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	309		
Facname:	UPPER MERION W.		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	310		
Facname:	BABBS		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Treatment obj:	disinfection	Treatment process:	chloramines
Facid:	311		
Facname:	AIDENN LAIR		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	312		
Facname:	UP MERION PLANT		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	organics removal	Treatment process:	aeration, packed tower
Treatment obj:	other	Treatment process:	innovative
Treatment obj:	particulate removal	Treatment process:	coagulation
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered
Facid:	313		
Facname:	CRUM CREEK		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	dechlorination	Treatment process:	reducing agent, sulfur dioxide
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, post
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection by-products control	Treatment process:	chloramines
Treatment obj:	disinfection by-products control	Treatment process:	ph adjustment, pre
Treatment obj:	disinfection by-products control	Treatment process:	ph adjustment, post
Treatment obj:	iron removal	Treatment process:	permanganate
Treatment obj:	manganese removal	Treatment process:	permanganate
Treatment obj:	other	Treatment process:	innovative
Treatment obj:	particulate removal	Treatment process:	rapid mix
Treatment obj:	particulate removal	Treatment process:	coagulation
Treatment obj:	particulate removal	Treatment process:	sedimentation

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered
Treatment obj:	taste / odor control	Treatment process:	gaseous chlorination, pre
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered

Facid:	314		
Facname:	PICKERING WEST		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, post
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection by-products control	Treatment process:	chloramines
Treatment obj:	iron removal	Treatment process:	permanganate
Treatment obj:	other	Treatment process:	innovative
Treatment obj:	particulate removal	Treatment process:	flocculation
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	particulate removal	Treatment process:	coagulation
Treatment obj:	particulate removal	Treatment process:	sedimentation
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered

Facid:	315		
Facname:	PICKERING EAST		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	dechlorination	Treatment process:	reducing agent, sulfur dioxide
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, post
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	manganese removal	Treatment process:	gaseous chlorination, pre
Treatment obj:	manganese removal	Treatment process:	permanganate
Treatment obj:	organics removal	Treatment process:	algae control
Treatment obj:	other	Treatment process:	innovative
Treatment obj:	particulate removal	Treatment process:	flocculation
Treatment obj:	particulate removal	Treatment process:	sedimentation
Treatment obj:	particulate removal	Treatment process:	coagulation
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered

Facid:	316		
Facname:	CHATEAU DRIVE		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	sequestration
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines

Facid:	317		
Facname:	CHESTER VALLEY		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, post

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Treatment obj:	organics removal	Treatment process:	aeration, packed tower
Facid:	321		
Facname:	GRAND OAK WELL		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Treatment obj:	disinfection	Treatment process:	chloramines
Facid:	323		
Facname:	HIGHLAND GLEN		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	324		
Facname:	HUNT COUNTRY		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	327		
Facname:	OAKBOURNE TANK & BST		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Facid:	329		
Facname:	POMONA PARK		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	ph adjustment, post
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Facid:	330		
Facname:	HOLLOW RUN WELL		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Treatment obj:	organics removal	Treatment process:	aeration, packed tower
Facid:	333		
Facname:	TREDYFFRIN WELL		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Treatment obj:	disinfection	Treatment process:	not reported
Facid:	335		
Facname:	NESHAMINY PLANT		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	ph adjustment
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	dechlorination	Treatment process:	reducing agent, sulfur dioxide
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, post
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	iron removal	Treatment process:	permanganate
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	particulate removal	Treatment process:	sedimentation
Treatment obj:	particulate removal	Treatment process:	flocculation
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered
Treatment obj:	taste / odor control	Treatment process:	peroxide
Facid:	337		
Facname:	CABOT WELL		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, bimetallic phosphate
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	338		
Facname:	HILLSIDE WELLS		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	disinfection	Treatment process:	hypochlorination, pre
Treatment obj:	disinfection	Treatment process:	not reported
Facid:	339		
Facname:	RIDLEY CREEK		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	corrosion control	Treatment process:	inhibitor, orthophosphate
Treatment obj:	dechlorination	Treatment process:	reducing agent, sulfur dioxide
Treatment obj:	disinfection	Treatment process:	chloramines
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection	Treatment process:	gaseous chlorination, pre
Treatment obj:	disinfection by-products control	Treatment process:	chloramines
Treatment obj:	disinfection by-products control	Treatment process:	lime - soda ash addition
Treatment obj:	other	Treatment process:	innovative
Treatment obj:	particulate removal	Treatment process:	lime - soda ash addition
Treatment obj:	particulate removal	Treatment process:	rapid mix
Treatment obj:	particulate removal	Treatment process:	flocculation
Treatment obj:	particulate removal	Treatment process:	filtration, rapid sand
Treatment obj:	particulate removal	Treatment process:	sedimentation
Treatment obj:	particulate removal	Treatment process:	coagulation
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered
Treatment obj:	taste / odor control	Treatment process:	activated carbon, powdered
Facid:	340		
Facname:	BUBBLING SPRINGS		
Facility type:	Treatment_plant	Activity code:	A
Treatment obj:	disinfection	Treatment process:	hypochlorination, post

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**Location Information:**

Name:	AQUA PA MAIN SYSTEM	Prmsrccd:	SW
Pwstypcd:	CWS		
Popsserved:	784939		
Add1:	762 LANCASTER AVE.		
Add2:	Not Reported		
City:	BRYN MAWR	State:	PA
Zip:	19010	Phone:	610-645-1082
Cityserv:	Not Reported	Cntyserv:	Montgomery
Stateserv:	PA	Zipserv:	Not Reported

**Enforcement Information:**

Violation id:	1341989	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1341989	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Public Notif received	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1341989	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1341989	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

**Enforcement Information:**

Violation id:	1341987	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

**Enforcement Information:**

Violation id:	1341987	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1341987	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Public Notif received	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1341987	Orig cd:	S
Enf fy:	2014	Enf act date:	11/12/2013
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	1203988	Orig cd:	S
Enf fy:	2012	Enf act date:	02/15/2012
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information:

Violation id:	1203988	Orig cd:	S
Enf fy:	2012	Enf act date:	04/18/2012
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	1203988	Orig cd:	S
Enf fy:	2012	Enf act date:	06/04/2012
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	1203988	Orig cd:	S
Enf fy:	2012	Enf act date:	02/15/2012
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1203952	Orig cd:	S
Enf fy:	2012	Enf act date:	06/04/2012
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	1203952	Orig cd:	S
Enf fy:	2012	Enf act date:	04/18/2012
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	1203952	Orig cd:	S
Enf fy:	2012	Enf act date:	02/13/2012
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1203952	Orig cd:	S
Enf fy:	2012	Enf act date:	02/13/2012
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	1137154	Orig cd:	S
Enf fy:	2012	Enf act date:	12/09/2011
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	1137154	Orig cd:	S
Enf fy:	2012	Enf act date:	12/09/2011
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1124113	Orig cd:	S
Enf fy:	2011	Enf act date:	08/04/2011
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1124113	Orig cd:	S
Enf fy:	2011	Enf act date:	08/19/2011
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information:

Violation id:	1124112	Orig cd:	S
Enf fy:	2011	Enf act date:	08/19/2011
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	1124112	Orig cd:	S
Enf fy:	2011	Enf act date:	08/04/2011
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2011	Enf act date:	04/19/2011
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2010	Enf act date:	05/20/2010
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2011	Enf act date:	04/19/2011
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2010	Enf act date:	05/20/2010
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2010	Enf act date:	05/20/2010
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	1012817	Orig cd:	S
Enf fy:	2010	Enf act date:	05/20/2010
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0916675	Orig cd:	S
Enf fy:	2009	Enf act date:	08/26/2009
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0916674	Orig cd:	S
Enf fy:	2009	Enf act date:	08/26/2009
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710047	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

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Enforcement Information:

Violation id:	0710047	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710047	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710047	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710046	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710046	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710046	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710046	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710045	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710045	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710045	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710045	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information:

Violation id:	0710044	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710044	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710044	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710044	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710043	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710043	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710043	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710043	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710042	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710042	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710042	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information:

Violation id:	0710042	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710041	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710041	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710041	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710041	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710040	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710040	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710040	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

Enforcement Information:

Violation id:	0710040	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710039	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

Enforcement Information:

Violation id:	0710039	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**Enforcement Information:**

Violation id:	0710039	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710039	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710038	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710038	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710038	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

**Enforcement Information:**

Violation id:	0710038	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710037	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Public Notif requested	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710037	Orig cd:	S
Enf fy:	2007	Enf act date:	02/06/2007
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710037	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Public Notif received	Enf act cat:	Informal

**Enforcement Information:**

Violation id:	0710037	Orig cd:	S
Enf fy:	2007	Enf act date:	03/15/2007
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving

**Violations Information:**

Violation id:	1341989	Orig cd:	S
State:	PA	Viol fy:	2013
Contamcd:	7500		
Contamnm:	Public Notice		
Viol code:	75		
Viol name:	PN Violation for NPDWR Violation		
Rule code:	410		
Rule name:	PN rule		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

State mcl:	Not Reported	Cmpbdt:	11/10/2013
Cmpedt:	Not Reported		
Violations Information:			
Violation id:	1341987	Orig cd:	S
State:	PA	Viol fy:	2013
Contamcd:	3100		
Contamnm:	Coliform (TCR)		
Viol code:	22		
Viol name:	MCL, Monthly (TCR)		
Rule code:	110		
Rule name:	TCR		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	09/01/2013
Cmpedt:	09/30/2013		
Violations Information:			
Violation id:	1203988	Orig cd:	S
State:	PA	Viol fy:	2011
Contamcd:	2039		
Contamnm:	Di(2-ethylhexyl) phthalate		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	10/01/2011
Cmpedt:	12/31/2011		
Violations Information:			
Violation id:	1203952	Orig cd:	S
State:	PA	Viol fy:	2011
Contamcd:	2039		
Contamnm:	Di(2-ethylhexyl) phthalate		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	10/01/2011
Cmpedt:	12/31/2011		
Violations Information:			
Violation id:	1137154	Orig cd:	S
State:	PA	Viol fy:	2011
Contamcd:	3100		
Contamnm:	Coliform (TCR)		
Viol code:	21		
Viol name:	MCL, Acute (TCR)		
Rule code:	110		
Rule name:	TCR		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	09/01/2011
Cmpedt:	09/30/2011		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**Violations Information:**

Violation id:	1124113	Orig cd:	S
State:	PA	Viol fy:	2011
Contamcd:	2946		
Contamnm:	ETHYLENE DIBROMIDE		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	04/01/2011
Cmpedt:	06/30/2011		

**Violations Information:**

Violation id:	1124112	Orig cd:	S
State:	PA	Viol fy:	2011
Contamcd:	2931		
Contamnm:	1,2-DIBROMO-3-CHLOROPROPANE		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	04/01/2011
Cmpedt:	06/30/2011		

**Violations Information:**

Violation id:	1012817	Orig cd:	S
State:	PA	Viol fy:	2010
Contamcd:	0300		
Contamnm:	IESWTR		
Viol code:	38		
Viol name:	Monitoring, Turbidity (Enhanced SWTR)		
Rule code:	122		
Rule name:	LT1 ESWTR		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	03/01/2010
Cmpedt:	03/31/2010		

**Violations Information:**

Violation id:	0916675	Orig cd:	S
State:	PA	Viol fy:	2009
Contamcd:	2950		
Contamnm:	TTHM		
Viol code:	27		
Viol name:	Monitoring and Reporting (DBP)		
Rule code:	210		
Rule name:	St1 DBP		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	04/01/2009
Cmpedt:	06/30/2009		

**Violations Information:**

Violation id:	0916674	Orig cd:	S
State:	PA	Viol fy:	2009
Contamcd:	2456		
Contamnm:	Total Haloacetic Acids (HAA5)		
Viol code:	27		
Viol name:	Monitoring and Reporting (DBP)		
Rule code:	210		
Rule name:	St1 DBP		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

State mcl:	Not Reported	Cmpbdt:	04/01/2009
Cmpedt:	06/30/2009		
Violations Information:			
Violation id:	0710047	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1085		
Contamnm:	Thallium, Total		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		
Violations Information:			
Violation id:	0710046	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1075		
Contamnm:	Beryllium, Total		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		
Violations Information:			
Violation id:	0710045	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1074		
Contamnm:	Antimony, Total		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		
Violations Information:			
Violation id:	0710044	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1045		
Contamnm:	Selenium		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**Violations Information:**

Violation id:	0710043	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1036		
Contamnm:	Nickel		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

**Violations Information:**

Violation id:	0710042	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1035		
Contamnm:	Mercury		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

**Violations Information:**

Violation id:	0710041	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1025		
Contamnm:	Fluoride		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

**Violations Information:**

Violation id:	0710040	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1024		
Contamnm:	CYANIDE		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

**Violations Information:**

Violation id:	0710039	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1020		
Contamnm:	Chromium		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		
Violations Information:			
Violation id:	0710038	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1015		
Contamm:	Cadmium		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

Violations Information:			
Violation id:	0710037	Orig cd:	S
State:	PA	Viol fy:	2006
Contamcd:	1010		
Contamm:	Barium		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	333		
Rule name:	Other IOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2006
Cmpedt:	12/31/2006		

PWS ID: PA1460073  
 Date Initiated: Not Reported      Date Deactivated: Not Reported  
 PWS Name: PHILADELPHIA SUBURBAN WATER CO  
 762 LANCASTER AVE.  
 BRYN MAWR, PA 19010

Addressee / Facility: Mailing  
 PHILADELPHIA SUBURBAN WATER CO  
 DR. THOMAS YOHE  
 762 LANCASTER AVE.  
 BRYN MAWR, PA 19010

Facility Latitude:	39 57 27.0000	Facility Longitude:	75 31 32.0000
Facility Latitude:	39 59 56.0000	Facility Longitude:	75 37 46.0000
Facility Latitude:	40 2 20.0000	Facility Longitude:	75 33 20.0000
Facility Latitude:	40 6 46.0000	Facility Longitude:	75 11 24.0000
Facility Latitude:	39 55 36.0000	Facility Longitude:	75 21 56.0000
Facility Latitude:	39 59 21.0000	Facility Longitude:	75 32 49.0000
Facility Latitude:	39 59 21.0000	Facility Longitude:	75 34 7.0000
Facility Latitude:	40 5 27.0000	Facility Longitude:	75 14 17.0000
Facility Latitude:	40 5 52.0000	Facility Longitude:	75 24 58.0000
Facility Latitude:	40 6 21.0000	Facility Longitude:	75 12 54.0000
Facility Latitude:	40 7 16.0000	Facility Longitude:	75 17 50.0000
Facility Latitude:	39 55 6.0000	Facility Longitude:	75 37 47.0000
Facility Latitude:	39 58 38.0000	Facility Longitude:	75 31 36.0000
Facility Latitude:	40 5 52.0000	Facility Longitude:	75 17 15.0000
Facility Latitude:	40 7 12.0000	Facility Longitude:	75 29 38.0000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility Latitude:	40 5 32.0000	Facility Longitude:	75 21 20.0000
Facility Latitude:	39 54 26.0000	Facility Longitude:	75 37 12.0000
Facility Latitude:	39 56 38.0000	Facility Longitude:	75 36 24.0000
Facility Latitude:	39 59 30.0000	Facility Longitude:	75 31 27.0000
Facility Latitude:	40 0 19.0000	Facility Longitude:	75 36 51.0000
Facility Latitude:	40 4 40.0000	Facility Longitude:	75 24 13.0000
Facility Latitude:	40 7 13.0000	Facility Longitude:	75 29 39.0000
Facility Latitude:	39 56 45.0000	Facility Longitude:	75 33 4.0000
Facility Latitude:	40 6 11.0000	Facility Longitude:	75 11 11.0000
Facility Latitude:	40 7 11.0000	Facility Longitude:	75 10 5.0000
Facility Latitude:	39 56 41.0000	Facility Longitude:	75 33 47.0000
Facility Latitude:	40 7 11.0000	Facility Longitude:	75 17 9.0000
Facility Latitude:	40 7 50.0000	Facility Longitude:	75 8 52.0000
Facility Latitude:	39 54 53.0000	Facility Longitude:	75 37 0.0000
Facility Latitude:	40 0 53.0000	Facility Longitude:	75 30 44.0000
Facility Latitude:	40 2 4.0000	Facility Longitude:	75 37 22.0000
Facility Latitude:	40 4 42.0000	Facility Longitude:	75 23 16.0000
Facility Latitude:	40 9 23.0000	Facility Longitude:	75 9 47.0000
City Served:	Not Reported		
Treatment Class:	Treated	Population:	783000

PWS currently has or had major violation(s) or enforcement: YES

### VIOLATIONS INFORMATION:

Violation ID:	9423603	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	STYRENE				
Vio. Awareness Date:	060194				

Violation ID:	9423602	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	ETHYLBENZENE				
Vio. Awareness Date:	060194				

Violation ID:	9423601	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TOLUENE				
Vio. Awareness Date:	060194				

Violation ID:	9423600	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	BENZENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423599	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	MONOCHLOROBENZENE (CHLOROBENZENE)				
Vio. Awareness Date:	060194				
Violation ID:	9423598	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TETRACHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423597	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,2-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423596	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423595	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROPROPANE				
Vio. Awareness Date:	060194				
Violation ID:	9423594	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CARBON TETRACHLORIDE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423593	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,1-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423592	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423591	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRANS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423590	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423589	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	P-DICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423588	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	O-DICHLOROBENZENE				
Vio. Awareness Date:	060194				



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423587	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	METHYLENE CHLORIDE (DICHLOROMETHANE)				
Vio. Awareness Date:	060194				
Violation ID:	9423586	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	XYLENES, TOTAL				
Vio. Awareness Date:	060194				
Violation ID:	9423585	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CIS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423584	Source ID:	131	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2,4-TRICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423523	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	STYRENE				
Vio. Awareness Date:	060194				
Violation ID:	9423522	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	ETHYLBENZENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423521	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TOLUENE				
Vio. Awareness Date:	060194				
Violation ID:	9423520	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	BENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423519	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	MONOCHLOROBENZENE (CHLOROBENZENE)				
Vio. Awareness Date:	060194				
Violation ID:	9423518	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TETRACHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423517	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,2-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423516	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRICHLOROETHYLENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423515	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROPROPANE				
Vio. Awareness Date:	060194				
Violation ID:	9423514	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CARBON TETRACHLORIDE				
Vio. Awareness Date:	060194				
Violation ID:	9423513	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,1-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423512	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423511	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRANS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423510	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423509	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	P-DICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423508	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	O-DICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423507	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	METHYLENE CHLORIDE (DICHLOROMETHANE)				
Vio. Awareness Date:	060194				
Violation ID:	9423506	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	XYLENES, TOTAL				
Vio. Awareness Date:	060194				
Violation ID:	9423505	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CIS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423504	Source ID:	110	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2,4-TRICHLOROBENZENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423462	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	STYRENE				
Vio. Awareness Date:	060194				
Violation ID:	9423461	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	ETHYLBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423460	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TOLUENE				
Vio. Awareness Date:	060194				
Violation ID:	9423459	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	BENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423458	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	MONOCHLOROBENZENE (CHLOROBENZENE)				
Vio. Awareness Date:	060194				
Violation ID:	9423457	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TETRACHLOROETHYLENE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423456	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,2-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423455	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423454	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROPROPANE				
Vio. Awareness Date:	060194				
Violation ID:	9423453	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CARBON TETRACHLORIDE				
Vio. Awareness Date:	060194				
Violation ID:	9423452	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1,1-TRICHLOROETHANE				
Vio. Awareness Date:	060194				
Violation ID:	9423451	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2-DICHLOROETHANE				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423450	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TRANS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423449	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,1-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				
Violation ID:	9423448	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	P-DICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423447	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	O-DICHLOROBENZENE				
Vio. Awareness Date:	060194				
Violation ID:	9423446	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	METHYLENE CHLORIDE (DICHLOROMETHANE)				
Vio. Awareness Date:	060194				
Violation ID:	9423445	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	XYLENES, TOTAL				
Vio. Awareness Date:	060194				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation ID:	9423444	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	CIS-1,2-DICHLOROETHYLENE				
Vio. Awareness Date:	060194				

Violation ID:	9423443	Source ID:	101	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/94	Vio. end Date:	03/31/94	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:	000		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	1,2,4-TRICHLOROBENZENE				
Vio. Awareness Date:	060194				

### ENFORCEMENT INFORMATION:

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
VioId:	0710037	Contaminant:	BARIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Violation/Reminder Notice		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
VioId:	0710037	Contaminant:	BARIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Public Notif Requested		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
VioId:	0710037	Contaminant:	BARIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
VioId:	0710037	Contaminant:	BARIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710038 Contaminant: CADMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710038 Contaminant: CADMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710038 Contaminant: CADMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Public Notif Received  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710038 Contaminant: CADMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Compliance Achieved  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710039 Contaminant: CHROMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Void: 0710039 Contaminant: CHROMIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710039	Contaminant:	CHROMIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710039	Contaminant:	CHROMIUM
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710040	Contaminant:	CYANIDE
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Violation/Reminder Notice		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710040	Contaminant:	CYANIDE
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Public Notif Requested		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710040	Contaminant:	CYANIDE
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Void:	0710040	Contaminant:	CYANIDE
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710041 Contaminant: FLUORIDE  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710041 Contaminant: FLUORIDE  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Public Notif Received  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710041 Contaminant: FLUORIDE  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710041 Contaminant: FLUORIDE  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Compliance Achieved  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710042 Contaminant: MERCURY  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioid: 0710042 Contaminant: MERCURY  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710042	Contaminant:	MERCURY
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710042	Contaminant:	MERCURY
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710043	Contaminant:	NICKEL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Violation/Reminder Notice		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710043	Contaminant:	NICKEL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Public Notif Requested		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710043	Contaminant:	NICKEL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vooid:	0710043	Contaminant:	NICKEL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710044 Contaminant: SELENIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710044 Contaminant: SELENIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710044 Contaminant: SELENIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Public Notif Received  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710044 Contaminant: SELENIUM  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Compliance Achieved  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710045 Contaminant: ANTIMONY, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710045 Contaminant: ANTIMONY, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710045 Contaminant: ANTIMONY, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Compliance Achieved  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710045 Contaminant: ANTIMONY, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Public Notif Received  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710046 Contaminant: BERYLLIUM, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Violation/Reminder Notice  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710046 Contaminant: BERYLLIUM, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 2/6/2007 0:00:00  
 Enf action: State Public Notif Requested  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710046 Contaminant: BERYLLIUM, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Public Notif Received  
 Violmeasur: Not Reported

Truedate: 03/31/2009 Pwsid: PA1460073  
 Pwsname: AQUA PA MAIN SYSTEM  
 Retpopsrvd: 820000 Pwstypecod: C  
 Vioiid: 0710046 Contaminant: BERYLLIUM, TOTAL  
 Viol. Type: 3  
 Complperbe: 1/1/2006 0:00:00  
 Complperen: 12/31/2006 0:00:00 Enfdate: 3/15/2007 0:00:00  
 Enf action: State Compliance Achieved  
 Violmeasur: Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vioid:	0710047	Contaminant:	THALLIUM, TOTAL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Violation/Reminder Notice		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vioid:	0710047	Contaminant:	THALLIUM, TOTAL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	2/6/2007 0:00:00
Enf action:	State Public Notif Requested		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vioid:	0710047	Contaminant:	THALLIUM, TOTAL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Public Notif Received		
Violmeasur:	Not Reported		
Truedate:	03/31/2009	Pwsid:	PA1460073
Pwsname:	AQUA PA MAIN SYSTEM		
Retpopsrvd:	820000	Pwstypecod:	C
Vioid:	0710047	Contaminant:	THALLIUM, TOTAL
Viol. Type:	3		
Complperbe:	1/1/2006 0:00:00		
Complperen:	12/31/2006 0:00:00	Enfdate:	3/15/2007 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	12/1/2005 0:00:00 - 12/31/2005 0:00:00		
Violation ID:	0603290		
Enforcement Date:	7/12/2006 0:00:00	Enf. Action:	State Consent Decree/Judgement
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	12/1/2005 0:00:00 - 12/31/2005 0:00:00		
Violation ID:	0603290		
Enforcement Date:	7/12/2006 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	5/1/2006 0:00:00 - 5/31/2006 0:00:00		
Violation ID:	0620761		
Enforcement Date:	7/12/2006 0:00:00	Enf. Action:	State Consent Decree/Judgement

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**ENFORCEMENT INFORMATION:**

System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	5/1/2006 0:00:00 - 5/31/2006 0:00:00		
Violation ID:	0620761		
Enforcement Date:	7/12/2006 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	BARIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710037		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	BARIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710037		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CADMIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710038		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CADMIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710038		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CHROMIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710039		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CHROMIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710039		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CYANIDE		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710040		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	CYANIDE		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710040		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**ENFORCEMENT INFORMATION:**

System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	FLUORIDE		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710041		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	FLUORIDE		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710041		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	MERCURY		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710042		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	MERCURY		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710042		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	NICKEL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710043		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	NICKEL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710043		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	SELENIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710044		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	SELENIUM		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710044		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	ANTIMONY, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710045		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

### ENFORCEMENT INFORMATION:

System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	ANTIMONY, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710045		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	BERYLLIUM, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710046		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	BERYLLIUM, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710046		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	THALLIUM, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710047		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Violation/Reminder Notice
System Name:	AQUA PA MAIN SYSTEM		
Violation Type:	3		
Contaminant:	THALLIUM, TOTAL		
Compliance Period:	1/1/2006 0:00:00 - 12/31/2006 0:00:00		
Violation ID:	0710047		
Enforcement Date:	2/6/2007 0:00:00	Enf. Action:	State Public Notif Requested
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,2,4-TRICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423443		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	CIS-1,2-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423444		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	XYLENES, TOTAL		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423445		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	METHYLENE CHLORIDE (DICHLOROMETHANE)		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423446		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

### ENFORCEMENT INFORMATION:

System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	O-DICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423447		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	P-DICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423448		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,1-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423449		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	TRANS-1,2-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423450		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,2-DICHLOROETHANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423451		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,1,1-TRICHLOROETHANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423452		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	CARBON TETRACHLORIDE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423453		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,2-DICHLOROPROPANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423454		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	TRICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423455		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

### ENFORCEMENT INFORMATION:

System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,1,2-TRICHLOROETHANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423456		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	TETRACHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423457		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	MONOCHLOROBENZENE (CHLOROBENZENE)		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423458		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	BENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423459		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	TOLUENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423460		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	ETHYLBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423461		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	STYRENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423462		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,2,4-TRICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423504		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	CIS-1,2-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423505		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

**ENFORCEMENT INFORMATION:**

System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	XYLENES, TOTAL		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423506		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	METHYLENE CHLORIDE (DICHLOROMETHANE)		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423507		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	O-DICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423508		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	P-DICHLOROBENZENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423509		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,1-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423510		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	TRANS-1,2-DICHLOROETHYLENE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423511		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,2-DICHLOROETHANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423512		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	PHILADELPHIA SUBURBAN WATE		
Violation Type:	Monitoring, Regular		
Contaminant:	1,1,1-TRICHLOROETHANE		
Compliance Period:	1994-01-01 - 1994-03-31		
Violation ID:	9423513		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

**CONTACT INFORMATION:**

Name:	AQUA PA MAIN SYSTEM	Population:	820000
Contact:	COLLEEN ARNOLD	Phone:	Not Reported
Address:	762 LANCASTER AVE.		
Address 2:	BRYN MAWR		
	PA, 19 610-6		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**B5**  
**ENE**  
**1/2 - 1 Mile**  
**Lower**

**PA WELLS      PASI50000027444**

Objectid:	27444	Depcounter:	-1
Siteid:	400614075111001	Transactioncount:	1
Localwellnumber:	MG 776	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	367CNSG	Topographycode:	S
Welldepth:	351	Elevation:	240
Elevmethodcode:	M	Accuracyofelevat:	10
Hydrologicunit:	02040203	Latlongaccuracyc:	S
Quadcode:	1844	Typeofsitecode:	W
Datecreated:	26-FEB-77	Dateupdated:	03-MAR-90
Datareliabilityc:	U	Sourcedepthdatac:	D
Municipalitycode:	46008		
Latituedd:	40.1038888888889		
Longituedd:	-75.1861111111111		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	01-DEC-57	Pagwis id:	27445
Sourcesitedataco:	1	Localpermit:	Not Reported
Latestowner:	27207	Driller scoordme:	0
Latestproduction:	24008	Latestwelluse:	27445
Site id:	PASI50000027444	GeneralCounter:	27445

**6**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**PA WELLS      PASI50000408032**

Objectid:	408032	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	40	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	29-AUG-12	Dateupdated:	Not Reported
Datareliabilityc:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	46008		
Latituedd:	40.10242		
Longituedd:	-75.21338		
Welladdress:	1680 Bethlehem Pike		
Wellzipcode:	19031	Depthtobedrock:	0
Bedrocknotreache:	1	Saltwaterzone:	0
Datedrilled:	24-JUL-12	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	Not Reported
Latestowner:	7471418	Driller scoordme:	1

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Latestproduction:	0	Latestwelluse:	7697793
Site id:	PASI50000408032	GeneralCounter:	501290

**7**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**PA WELLS      PASI50000027446**

Objectid:	27446	Depcounter:	-1
Siteid:	400623075124701	Transactioncount:	1
Localwellnumber:	MG 777	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	371ELBK	Topographycode:	S
Welldepth:	300	Elevation:	180
Elevmethodcode:	M	Accuracyofelevat:	10
Hydrologicunit:	02040203	Latlongaccuracyc:	S
Quadcode:	1844	Typeofsitecode:	W
Datecreated:	26-FEB-77	Dateupdated:	03-MAR-90
Datareliability:	U	Sourcedepthdatac:	D
Municipalitycode:	46008		
Latitudedd:	40.1063888888889		
Longitudedd:	-75.2130555555556		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	29-AUG-59	Pagwis id:	27447
Sourcesitedataco:	1	Localpermit:	Not Reported
Latestowner:	27209	Driller scoordme:	0
Latestproduction:	24010	Latestwelluse:	27447
Site id:	PASI50000027446	GeneralCounter:	27447

**C8**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**PA WELLS      PASI50000380974**

Objectid:	380974	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	130	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	09-DEC-10	Dateupdated:	Not Reported
Datareliability:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	46008		
Latitudedd:	40.09869		
Longitudedd:	-75.21475		
Welladdress:	1101 Bethlehem Pike		
Wellzipcode:	19031	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	18-OCT-10	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	W52003
Latestowner:	7461004	Driller scoordme:	1

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Latestproduction:	0	Latestwelluse:	7178317
Site id:	PASI50000380974	GeneralCounter:	474232

**C9**  
West  
1/2 - 1 Mile  
Lower

**PA WELLS      PASI50000380828**

Objectid:	380828	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	70	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	09-DEC-10	Dateupdated:	Not Reported
Datareliability:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	46008		
Latitudedd:	40.09869		
Longitudedd:	-75.21475		
Welladdress:	1101 Bethlehem Pike		
Wellzipcode:	19031	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	20-OCT-10	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	W52003
Latestowner:	7452784	Driller scoordme:	1
Latestproduction:	0	Latestwelluse:	7183200
Site id:	PASI50000380828	GeneralCounter:	474086

**C10**  
West  
1/2 - 1 Mile  
Lower

**PA WELLS      PASI50000380976**

Objectid:	380976	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	70	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	09-DEC-10	Dateupdated:	Not Reported
Datareliability:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	46008		
Latitudedd:	40.09869		
Longitudedd:	-75.21475		
Welladdress:	1101 Bethlem Pike		
Wellzipcode:	19031	Depthtobedrock:	0
Bedrocknotreache:	1	Saltwaterzone:	0
Datedrilled:	20-OCT-10	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	W52003
Latestowner:	7458816	Driller scoordme:	1



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Latestproduction:	4485981	Latestwelluse:	9831017
Site id:	PASI50000380976	GeneralCounter:	474234

**C11  
West  
1/2 - 1 Mile  
Lower**

**PA WELLS      PASI50000380975**

Objectid:	380975	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	091
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	130	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	09-DEC-10	Dateupdated:	Not Reported
Datareliabilityc:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	46008		
Latitudedd:	40.09869		
Longitudedd:	-75.21475		
Welladdress:	101 Bethlehem Pike		
Wellzipcode:	19031	Depthtobedrock:	0
Bedrocknotreache:	1	Saltwaterzone:	0
Datedrilled:	18-OCT-10	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	W52003
Latestowner:	7450890	Driller scoordme:	1
Latestproduction:	4481927	Latestwelluse:	7346303
Site id:	PASI50000380975	GeneralCounter:	474233

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: PA Radon

### Radon Test Results

Zipcode	Num Tests	Min pCi/L	Max pCi/L	Avg pCi/L
19038	5057	0	335.5	4.3

EPA Region 3 Statistical Summary Readings for Zip Code: 19038

Number of sites tested: 1003.

Maximum Radon Level: 146.2 pCi/L.

Minimum Radon Level: 0.1 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
777 (77.47%)	189 (18.84%)	23 (2.29%)	13 (1.30%)	0 (0.00%)	1 (0.10%)

Federal EPA Radon Zone for MONTGOMERY County: 1

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetlands Inventory

Source: Pennsylvania Spatial Data Access

Telephone: 610-344-6105

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Pennsylvania Public Water Supply Wells

Source: Pennsylvania Department of Environmental Resources Bureau of Water Supply

Telephone: 717-787-5017

#### Pennsylvania Groundwater Information System

Source: Department of Conservation and Natural Resources

Telephone: 717-702-2045

## OTHER STATE DATABASE INFORMATION

### Pennsylvania Oil and Gas Locations

Source: Pennsylvania Department of Environmental Protection

Telephone: 814-863-0104

An Oil and Gas Location is a DEP primary facility type related to the Oil & Gas Program. The sub-facility types related to Oil and Gas that are included in this layer are: Land Application -- An area where drilling cuttings or waste are disposed by land application; Well-- A well associated with oil and/or gas production; Pit -- An approved pit that is used for storage of oil and gas well fluids. Some sub facility types are not included in this layer due to security policies.

### RADON

#### State Database: PA Radon

Source: Department of Environmental Protection

Telephone: 717-783-3594

Radon Test Results Statistics by Zip Code

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Region 3 Statistical Summary Readings

Source: Region 3 EPA

Telephone: 215-814-2082

Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

### OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

### STREET AND ADDRESS INFORMATION

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**FORM FP-001 - CERTIFICATION OF CLEAN FILL**

Prior to completing this form and signing this certification, please review the entire Management of Fill policy (#258-2182-773), including the certification requirements. Please note that historic fill, as defined in the Management of Fill policy, may meet the definition of clean fill if the material is limited to uncontaminated soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such.

**Instructions:** Sections 1 and 2 of this form must be completed by the person making the determination of clean fill at the site of origin. Section 3 must be completed by the person using the material as clean fill. Both the person determining clean fill and the user of the clean fill are responsible for maintaining copies of this completed form on site for a period of five (5) years for Department inspection.

**Section 1: Person Determining Clean Fill**

Name (Print): David Van Keuren Title: Env. Project Manager Date: 6/9/17

Company Name: Earth Engineering inc.

Street Address: 115 West Germantown Pike City: E. Norriton State: PA Zip Code: 19401

Telephone Number: (610) 277-0880 E-mail Address: davev@earthengineering.com

**Clean Fill Material originated on the following property:**

Site Name: Springfield High School Stadium

Street Address: 1801 Papermill Road City: Glenside State: PA Zip Code: 19038

**Section 2: Site Characterization**

**Check the following that applies:**

- A. IF the site of origin for the fill material has undergone or is undergoing cleanup or remediation pursuant to a local state or federal regulatory program that requires site characterization, provide the following information along with a copy of the entire site characterization and laboratory analysis for the material to be used as clean fill.**

Name of local, state, or federal agency: \_\_\_\_\_

Identification number assigned to the project: \_\_\_\_\_

Name of the local, state, or federal contact person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

Name of the Laboratory that conducted the analysis: \_\_\_\_\_

Laboratory Accreditation Number: \_\_\_\_\_

- B. IF the material proposed to be used as clean fill has otherwise been subject to analytical testing or other procedure identified in the definition of "environmental due diligence" contained in the Management of Fill policy, provide or attach the following:**

Copies of **ALL** lab analytical testing performed as part of environmental due diligence (see Management of Fill policy, #258-2182-773).

Name of the Laboratory that conducted the analysis: \_\_\_\_\_

Laboratory Accreditation Number: \_\_\_\_\_

C. IF the proposed material to be used as clean fill was subject to environmental due diligence procedures as defined in the Management of Fill policy other than those listed in A and B, describe those procedures.

Historic development and use review, and environmental database review (ESA) \_\_\_\_\_

I, the undersigned, certify under penalty of law (18 Pa. C.S.A. §4904) that the information provided in Sections 1 and 2 of this form is true and correct to the best of my knowledge, information and belief.

Signature: David VanBuren

**Section 3: Person Receiving or Placing Clean Fill**

**Name and address of person completing this form:**

Name (Print): \_\_\_\_\_ Date: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

**Fill material that has been determined to be clean fill will be placed on the following property solely for property improvement or construction purposes:**

Property Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Current Owner of Property: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

**The quantity of clean fill to be placed on the property is:**

<3,000 cubic yards       3,000 cubic yards to 20,000 cubic yards       >20,000 cubic yards

I, the undersigned, certify under penalty of law (18 Pa. C.S.A. §4904) that the information provided is true and correct to the best of my knowledge, information and belief.

Signature: \_\_\_\_\_

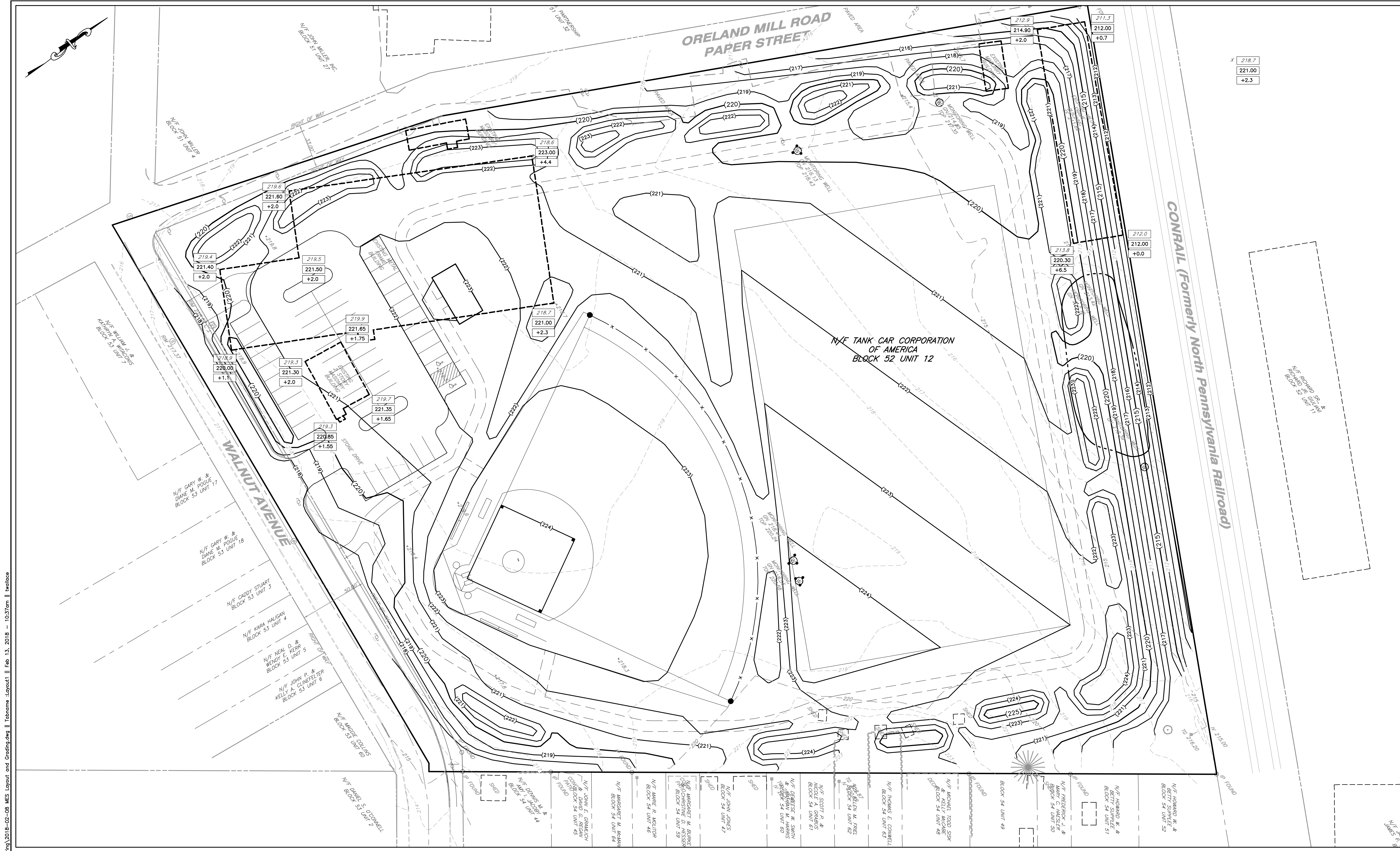
\* \* \* \* \*

**Prior to placement of the clean fill, the owner of the property receiving fill material shall provide a copy of this completed form and attachments to the DEP Regional Office serving the county in which the receiving site is located. If a property receives fill from multiple sources, a separate Form FP-001 is required for each source.**

# **APPENDIX C**

## Redevelopment Concept Plan





P:\2015\1540137\DWG\Engineering\2018-02-08\_MES\_Layout and Grading.dwg | Tabname: Layout1 | Feb. 13, 2018 - 10:37am | hellice

Written dimensions shall have priority over scaled dimensions. All dimensions, elevations, spot heights, and conditions shall be verified by the Contractor prior to construction, and the Owner and Boucher & James, Inc. shall be notified of any discrepancies with the information shown on drawings.  
 Only those plans incorporating the raised or red ink professional seal shall be considered official and relied upon. All ideas, designs and arrangements presented hereon were developed for use on, and in connection with, the specified project being prepared for the Owner. These plans may not be reproduced or altered without the expressed written permission of Boucher & James, Inc.  
 Information shown on this plan represents professional services expressing ideas and designs developed, owned and copyrighted by Boucher & James, Inc. Reproduction of this plan without written approval of Boucher & James, Inc. is not permitted. Unauthorized alteration of a copy of this plan for any purpose will be considered a violation of the copyright laws and a theft of corporate assets. Unauthorized alteration of the plan will be considered a violation of the professional code of ethics. Any violation will be prosecuted to the fullest extent of current statutes.

REVISIONS:		DATE		DESCRIPTION	

**PROJECT:**  
**TANK CAR SITE PARK**  
 SPRINGFIELD TOWNSHIP  
 MONTGOMERY COUNTY, PENNSYLVANIA  
  
**APPLICANT:**  
**SPRINGFIELD TOWNSHIP**  
 1510 PAPER MILL ROAD  
 WYNDMOOR, PA 19038

**JOB NO.:** 1540137  
**TITLE:** TANK CAR SITE - SKETCH PLAN  
**DRAWN BY:** MES  
**CHECKED BY:** MWE  
**SCALE:** 1" = 30'  
**PLAN STATUS:** PROJECT NAME:

**Boucher & James, Inc.**  
 CONSULTING ENGINEERS  
 DOYLESTOWN • STROUDSBURG • LEHIGH VALLEY  
 CORPORATE HEADQUARTERS: 1456 FERRY RD, BUILDING 500, DOYLESTOWN, PA. 18901  
 VOICE: (215) 345-9400 FAX: (215) 345-9401  
**TANK CAR SITE PARK**

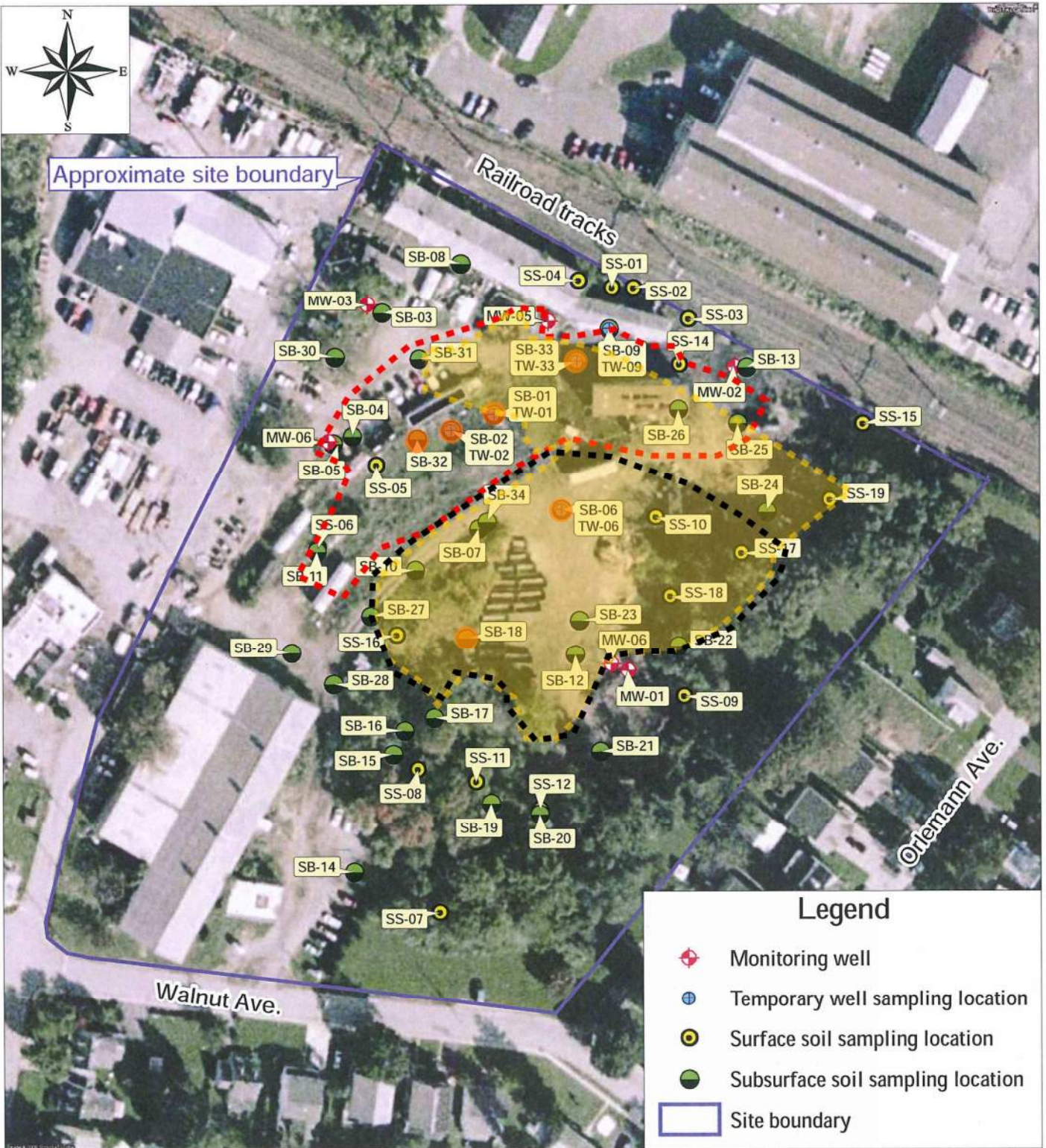
**SHEET**  
**1 OF 1**  
**FEBRUARY 8, 2018**

# **APPENDIX D**

## **USEPA Files**



VOCs Above Current Standards



Source: Modified from DigitalGlobe aerial photography, October 2006.



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

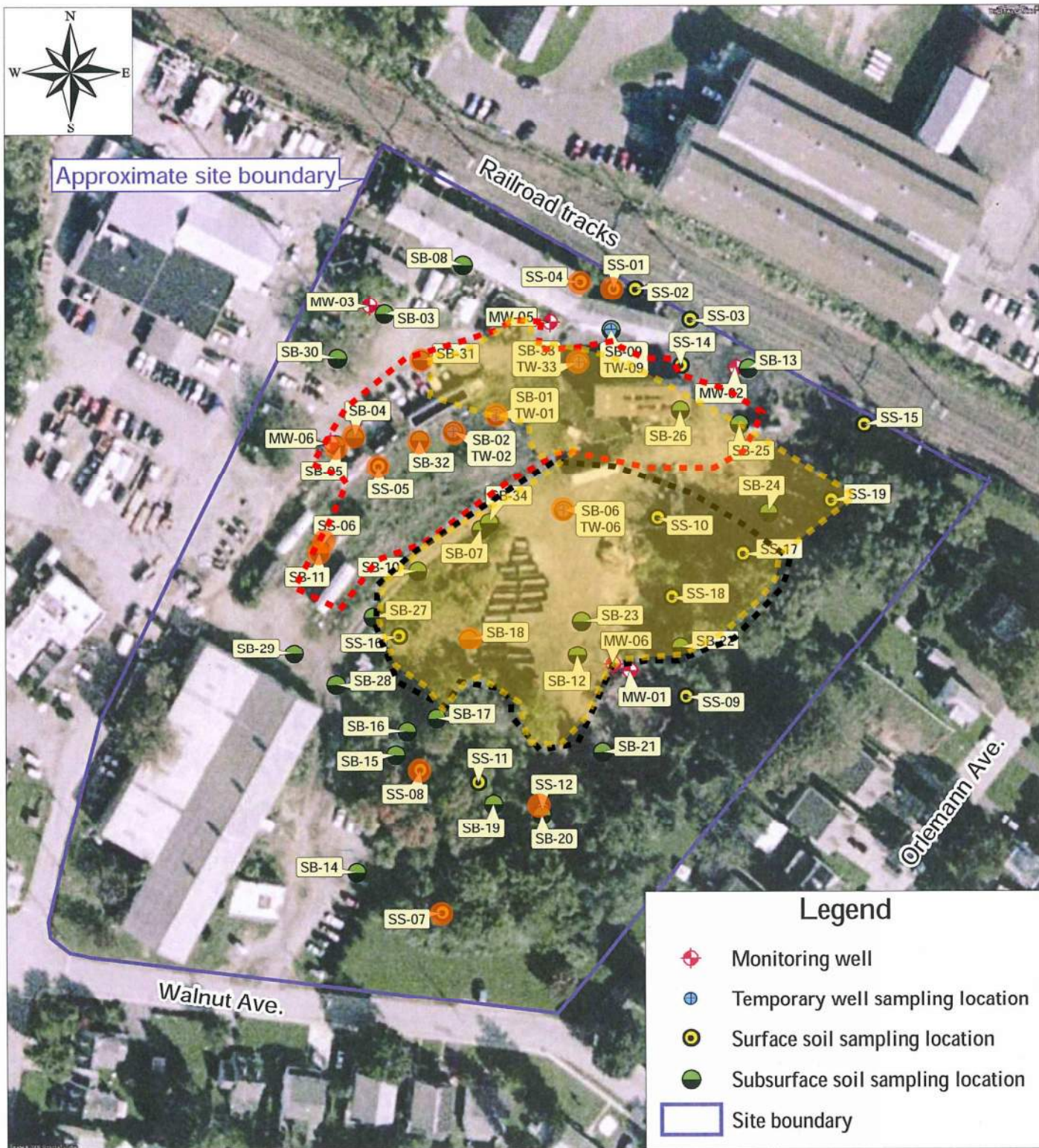
Figure 3  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.





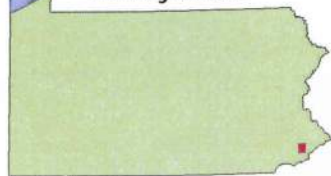


Source: Modified from DigitalGlobe aerial photography, October 2006.



Approximate Site Location = ■

Pennsylvania



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

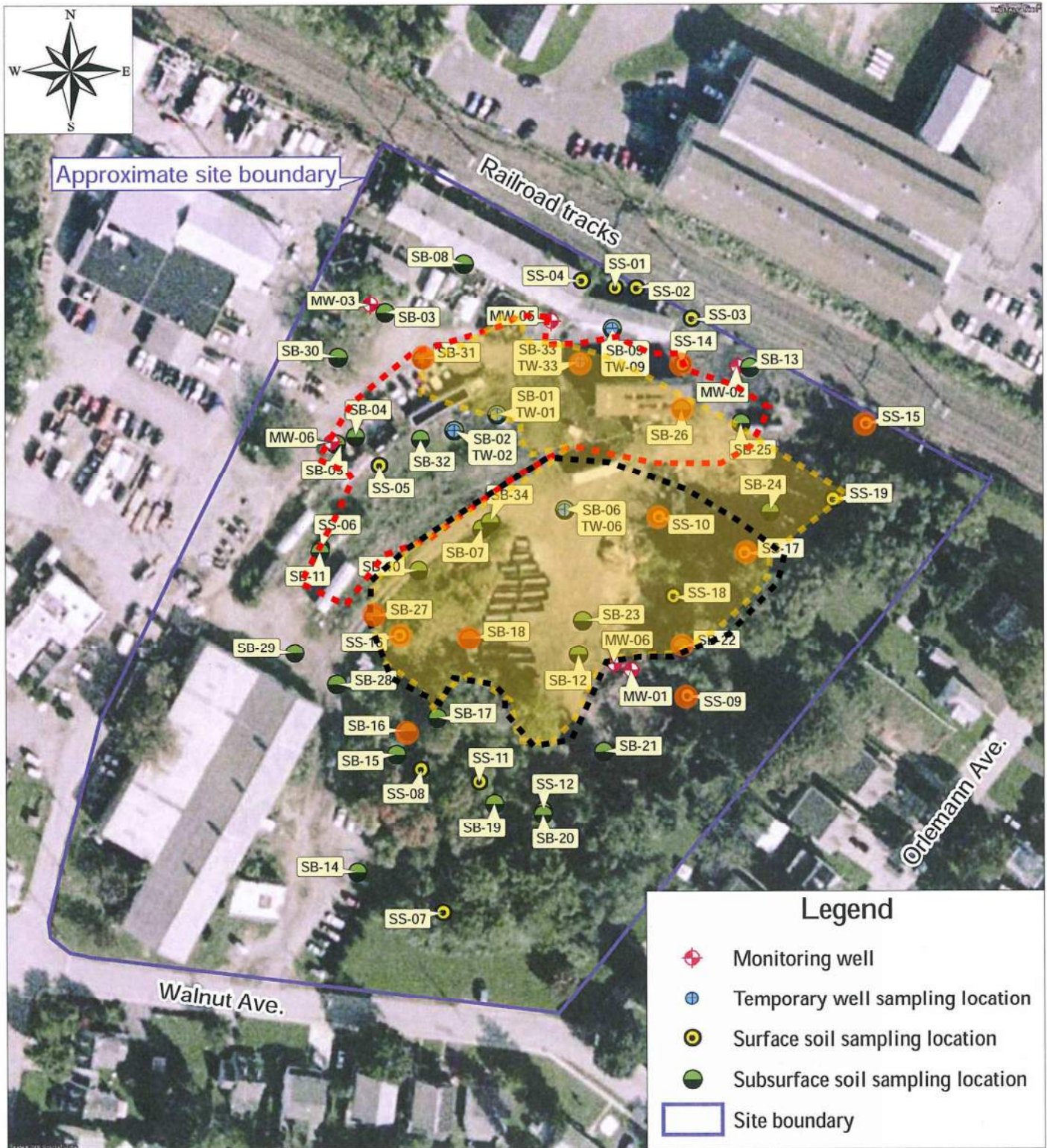
Figure 3  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.



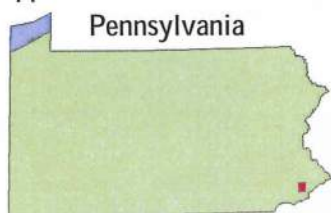




Source: Modified from DigitalGlobe aerial photography, October 2006.



Approximate Site Location = ■



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

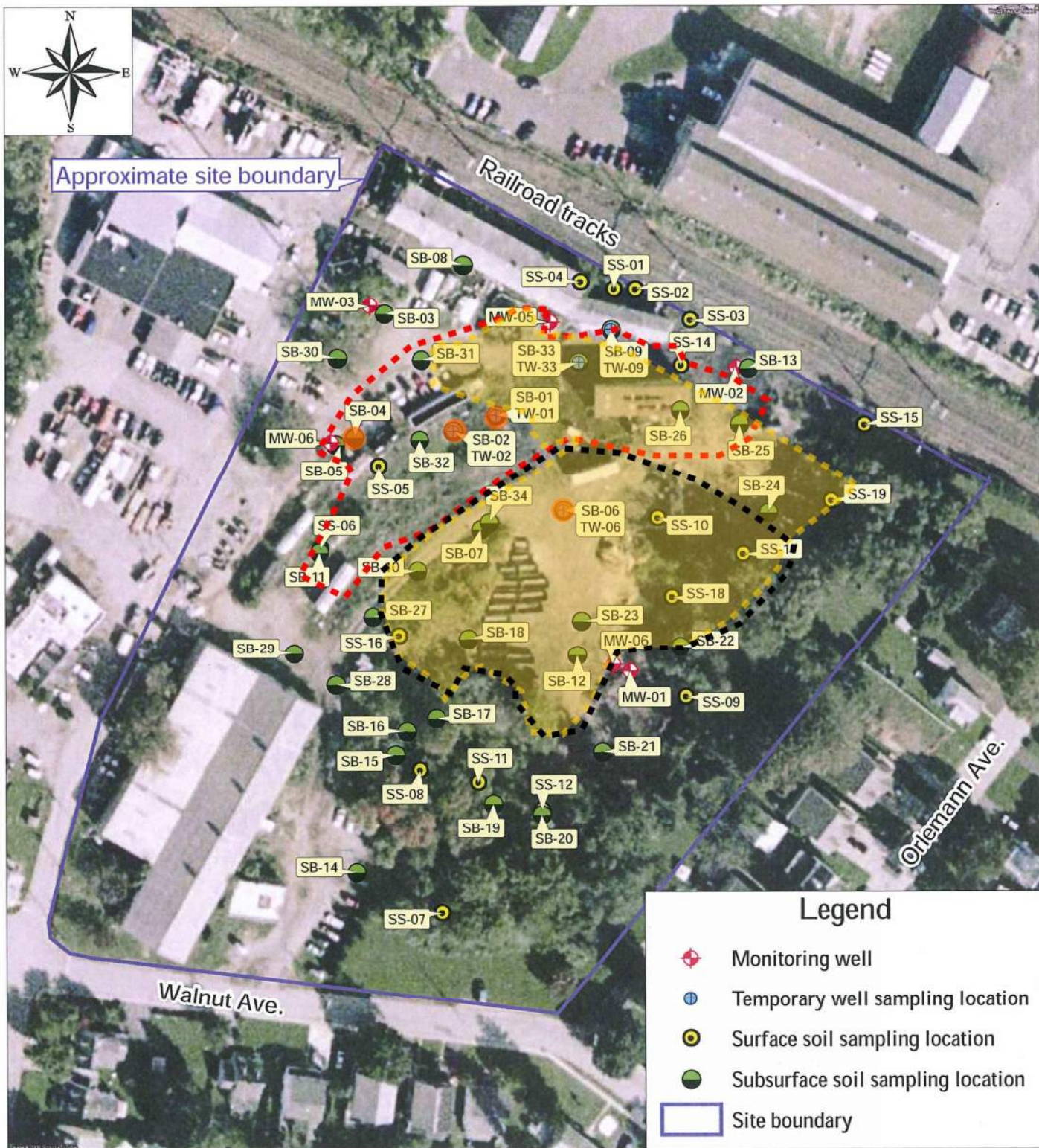
Figure 3  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.







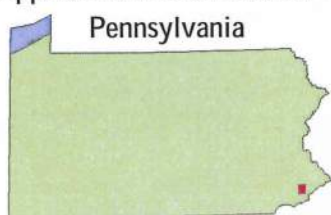
**Legend**

- Monitoring well
- Temporary well sampling location
- Surface soil sampling location
- Subsurface soil sampling location
- Site boundary

Source: Modified from DigitalGlobe aerial photography, October 2006.



Approximate Site Location =



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

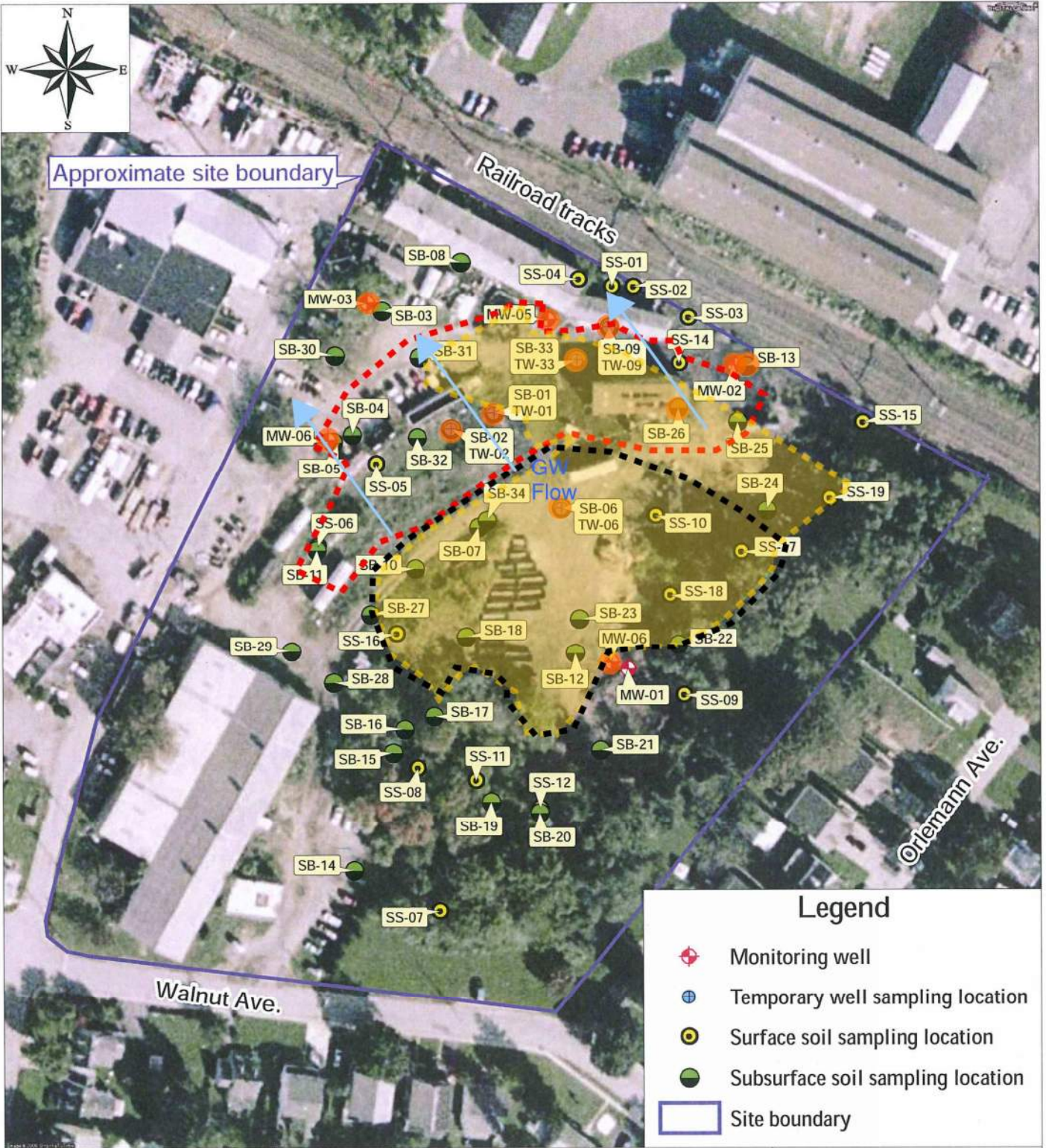
**Figure 3**  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.





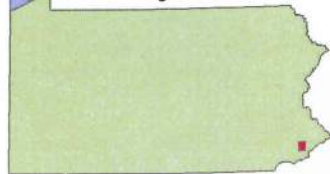


Source: Modified from DigitalGlobe aerial photography, October 2006.



Approximate Site Location = ■

Pennsylvania



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

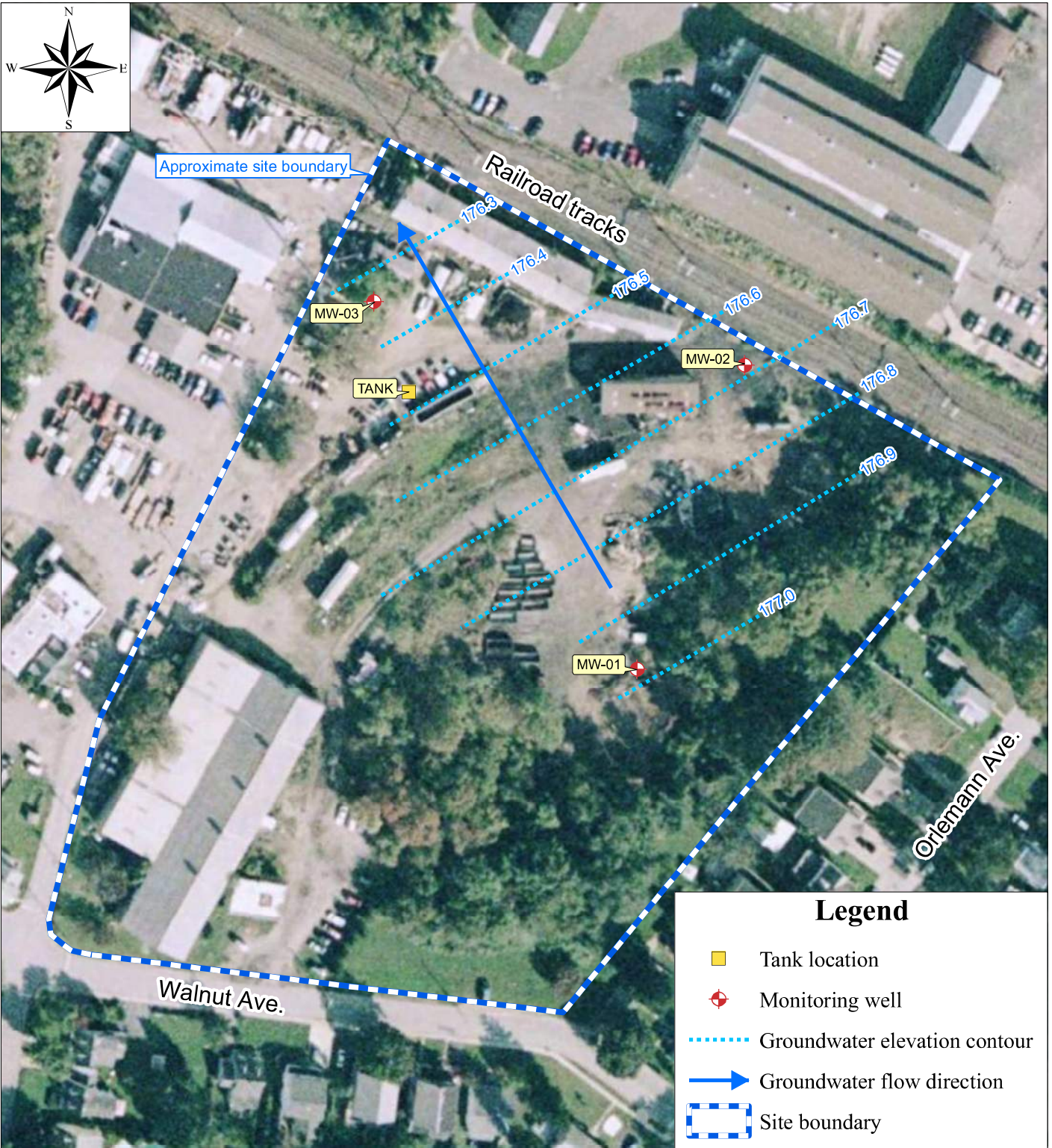
Figure 3  
November 2008, April and June 2009 Sampling Location Map

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on June 23, 2009  
by D. Call, Tetra Tech EM Inc.










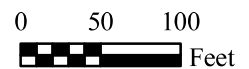


Source: Modified from DigitalGlobe aerial photography, October 2006.

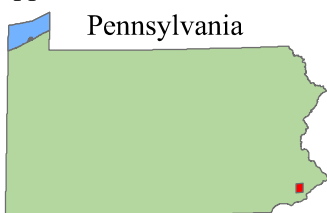
Note: Groundwater elevation (in feet) is given next to each groundwater contour.

**Legend**

-  Tank location
-  Monitoring well
-  Groundwater elevation contour
-  Groundwater flow direction
-  Site boundary



Approximate Site Location = 



Tank Car Corp. of America  
Oreland, Montgomery County, Pennsylvania

**Monitoring Well Potentionmetric Map**

TDD No. E33-020-08-09-001  
EPA Contract No. EP-S3-05-02

Map created on December 23, 2008  
by D. Call, Tetra Tech EM Inc.







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : December 22, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung *KCT*  
Region III ESAT RPO (3EA20)

TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the inorganic data validation report for the Tank Car Corporation of America site (Case # 38062; SDG # MC05Q6). This report has been completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Joshua Cope (TTEMI)

TO File #: 0014

TDF#: 12038

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Telephone 410-305-3037 Facsimile 410-305-3597



**DATE:** December 17, 2008

**SUBJECT:** Inorganic Data Validation (IM2 Level)  
Case: 38062  
SDG: MC05Q6  
Site: Tank Car Corporation of America

**FROM:** Donald M. Brown<sup>DMB</sup>  
Inorganic Data Reviewer

Mahboobeh Mecanic<sup>MM</sup>  
Senior Oversight Chemist

**TO:** Khin-Cho Thuang  
ESAT Region 3 Project Officer

## OVERVIEW

Case 38062, Sample Delivery Group (SDG) MC05Q6, consisted of thirteen (13) soil samples analyzed for total metals by Bonner Analytical Testing Company (BONNER). The sample set included one (1) field duplicate pair. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

## SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the laboratory blanks as well as the matrix spike, laboratory control sample and ICP serial dilution analyses. Details of these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Forms (DSFs).

## MINOR PROBLEMS

Continuing calibration blanks (CCBs) had reported results greater than the Method Detection Limits (MDLs) for antimony (Sb), mercury (Hg) and selenium (Se). Positive results for these analytes in affected samples which are less than or equal to five times ( $\leq 5X$ ) the blank concentrations may be biased high and have been qualified "B" on the DSFs.

Continuing calibration blanks (CCBs) had negative results greater than the absolute value of the MDL for thallium (Tl). Quantitation limits for this analyte in affected samples may be biased low and have been qualified "UL" on the DSFs.

The matrix spike recovery was high (>125%) for nickel (Ni). Positive results for this analyte in all samples may be biased high. The "K" qualifier for this outlier has been superseded by "J" on the DSFs.

Matrix spike recoveries were low (<75% but >30%) for Sb, arsenic (As), cadmium (Cd), Se and Tl. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for these analytes in affected samples may be biased low and have been qualified "L" on the DSFs unless superseded by "B" or "J". Quantitation limits for these analytes in affected samples may be biased low and have been qualified "UL" on the DSFs.

The solid laboratory control sample (LCS) result was outside the lower control limit for barium (Ba). Positive results for this analyte in all samples may be biased low. The "L" qualifier for this outlier has been superseded by "J" on the DSFs.

Percent differences (%Ds) in the ICP serial dilution analysis were outside the control limit (>10%) for aluminum (Al), Ba, calcium (Ca), cobalt (Co), copper (Cu), lead (Pb), magnesium (Mg), Ni, potassium (K) and sodium (Na). Positive results for these analytes in all samples are estimated due to possible matrix interferences and have been qualified "J" on the DSFs.

## **NOTES**

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSFs.

A CRQL check standard recovery in CRI01 was outside control limits (70-130%) for Hg. The laboratory immediately reanalyzed this CRQL check standard as CRI02, which was within the control limits. No data were qualified based on this finding.

CRQL check standard recoveries in CRI02 and CRI04 were outside the upper control limit (>130%) for iron (Fe). All samples in this SDG had positive results greater than two times the CRQL (>2XCRQL) for this analyte. Therefore, no data were qualified based on these outliers.

The solid LCS result was below the MDL for K; however, the lower control limit for this analyte is zero. Therefore, no data were qualified based on this finding.

Reported results for field duplicate pair MC05R6/MC05R8 were within 35% RPD,  $\pm 2XCRQL$  for all analytes except As.

Post-digestion spike recoveries were outside the control limits (75-125%) for Sb, Se and Tl. In addition, no post-digestion spike was analyzed for Ni because the laboratory failed to flag this outlier. No data are qualified based on these findings.

The following samples were reanalyzed at dilutions in order to bring concentrations of the analytes listed below within the linear range of the instrument. Results for these analytes in these samples were reported from the diluted analyses and annotated with a “+” on the DSFs.

<u>Analyte</u>	<u>Dilution</u>	<u>Sample ID</u>
Ba	4X	MC05Q6, MC05R9
beryllium (Be)	3X	MC05R4, MC05R5
Fe	3X	MC05Q8, MC05R0
	4X	MC05Q6, MC05R9
	5X	MC05R3, MC05R6, MC05R8
	6X	MC05R4
	8X	MC05R5
manganese (Mn)	3X	MC05Q8, MC05R4, MC05R5
	5X	MC05R6, MC05R8
Ni	3X	MC05Q8, MC05R4, MC05R5
zinc (Zn)	3X	MC05R0
	10X	MC05Q6, MC05Q8, MC05R3, MC05R6, MC05R8, MC05R9
	15X	MC05R4, MC05R5

Data for Case 38062, SDG MC05Q6, were reviewed in accordance with National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

## **ATTACHMENTS**

### **INFORMATION REGARDING REPORT CONTENT**

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY RECORDS
APPENDIX D	LABORATORY CASE NARRATIVE

DCN: 38062.MC05Q6IM2.doc

**TABLE 1A  
SUMMARY OF QUALIFIERS ON DATA SUMMARY  
FORM AFTER DATA VALIDATION**

Case 38062, SDG MC05Q6

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON-DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Al	All Samples	J			ISD (15%)
Sb	MC05R1, MC05R3, MC05R6, MC05R7, MC05R8	B		High	CCB (2.579 J $\mu\text{g/L}$ ) MSL (37%)
	MC05Q6, MC05Q8, MC05Q9, MC05R0, MC05R2, MC05R4, MC05R5, MC05R9		UL	Low	MSL (37%)
As	All Samples	L		Low	MSL (48%)
Ba	All Samples	J			ISD (25%) LCSL (9%)
Cd	MC05R0, MC05R2, MC05R7	J			>MDL<CRQL MSL (73%)
	All Samples Except MC05R0, MC05R2, MC05R7	L		Low	MSL (73%)
Ca	All Samples	J			ISD (19%)
Co	All Samples	J			ISD (18%)
Cu	All Samples	J			ISD (12%)
Pb	All Samples	J			ISD (19%)
Mg	All Samples	J			ISD (20%)

\* See explanation of comments in Table 1B

**TABLE 1A  
SUMMARY OF QUALIFIERS ON DATA SUMMARY  
FORM AFTER DATA VALIDATION**

Case 38062, SDG MC05Q6

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON-DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Hg	All Samples Except MC05Q6, MC05Q9, MC05R0, MC05R1	B		High	CCB (0.095 J µg/L)
Ni	All Samples	J			ISD (19%) MSH (343%)
K	All Samples	J			ISD (13%)
Se	MC05R2	B		High	CCB (4.430 J µg/L) MSL (68%)
	MC05R7	B		High	CCB (4.549 J µg/L) MSL (68%)
	MC05Q6, MC05Q9, MC05R0, MC05R1, MC05R6, MC05R8	J			>MDL<CRQL MSL (68%)
	MC05Q8, MC05R3, MC05R4, MC05R5, MC05R9	L		Low	MSL (68%)
Na	All Samples	J			ISD (15%)
Tl	MC05Q6, MC05Q8, MC05Q9, MC05R0, MC05R9		UL	Low	CBN (-1.187 J µg/L) MSL (54%)
	MC05R5, MC05R6, MC05R7, MC05R8		UL	Low	CBN (-1.088 J µg/L) MSL (54%)
	MC05R1, MC05R2, MC05R3, MC05R4		UL	Low	MSL (54%)

\* See explanation of comments in Table 1B

**TABLE 1B**  
**CODES USED IN COMMENTS COLUMN**

ISD =	Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit (>10%) [%Ds are in parenthesis]. Positive results are estimated.
CCB =	Continuing calibration blanks had results >MDLs [results are in parenthesis]. Positive results which are ≤5X the blank concentrations may be biased high.
MSL =	Matrix spike recoveries were low (<75% but >30%) [% recoveries are in parenthesis]. Positive results and quantitation limits may be biased low.
LCSL =	Solid laboratory control sample result was outside the lower control limit [% recovery is in parenthesis]. Positive results may be biased low.
>MDL = <CRQL	Reported results are greater than MDLs but less than CRQLs and are considered estimated.
MSH =	Matrix spike recovery was high (>125%) [% recovery is in parenthesis]. Positive results may be biased high.
CBN =	Continuing calibration blanks had negative results with absolute values >MDLs [results are in parenthesis]. Quantitation limits may be biased low.

## **Appendix A**

### **Glossary of Data Qualifier Codes**



## **GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### **OTHER CODES**

Q = No analytical result.

## **Appendix B**

### Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Case #: 38062  
 Site :  
 Lab. :

SDG : MC05Q6  
 TANK CAR CORPORATION OF AMERICA  
 BONNER

Number of Soil Samples : 13  
 Number of Water Samples : 0

Sample Number :	MC05Q6	MC05Q8	MC05Q9	MC05R0	MC05R1
Sampling Location :	TCCA-SS-01	TCCA-SS-03	TCCA-SS-04	TCCA-SS-05	TCCA-SS-06
Matrix :	Soil	Soil	Soil	Soil	Soil
Units :	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008
Time Sampled :	10:16	10:25	10:31	10:43	10:48
%Solids :	89.0	95.3	59.6	84.1	77.8
Dilution Factor :	1.0 / 4.0 / 10	1.0 / 3.0 / 10	1.0	1.0 / 3.0	1.0

ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	17600	J	28000	J	13000	J	15700	J	9290	J
ANTIMONY	6		UL		UL		UL		UL	0.64	B
ARSENIC	1	10.9	L	3.1	L	15.4	L	17.5	L	30.6	L
BARIUM	20	3630+	J	596	J	375	J	354	J	203	J
BERYLLIUM	0.5	46.0		61.2		8.5		46.4		16.6	
CADMIUM	0.5	2.9	L	1.0	L	3.3	L	0.55	J	3.9	L
CALCIUM	500	28800	J	30600	J	35900	J	18300	J	37600	J
CHROMIUM	1	698		127		132		43.6		65.0	
COBALT	5	133	J	98.2	J	28.5	J	52.2	J	20.7	J
COPPER	2.5	2670	J	4850	J	1010	J	2010	J	820	J
IRON	10	94600+		124000+		30800		70400+		51100	
*LEAD	1	1870	J	1980	J	681	J	914	J	487	J
MAGNESIUM	500	4630	J	6620	J	19400	J	3860	J	15500	J
MANGANESE	1.5	1430		2490+		715		1170		744	
MERCURY	0.1	1.0		0.15	B	0.98		0.78		1.2	
NICKEL	4	286	J	760+	J	115	J	261	J	90.0	J
POTASSIUM	500	1690	J	2720	J	1750	J	1560	J	1510	J
SELENIUM	3.5	3.6	J	4.6	L	4.0	J	3.9	J	3.5	J
SILVER	1	1.6		1.6		0.52	J	0.81	J	0.66	J
SODIUM	500	2330	J	3730	J	477	J	2050	J	731	J
THALLIUM	2.5		UL		UL		UL		UL		UL
VANADIUM	5	29.0		36.9		39.6		20.2		23.2	
ZINC	6	20500+		33000+		4450		13700+		4240	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

Revised 09/99

+ = Result reported from diluted analysis. See dilution table in narrative.

DATA SUMMARY FORM: INORGANIC

Case #: 38062                      SDG : MC05Q6  
 Site :                                TANK CAR CORPORATION OF AMERICA  
 Lab. :                                BONNER

Sample Number :	MC05R2	MC05R3	MC05R4	MC05R5	MC05R6						
Sampling Location :	TCCA-SS-07	TCCA-SS-08	TCCA-SS-09	TCCA-SS-10	TCCA-SS-11						
Field QC :					Dup of MC05R8						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	10:59	11:05	11:11	11:17	11:29						
%Solids :	66.7	96.2	94.2	95.7	98.9						
Dilution Factor :	1.0	1.0 / 5.0 / 10	1.0 / 3.0 / 6.0 / 15	1.0 / 3.0 / 8.0 / 15	1.0 / 5.0 / 10						
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	6670	J	30800	J	28000	J	27300	J	31000	J
ANTIMONY	6		UL	0.94	B		UL		UL	0.82	B
ARSENIC	1	3.5	L	5.0	L	1.5	L	7.8	L	16.8	L
BARIUM	20	122	J	549	J	714	J	663	J	563	J
BERYLLIUM	0.5	14.2		51.9		133+		149+		53.0	
CADMIUM	0.5	0.51	J	0.65	L	1.5	L	1.7	L	0.73	L
CALCIUM	500	16200	J	26100	J	34500	J	40200	J	27900	J
CHROMIUM	1	25.2		131		263		196		156	
COBALT	5	14.9	J	52.3	J	140	J	128	J	59.2	J
COPPER	2.5	396	J	2770	J	5160	J	5440	J	3680	J
IRON	10	19600		135000+		167000+		175000+		147000+	
*LEAD	1	366	J	925	J	1930	J	1880	J	1140	J
MAGNESIUM	500	6890	J	5550	J	6010	J	6460	J	6050	J
MANGANESE	1.5	702		1940		3010+		3420+		2570+	
MERCURY	0.1	0.14	B	0.068	B	0.064	B	0.16	B	0.091	B
NICKEL	4	28.9	J	232	J	1070+	J	790+	J	307	J
POTASSIUM	500	653	J	3330	J	2130	J	2020	J	3260	J
SELENIUM	3.5	2.0	B	4.3	L	7.0	L	6.3	L	3.5	J
SILVER	1	0.53	J	0.83	J	2.6		2.3		1.1	
SODIUM	500	588	J	2960	J	4670	J	5120	J	3380	J
THALLIUM	2.5		UL		UL		UL		UL		UL
VANADIUM	5	14.3		40.7		37.9		33.0		39.3	
ZINC	6	3450		27200+		37500+		42300+		30900+	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

Revised 09/99

+ = Result reported from diluted analysis. See dilution table in narrative.

Case #: 38062

SDG : MC05Q6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

BONNER

Sample Number :		MC05R7	MC05R8	MC05R9							
Sampling Location :		TCCA-SS-12	TCCA-SS-13	TCCA-SS-02							
Field QC :			Dup of MC05R6								
Matrix :		Soil	Soil	Soil							
Units :		mg/Kg	mg/Kg	mg/Kg							
Date Sampled :		11/18/2008	11/18/2008	11/18/2008							
Time Sampled :		11:38	11:22	10:20							
%Solids :		57.6	98.3	95.1							
Dilution Factor :		1.0	1.0 / 5.0 / 10	1.0 / 4.0 / 10							
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	8030	J	31000	J	16400	J				
ANTIMONY	6	2.2	B	1.0	B		UL				
ARSENIC	1	5.0	L	33.7	L	9.3	L				
BARIUM	20	90.4	J	608	J	4400+	J				
BERYLLIUM	0.5	1.3		50.5		61.9					
CADMIUM	0.5	0.48	J	0.77	L	1.4	L				
CALCIUM	500	5080	J	26200	J	31900	J				
CHROMIUM	1	31.8		140		224					
COBALT	5	9.3	J	55.6	J	105	J				
COPPER	2.5	79.0	J	3010	J	3190	J				
IRON	10	21500		144000+		96600+					
*LEAD	1	191	J	929	J	1590	J				
MAGNESIUM	500	2140	J	5750	J	5220	J				
MANGANESE	1.5	536		2460+		1660					
MERCURY	0.1	0.25	B	0.051	B	0.19	B				
NICKEL	4	17.3	J	246	J	353	J				
POTASSIUM	500	676	J	3340	J	1290	J				
SELENIUM	3.5	1.9	B	3.5	J	4.0	L				
SILVER	1			0.35	J	1.9					
SODIUM	500	33.6	J	3220	J	2910	J				
THALLIUM	2.5		UL		UL		UL				
VANADIUM	5	17.5		39.3		22.4					
ZINC	6	368		27800+		21200+					

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

Revised 09/99

+ = Result reported from diluted analysis. See dilution table in narrative.

## **Appendix C**

### **Chain-of-Custody Records**



# EPA USEP Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 38062  
DAS No: R

Region: 3	Date Shipped: 11/18/2008	<b>Chain of Custody Record</b>	
Project Code: CT4416	Carrier Name: FedEx	Relinquished By	Sampler Signature:
Account Code: PAN000308553	Airbill: 857499682471	(Date / Time)	Received By
CERCLIS ID: AGX	Shipped to: Bonner Analytical Testing Company	1	(Date / Time)
Spill ID: Tank Car Corp of America METALS SOIL/P	2703 Oak Grove Road	2	
Site Name/State: Jordan Vaughn	Hattiesburg MS 39402	3	
Project Leader: Jordan Vaughn	(601) 264-2854	4	
Action: Removal Action			
Sampling Co: Tetra Tech			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC05Q6	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1197 (1)	TCCA-SS-01	S: 11/18/2008 10:16		--
MC05Q8	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1199 (1)	TCCA-SS-03	S: 11/18/2008 10:25		--
MC05Q9	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1200 (1)	TCCA-SS-04	S: 11/18/2008 10:31		--
MC05R0	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1201 (1)	TCCA-SS-05	S: 11/18/2008 10:43		--
MC05R1	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1202 (1)	TCCA-SS-06	S: 11/18/2008 10:48		--
MC05R2	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1203 (1)	TCCA-SS-07	S: 11/18/2008 10:59		--
MC05R3	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1204 (1)	TCCA-SS-08	S: 11/18/2008 11:05		--
MC05R4	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1205 (1)	TCCA-SS-09	S: 11/18/2008 11:11		--
MC05R5	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1206 (1)	TCCA-SS-10	S: 11/18/2008 11:17		--
MC05R6	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1207 (1)	TCCA-SS-11	S: 11/18/2008 11:29		--
MC05R7	Soil (0"-12") Jordan Vaughn	L/G	Met+Hg (14)	1208 (1)	TCCA-SS-12	S: 11/18/2008 11:38		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: Met+Hg = ICP Metals + Hg soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____



# USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 38062

R

Region: 3	Date Shipped: 11/18/2008	Carrier Name: FedEx	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
Project Code: CT4416	Airbill: 857499682471	Shipped to: Bommer Analytical Testing Company 2703 Oak Grove Road Hattiesburg MS 39402 (601) 264-2854	TCCA-SS-13	S: 11/18/2008 11:22		Field Duplicate of TCCA-SS-11
Account Code: PAN000306553			TCCA-SS-02	S: 11/18/2008 10:20		MSMSD
CERCLIS ID: AGX						
Spill ID: Tank Car Corp of America METALS SOIL/P						
Site Name/State: Jordan Vaughn						
Project Leader: Removal Action						
Action: Tetra Tech						
Sampling Co:						

INORGANIC SAMPLE No.	MATRIX	CONC/TYPE	ANALYSIS/TURNAROUND	TAG No./PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC05R8	Soil (0"-12" Jordan Vaughn)	L/G	Met+Hg (14)	1209 (1)	TCCA-SS-13	S: 11/18/2008 11:22		Field Duplicate of TCCA-SS-11
MC05R9	Soil (0"-12" Jordan Vaughn)	L/G	Met+Hg (14)	AT1210, AT1211, AT1212 (3)	TCCA-SS-02	S: 11/18/2008 10:20		MSMSD

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: Met+Hg = ICP Metals + Hg soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-023200937-111808-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



277 11-16-08

ASQAB USE ONLY	
RAS#	CT4416
DAS#	Analytical TAT
NSF#	14

# U.S. EPA Region III Analytical Request Form

Revision 10.06

38062

Date: 11/10/2008		Site Activity: Removal Site Evaluations <i>Co. Westman</i>	
Site Name: Tank Car Corporation of America		Street Address: 1725 Walnut Ave	
City: <i>Orland</i>	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2009 T03 N 302DC6C A3GXRS00	CERCLIS #:	<i>PAN 600 306 300</i>
Site ID:	Spill ID: A3GX	Operable Unit:	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Title: Draft Sampling and Analysis Plan	
EPA Project Leader: Michael Towle	Phone#: 215-814-3272	Cell Phone #:	E-mail: towle.michael@epa.gov
Request Preparer: JOSHUA COPE	Phone#: 610-364-2130	Cell Phone #: 215-768-8114	E-mail: Joshua.cope@ttemi.com
Site Leader: Jordan Vaughn	Phone#: 610-364-2141	Cell Phone #: 215-651-4022	E-mail: Jordan.vaughn@ttemi.com
Contractor: Tetra Tech EM Inc			
#Samples 13	Matrix: water-non potable	Parameter: TCL VOC low water	Method: SOM01.2 <i>2996</i>
#Samples 11	Matrix: water-non potable	Parameter: TCL SVOC low water	Method: SOM01.2 <i>2996</i>
#Samples 1	Matrix: water-non potable	Parameter: TCL Pesticides, PCBs water	Method: SOM01.2 <i>2996</i>
#Samples 13	Matrix: soil	Parameter: TCL VOC low soil	Method: SOM01.2 <i>2996</i>
#Samples 26	Matrix: soil	Parameter: TCL SVOC low soil	Method: SOM01.2 <i>2996</i>
#Samples 13	Matrix: soil	Parameter: TCL Pesticides and PCBs soil	Method: SOM01.2 <i>2996</i>
#Samples 1	Matrix: water-non potable	Parameter: TAL Metals & Hg water	Method: ILM05.4 ICPAES & Hg <i>2996</i>
#Samples 13	Matrix: soil	Parameter: TAL Metals & Hg soil	Method: ILM05.4 ICPAES & Hg <i>2996</i>
Ship Date From: 11/18/2008		Ship Date To: 11/21/2008	Org. Validation Level M2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		If Yes, TAT Needed: <input checked="" type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) <i>180 days</i>	
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) <i>13/16</i>			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached DLs Needed.			

## **Appendix D**

### Laboratory Case Narrative

Lab Name: Bonner Analytical Testing Contract: EPW06055  
 Lab Code: BONNER Case No.: 38062 NRAS No.: \_\_\_\_\_ SDG No.: MC05Q6  
 SOW No.: ILM05.4

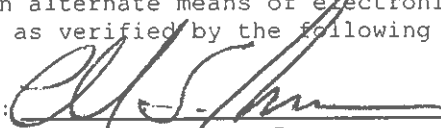
EPA SAMPLE NO.	Lab Sample ID:
<u>MC05Q6</u>	<u>0811222-01</u>
<u>MC05Q8</u>	<u>0811222-02</u>
<u>MC05Q9</u>	<u>0811222-03</u>
<u>MC05R0</u>	<u>0811222-04</u>
<u>MC05R1</u>	<u>0811222-05</u>
<u>MC05R2</u>	<u>0811222-06</u>
<u>MC05R3</u>	<u>0811222-07</u>
<u>MC05R4</u>	<u>0811222-08</u>
<u>MC05R5</u>	<u>0811222-09</u>
<u>MC05R6</u>	<u>0811222-10</u>
<u>MC05R7</u>	<u>0811222-11</u>
<u>MC05R8</u>	<u>0811222-12</u>
<u>MC05R9</u>	<u>0811222-13</u>
<u>MC05R9D</u>	<u>0811222-13DUP</u>
<u>MC05R9S</u>	<u>0811222-13MS</u>

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	<u>ICP-AES</u> Yes	<u>ICP-MS</u> Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	<u>Yes</u>	<u>Yes</u>
If yes, were raw data generated before application of background corrections?	(Yes/No)	<u>No</u>	<u>No</u>

Comments:

Aluminum, Barium, Calcium, Cobalt, Copper, Lead, Magnesium, Nickel, Potassium, Sodium were flagged as "E" estimated due to interferences occurring during the analysis of the Serial Dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature:  Name: Brandon G. Beck For Chris Bonner  
 Date: 12-3-08 Title: President

# Bonner Analytical Testing Company



2703 Oak Grove Road, Hattiesburg, MS 39402  
Phone: (601) 264-2854 Fax: (601) 268-7084

## SDG NARRATIVE:

SDG Number: MC05Q6

Case Number: 38062

Contract Number: EPW06055

### Sample Receipt:

On November 20, 2008, we received 13 soil samples under FedEx airbill number 8574 9968 2471. Custody seals were present and intact. Cooler temp was determined to be 4°C. Samples were received in good condition with no discrepancies.

### Metals

The analytical run began 12/01/2008 @ 1706 hrs. MC05R9, R9D and R9S were over the range for Ba, Fe and Zn; Q8 was over the range for Fe, Mn, Ni and Zn; C0 and R3 were over the range for Fe and Zn; R4 and R5 were over the range for Be, Fe, Mn, Ni and Zn; R6 and R8 were over the range for Fe, Mn and Zn—the samples were reanalyzed at appropriate dilutions. The matrix spike failed for As, Cd, Sb, Se and Tl; a post spike was analyzed at twice the CRQL for Sb and Tl and at twice the indigenous level for As, Cd and Se.

### Mercury

The analytical run began 12/02/2008 @ 1512 hrs. ICB01 failed; the instrument was recalibrated. CRI01 and CRI02 failed; the instrument was recalibrated. ICB01 failed; the instrument was recalibrated. CRI02 and CRI03 failed; the instrument was recalibrated. CRI01 failed; the CRI was reanalyzed.

### CSF:

No Discrepancies

Sample Equation:

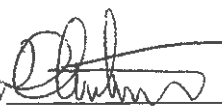
Lab ID 0811222-01 EPA Sample # MC05Q6

Date & Time 12/01/2008@1832

Metals: 409.98  $\mu\text{g/L}$  (0.100 L) 100% 1000 g 1 mg  
 (Analyte Be) \* (1.00 g) 89.0% \* 1 kg 1000  $\mu\text{g}$  = 46.0 mg  
kg

Date & Time 12/02/2008@1546

Hg: 1.858  $\mu\text{g/L}$  (0.100 L) 100% 1000 g 1 mg  
 \* (0.20 g) 89.0% \* 1 kg 1000  $\mu\text{g}$  = 1.0 mg  
kg

Authorized by   
 Daniel Antrim  
 Document Control Officer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : December 31, 2008  
SUBJECT: Region III Data QA Review  
FROM : Khin-Cho Thaung *ff for KCT*  
Region III ESAT RPO (3EA21)  
TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Tank Car Corporation of America Site (Case # 38062; SDG#: C05S0 ) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Jordan Vaughn (TTEMI)

TO File #: 0014 TDF#: 12035


OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Telephone 410-305-3037 Facsimile 410-305-3597



**DATE:** December 23, 2008

**SUBJECT:** Organic Data Validation (M2 Level)  
Case: 38062  
SDG: C05S0  
Site: Tank Car Corporation of America

**FROM:** Kurt Roby   
Organic Data Reviewer

Mahboobeh Mecanic <sup>A4</sup>  
Senior Oversight Chemist

**TO:** Khin-Cho Thuang  
ESAT Region 3 Project Officer

## OVERVIEW

Case 38062, Sample Delivery Group (SDG) C05S0, consisted of thirteen (13) soil samples including one (1) field duplicate pair analyzed for semivolatile compounds. Samples were analyzed by A4 Scientific, Inc. (A4) in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

## SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of raw data and sample spectra. Areas of concern with respect to data usability are listed below.

## MINOR PROBLEMS

- Several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the initial and/or continuing calibrations. Compounds which reported positive results were qualified "J" in affected samples on the Data Summary Forms (DSFs). Quantitation limits were not impacted since the %RSD or %D did not exceed the 50% criteria.

- Several Deuterated Monitoring Compounds (DMCs) reported recoveries below lower control limits in the samples listed below. Positive results reported for compounds associated with these DMCs in these samples were qualified “L” unless superseded by “J” on the DSFs. Quantitation limits for compounds associated with these DMCs in these samples were qualified “UL” on the DSFs.

<u>DMCs</u>	<u>Affected Sample(s)</u>
Dimethylphthalate-d <sub>6</sub>	C05S3, C05S6, C05T1
Fluorene-d <sub>10</sub>	C05T1
Pyrene-d <sub>10</sub> , benzo(a)pyrene-d <sub>12</sub>	C05S6, C05T1

### NOTES

- There were no contaminants found in the analysis of the associated blanks in this data set that affected any data.
- The concentration of several compounds exceeded the calibration range in the initial analysis for the samples listed below. These samples were re-analyzed to bring the concentration of the compounds within the calibration range. Results for these compounds were reported from the diluted analyses and annotated with a (+) symbol on the DSFs by the reviewer.

<u>Sample</u>	<u>Dilution</u>	<u>Compounds</u>
C05S0	10X	Fluoranthene, pyrene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene
C05S3, C05T1	5X	Fluoranthene, pyrene, benzo(b)fluoranthene
C05S4	20X	Phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene
C05S5	25X	Anthracene, fluoranthene, pyrene, butylbenzylphthalate, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene
C05S7, C05S8	5X	bis(2-ethylhexyl)phthalate

- Non spiked compounds were detected in the analysis of sample C05T3 and the matrix spike/matrix spike duplicate (MS/MSD) analyses of this sample. Results and precision estimates are as follows:



<u>Compound</u>	<u>Concentration in ug/Kg</u>			<u>%RSD</u>
	<u>C05T3</u>	<u>MS</u>	<u>MSD</u>	
Acetophenone	120 J	100 J	84 J	18
Naphthalene	110 J	110 J	150 J	19
2-methylnaphthalene	100 J	110 J	160 J	26
1,1'-biphenyl	22 J	30 J	26 J	15
Acenaphthylene	260	280	320	11
Dibenzofuran	64 J	82 J	170 J	54
Fluorene	95 J	100 J	260	62
Phenanthrene	640	870	2300	71
Anthracene	210	220	550	59
Carbazole	140 J	140 J	330	54
di-n-butylphthalate	98 J	120 J	130 J	14
Fluoranthene	1700	2600	4200 E	45
Benzo(a)anthracene	1000	1300	2000	36
Chrysene	950	1700	2500	45
Bis(2-ethylhexyl)phthalate	2200	2400	2500	6
Benzo(b)fluoranthene	1500	2200	2700	28
Benzo(k)fluoranthene	650	710	1000	24
Benzo(a)pyrene	890	1200	1600	29
Indeno(1,2,3-cd)pyrene	1100	1200	1500	16
dibenzo(a,h)anthracene	310	380	530	28
benzo(g,h,i)perylene	880	980	1300	21

%RSD = Percent relative standard deviation

E = Exceeded the calibration range

- The percent recovery (%R) for 4-chloro-3-methylphenol was above upper quality control (QC) limits in both MS and MSD analyses and pyrene in the MSD analysis of sample C05T3. Additionally, the relative percent difference (%RPD) for pyrene reported a result outside QC limits. No data were qualified based on these findings.
- Reported results for field duplicate pair C05T0/C05T2 were comparable except for the compounds acenaphthylene, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene.
- Sample weights other than thirty (30) grams were used in the semivolatile analyses of the soil samples associated with this case. The dilution factors reported on the DSFs reflect actual sample weights analyzed.

- Tentatively Identified Compounds (TICs) were reviewed during data validation. TIC Form Is for samples in which TICs were identified are included in Appendix E. Compounds identified with more than one retention time were crossed off TIC Form Is and labeled “unknown” by the reviewer.
- Compounds detected below Contract Required Quantitation Limits were qualified “J” on the DSFs.

Data for Case 38062, SDG C05S0, were reviewed in accordance with Level M2 Innovative Approaches for Validation of Organic Data, Region III, June 1995.

### **ATTACHMENTS**

Appendix A – Glossary of Data Qualifier Codes

Appendix B – Data Summary Form(s)

Appendix C – Chain of Custody Records

Appendix D – Laboratory Case Narrative

Appendix E – Tentatively Identified Compounds

DCN: 38062\_C05S0

**Appendix A**  
**Glossary of Data Qualifier Codes**

## GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

### CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

- U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
- NO CODE = Confirmed identification.
- B = Not detected substantially above the level reported in laboratory or field blanks.
- R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
- N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

### CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = Analyte present. Reported value may not be accurate or precise.
- K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- UJ = Not detected, quantitation limit may be inaccurate or imprecise.
- UL = Not detected, quantitation limit is probably higher.

### OTHER CODES

- NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.
- Q = No analytical result.

## Appendix B

### Data Summary Forms

DATA SUMMARY FORM: BNA

Case #: 38062

SDG : C05S0

Number of Soil Samples : 13

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C05S0	C05S2	C05S3	C05S4	C05S5						
Sampling Location :	TCCA-SS-01	TCCA-SS-03	TCCA-SS-04	TCCA-SS-05	TCCA-SS-06						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	10:16	10:25	10:31	10:43	10:48						
%Moisture :	8.6	5.4	41	18	22.5						
Dilution Factor :	0.99 / 9.93	1.0	1.0 / 5.0	1.0 / 20	0.99 / 24.8						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170							190	J		
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170	170	J			110	J	92	J	75	J
4-Methylphenol	170					61	J				
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170									32	J
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	250		22	J	380		1500		570	
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170						UL				
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	130	J			170	J	670		290	
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170							100	J		
1,1'-Biphenyl	170	140	J			54	J	200	J	73	J
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170						UL				
2,6-Dinitrotoluene	170										
Acenaphthylene	170	380		49	J	800		1100		1200	
3-Nitroaniline	330										
Acenaphthene	170	140	J			140	J	470		240	

DATA SUMMARY FORM: BNA

Case #: 38062

SDG : C05S0

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05S0	C05S2	C05S3	C05S4	C05S5				
Sampling Location :	TCCA-SS-01	TCCA-SS-03	TCCA-SS-04	TCCA-SS-05	TCCA-SS-06				
Matrix :	Soil	Soil	Soil	Soil	Soil				
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008				
Time Sampled :	10:16	10:25	10:31	10:43	10:48				
%Moisture :	8.6	5.4	41	18	22.5				
Dilution Factor :	0.99 / 9.93	1.0	1.0 / 5.0	1.0 / 20	0.99 / 24.8				
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330								
4-Nitrophenol	330								
Dibenzofuran	170	100	J			220	J	940	300
2,4-Dinitrotoluene	170								
Diethylphthalate	170						UL		
Fluorene	170	76	J			380		2300	850
4-Chlorophenyl-phenylether	170								
4-Nitroaniline	330								
4,6-Dinitro-2-methylphenol	330								
N-Nitrosodiphenylamine	170								
1,2,4,5-Tetrachlorobenzene	170							55	J
4-Bromophenyl-phenylether	170								
Hexachlorobenzene	170							2000	2200
Atrazine	170								
Pentachlorophenol	330								
Phenanthrene	170	750		86	J	3400		6100 +	3200
Anthracene	170	270		50	J	1100		30000 +	9600 +
Carbazole	170					530		8700 +	2700
Di-n-butylphthalate	170	220		18	J	170	J	160	J
Fluoranthene	170	4300 +		250		9100 +		10000 +	7800 +
Pyrene	170	3400 +		230		7000 +		7900 +	6000 +
Butylbenzylphthalate	170			52	J	2400	L		35000 +
3,3'-Dichlorobenzidine	170								
Benzo(a)anthracene	170	1700		130	J	4100		4900 +	4300 +
Chrysene	170	2400		170	J	3800		4900 +	4400 +
Bis(2-ethylhexyl)phthalate	170	9700 +		1100		1800	L	1200	1600
Di-n-octylphthalate	170	790		8.6	J		UL		
Benzo(b)fluoranthene	170	3800 +		280	J	6400 +		6800 +	6700 +
Benzo(k)fluoranthene	170	1400		83	J	1700		1500	2000
Benzo(a)pyrene	170	2100		160	J	4100		5100 +	5100 +
Indeno(1,2,3-cd)pyrene	170	2200	J	180	J	4100	J	3800 +	3900 +
Dibenzo(a,h)anthracene	170	520		38	J	1300		1300	1400
Benzo(g,h,i)perylene	170	2300		170	J	4100		3900 +	3800 +
2,3,4,6-Tetrachlorophenol	170								

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

"+" = Result reported from the diluted analysis

Case #: 38062 SDG : C05S0  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05S6	C05S7	C05S8	C05S9	C05T0				
Sampling Location :	TCCA-SS-07	TCCA-SS-08	TCCA-SS-09	TCCA-SS-10	TCCA-SS-11				
Field QC :					Dup. of C05T2				
Matrix :	Soil	Soil	Soil	Soil	Soil				
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008				
Time Sampled :	10:59	11:05	11:11	11:17	11:29				
%Moisture :	32.2	5	6.4	3.8	1.8				
Dilution Factor :	1.0	1.0 / 4.98	1.0 / 4.98	0.99	1.0				
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170								
Phenol	170	9.5	J						
Bis(2-Chloroethyl)ether	170								
2-Chlorophenol	170								
2-Methylphenol	170								
2,2'-Oxybis(1-chloropropane)	170								
Acetophenone	170			37	J				
4-Methylphenol	170								
N-Nitroso-di-n-propylamine	170								
Hexachloroethane	170								
Nitrobenzene	170								
Isophorone	170								
2-Nitrophenol	170								
2,4-Dimethylphenol	170								
Bis(2-chloroethoxy)methane	170								
2,4-Dichlorophenol	170								
Naphthalene	170	35	J	55	J	29	J	64	J
4-Chloroaniline	170								
Hexachlorobutadiene	170								
Caprolactam	170		UL						
4-Chloro-3-methylphenol	170								
2-Methylnaphthalene	170						36	J	
Hexachlorocyclopentadiene	170								
2,4,6-Trichlorophenol	170								
2,4,5-Trichlorophenol	170								
1,1'-Biphenyl	170		UL	46	J				18
2-Chloronaphthalene	170								
2-Nitroaniline	330								
Dimethylphthalate	170		UL						
2,6-Dinitrotoluene	170								
Acenaphthylene	170	120	J	220		91	J	150	J
3-Nitroaniline	330								
Acenaphthene	170			34	J			38	J



DATA SUMMARY FORM: BNA

Case #: 38062 SDG : C05S0  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05S6	C05S7	C05S8	C05S9	C05T0						
Sampling Location :	TCCA-SS-07	TCCA-SS-08	TCCA-SS-09	TCCA-SS-10	TCCA-SS-11						
Field QC :					Dup. of C05T2						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	10:59	11:05	11:11	11:17	11:29						
%Moisture :	32.2	5	6.4	3.8	1.8						
Dilution Factor :	1.0	1.0 / 4.98	1.0 / 4.98	0.99	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170			24	J			25	J		
2,4-Dinitrotoluene	170										
Diethylphthalate	170		UL								
Fluorene	170	56	J	62	J			38	J	23	J
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	670		710		200		300		210	
Anthracene	170	160	J	410		47	J	92	J	190	
Carbazole	170	110	J	190		51	J	46	J	96	J
Di-n-butylphthalate	170		UL	170	J	120	J	110	J	170	J
Fluoranthene	170	2100	L	2000		620		710		670	
Pyrene	170	1600	L	1900		610		700		560	
Butylbenzylphthalate	170	55	J	200		140	J	150	J	71	J
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	840	L	1200		320		440		430	
Chrysene	170	1000	L	1400		480		470		490	
Bis(2-ethylhexyl)phthalate	170	120	J	3700 +		4900 +		1300		1600	
Di-n-octylphthalate	170		UL								
Benzo(b)fluoranthene	170	1300	L	1600	J	690	J	790	J	760	
Benzo(k)fluoranthene	170	550	L	490		250		330		220	
Benzo(a)pyrene	170	900	L	1100		400		550		390	
Indeno(1,2,3-cd)pyrene	170	660	L	830	J	400	J	520	J	380	
Dibenzo(a,h)anthracene	170	210	J	220		130	J	170	J	120	J
Benzo(g,h,i)perylene	170	570	L	690		390		460		320	
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

"+" = Result reported from the diluted analysis

DATA SUMMARY FORM: BNA

Case #: 38062 SDG : C05S0  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :		C05T1		C05T2		C05T3					
Sampling Location :		TCCA-SS-12		TCCA-SS-13		TCCA-SS-02					
Field QC :				Dup. of C05T0							
Matrix :		Soil		Soil		Soil					
Units :		ug/Kg		ug/Kg		ug/Kg					
Date Sampled :		11/18/2008		11/18/2008		11/18/2008					
Time Sampled :		11:38		11:22		10:20					
%Moisture :		48.5		2.9		6.9					
Dilution Factor :		1.0 / 4.98		1.0		0.99					
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170			33	J	120	J				
4-Methylphenol	170										
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	88	J	97	J	110	J				
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170		UL								
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	57	J	52	J	100	J				
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170		UL	42	J	22	J				
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170		UL								
2,6-Dinitrotoluene	170										
Acenaphthylene	170	430		190		260					
3-Nitroaniline	330										
Acenaphthene	170	61	J	140	J	130	J				

DATA SUMMARY FORM: BNA

Case #: 38062 SDG : C05S0  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05T1	C05T2	C05T3						
Sampling Location :	TCCA-SS-12	TCCA-SS-13	TCCA-SS-02						
Field QC :		Dup. of C05T0							
Matrix :	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	11:38	11:22	10:20						
%Moisture :	48.5	2.9	6.9						
Dilution Factor :	1.0 / 4.98	1.0	0.99						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330								
4-Nitrophenol	330								
Dibenzofuran	170	110	J	100	J	64	J		
2,4-Dinitrotoluene	170								
Diethylphthalate	170		UL						
Fluorene	170	260	L	210		95	J		
4-Chlorophenyl-phenylether	170		UL						
4-Nitroaniline	330								
4,6-Dinitro-2-methylphenol	330			4.9	J				
N-Nitrosodiphenylamine	170								
1,2,4,5-Tetrachlorobenzene	170								
4-Bromophenyl-phenylether	170		UL						
Hexachlorobenzene	170								
Atrazine	170								
Pentachlorophenol	330								
Phenanthrene	170	1900		1200		640			
Anthracene	170	880		890		210			
Carbazole	170	250	L	380		140	J		
Di-n-butylphthalate	170		UL	150	J	98	J		
Fluoranthene	170	4800 +		2000		1700			
Pyrene	170	3900 +		1700		1500			
Butylbenzylphthalate	170		UL						
3,3'-Dichlorobenzidine	170								
Benzo(a)anthracene	170	2500	L	1000		1000			
Chrysene	170	2100	L	1100		950			
Bis(2-ethylhexyl)phthalate	170	69	J	2200		2200			
Di-n-octylphthalate	170		UL						
Benzo(b)fluoranthene	170	2900 +		1400		1500			
Benzo(k)fluoranthene	170	1000	L	440		650			
Benzo(a)pyrene	170	2000	L	880		890			
Indeno(1,2,3-cd)pyrene	170	1200	L	730		1100			
Dibenzo(a,h)anthracene	170	460	L	250		310			
Benzo(g,h,i)perylene	170	1100	L	610		880			
2,3,4,6-Tetrachlorophenol	170								

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

"+" = Result reported from the diluted analysis

## Appendix C

### Chain of Custody Records



# USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 38062

R

DAS No:

Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name/State: Project Leader: Action: Sampling Co:	3 CT4416 PAN000306553 AGX Tank Car Corp SS SVOC/PA Jordan Vaughn Removal Action Tetra Tech	Date Shipped: 11/18/2008 Carrier Name: FedEx Airbill: 857499662482 Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	Chain of Custody Record Relinquished By (Date / Time) 1 2 3 4 Sampler Signature: Received By (Date / Time)
---	---	--	---

INORGANIC SAMPLE No.	MATR:Y/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	PRESERVATIVE/ Bottles	TAG No./	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	OC Type
MC05S0	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1213 (1)		TCCA-SS-01	10:16		--
MC05S2	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1215 (1)		TCCA-SS-03	10:25		--
MC05S3	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1216 (1)		TCCA-SS-04	10:31		--
MC05S4	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1217 (1)		TCCA-SS-05	10:43		--
MC05S5	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1218 (1)		TCCA-SS-06	10:48		--
MC05S6	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1219 (1)		TCCA-SS-07	10:59		--
MC05S7	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1220 (1)		TCCA-SS-08	11:05		--
MC05S8	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1221 (1)		TCCA-SS-09	11:11		--
MC05S9	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1222 (1)		TCCA-SS-10	11:17		--
MC05T0	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1223 (1)		TCCA-SS-11	11:29		--
MC05T1	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	1224 (1)		TCCA-SS-12	11:38		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOC soil = SVOC soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

TR Number: 3-023200937-111808-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



# USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 38062

DAS No:

R

Region: 3	Date Shipped: 11/18/2008	Carrier Name: FedEX	Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277
Project Code: CT4416	Airbill: 857499682482		
Account Code: PAN000306553			
CERCLIS ID: AGX			
Spill ID: Tank Car Corp SS SVOC/PA			
Site Name/State: Jordan Vaughn			
Project Leader: Removal Action			
Action: Tetra Tech			
Sampling Co:			

Chain of Custody Record		
Relinquished By	(Date / Time)	Sampler Signature:
1		
2		
3		
4		

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC05T2	Soil (0"-12"Y) Jordan Vaughn	L/G	SVOC soil (14)	1225 (1)	TCCA-SS-13	S: 11/18/2008 11:22		Field Duplicate of TCCA-SS-11
MC05T3	Soil (0"-12"Y) Jordan Vaughn	L/G	SVOC soil (14)	1226, 1227, 1228 (3)	TCCA-SS-02	S: 11/18/2008 10:20		MS/MSD

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOC soil = SVOC soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

# U.S. EPA Region III Analytical Request Form

Revision 10.06

38062

ASOAB USE ONLY	
RAS#	CT4416
DAS#	Analytical TAT
NSF#	14

Date: 11/10/2008		Site Activity: Removal Site-Evaluations		Street Address: 1725 Walnut Ave		Longitude:	
Site Name: Tank Car Corporation of America		State: PA		Latitude:		Operable Unit:	
City: Orland - Conestoga		Acct. #: 2009 T03 N 302DC6C A3GXRS00		CERCLIS #:		FANNO 306 553	
Program: Superfund		Spill ID: A3GX		Title: Draft Sampling and Analysis Plan		Date Approved:	
Site ID:		<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		EPA Project Leader: Michael Towle		E-mail: towle.michael@epa.gov	
Site Specific QA Plan Submitted:		Phone#: 215-814-3272		Cell Phone #:		E-mail: joshua.cope@ttemi.com	
EPA Project Leader: Michael Towle		Phone#: 610-364-2130		Cell Phone #:		E-mail: jordan.vaughn@ttemi.com	
Request Preparer: JOSHUA COPE		Phone#: 610-364-2141		Cell Phone #:		E-mail: jordan.vaughn@ttemi.com	
Site Leader: Jordan Vaughn		Contractor: Tetra Tech EM Inc		EPA CO/PO: Lorrie Murray/Karen Wodarczyk			
#Samples 13	Matrix: water-non potable	Parameter: TCL VOC low water	Method: SOM01.2	29982			
#Samples 11	Matrix: water-non potable	Parameter: TCL SVOC low water	Method: SOM01.2	29961			
#Samples 1	Matrix: water-non potable	Parameter: TCL Pesticides, PCBs water	Method: SOM01.2	29902-03			
#Samples 13	Matrix: soil	Parameter: TCL VOC low soil	Method: SOM01.2	29904			
#Samples 26	Matrix: soil	Parameter: TCL SVOC low soil	Method: SOM01.2	29905			
#Samples 13	Matrix: soil	Parameter: TCL Pesticides and PCBs soil	Method: SOM01.2	29906, 07			
#Samples 1	Matrix: water-non potable	Parameter: TAL Metals & Hg water	Method: ILM05.4 ICPAES & Hg	29908			
#Samples 13	Matrix: water-non potable	Parameter: TAL Metals & Hg soil	Method: ILM05.4 ICPAES & Hg				
#Samples 13	Matrix: soil	Parameter: TAL Metals & Hg soil	Method: ILM05.4 ICPAES & Hg				

Ship Date From: 11/18/2008      Ship Date To: 11/21/2008      Org. Validation Level M2      Inorg. Validation Level IM2

Unvalidated Data Requested:  No  Yes      If Yes, TAT Needed:  14days  7days  72hrs  48hrs  24hrs  Other (Specify) 72hrs

Validated Data Package Due:  42 days  30 days  21days  14 days  Other (Specify) 14/16

Electronic Data Deliverables Required:  No  Yes      (EDDs will be provided in Region 3 EDD Format)

Special Instructions: See attached DLS Needed.

## Appendix D

### Laboratory Case Narrative



Contract #: EPW05036	Case #: 38062	SDG #: C05S0
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SDG NARRATIVE

**SAMPLE RECEIPT & LOGIN**

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
C05S0	0009757-01	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S2	0009757-02	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S3	0009757-03	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S4	0009757-04	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S5	0009757-05	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S6	0009757-06	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S7	0009757-07	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S8	0009757-08	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05S9	0009757-09	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05T0	0009757-10	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05T1	0009757-11	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05T2	0009757-12	Soil	1	11/20/08 10:00	SOM01.2 SVOA	
C05T3	0009757-13	Soil	3	11/20/08 10:00	SOM01.2 SVOA	MS/MSD

The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)
11/20/2008	1	4

The following issues were noted:

**Issue:** The TR/COC and sample tags lists inorganic sample IDs for the soil samples received on 11/19/08. The laboratory is scheduled to receive organic samples for the Case. Please note that the analysis listed on the TR/COC and sample tags is SVOA.

**Resolution:** Per Region 3, the laboratory deleted the "M" from the sample ID listed on the TR/COC to create the new CLP organic sample ID. The laboratory proceeded with the analysis of the samples.

<u>Inorganic sample ID on TR/COC</u>	<u>New organic sample ID (Deleted "M")</u>
MC05S0	C05S0
MC05S2	C05S2
MC05S3	C05S3
MC05S4	C05S4

Contract #: EPW05036	Case #: 38062	SDG #: C05S0
----------------------	---------------	--------------

MC05S5	C05S5
MC05S6	C05S6
MC05S7	C05S7
MC05S8	C05S8
MC05S9	C05S9
MC05T0	C05T0
MC05T1	C05T1
MC05T2	C05T2
MC05T3	C05T3

Directive (email) is enclosed. No other discrepancies or issues were noted during sample receipt and login.

**SEMI-VOLATILES**

**1) Extractions**

Soil samples were extracted by sonication method. GPC cleanup was performed on soil samples and the associated Blank. No problems were encountered during the extraction.

**2) Analysis**

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was performed on sample C05T3.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C05S0	10
C05S3	5
C05S4	20
C05S5	25
C05S7	5
C05S8	5
C05T1	5

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	Sample ID
Phenol-d5	C05S0, C05S0DL, C05S2, C05S3, C05S3DL, C05S4, C05S4DL, C05S5, C05S5DL, C05S6, C05S7, C05S7DL, C05S8, C05S8DL, C05S9, C05T0, C05T1DL, C05T2, C05T3, SBLK9U, C05T3MS, C05T3MSD, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, SSTD0208H, SSTD0208I
Benzo (b) fluoranthene	C05S0, C05S0DL, C05S2, C05S3, C05S3DL, C05S4, C05S4DL, C05S5, C05S5DL, C05S6, C05S7, C05S7DL, C05S8, C05S8DL, C05S9, C05T0, C05T1, C05T1DL, C05T2, C05T3, C05T3MS, C05T3MSD
Benzo (k) fluoranthene	C05S0, C05S0DL, C05S2, C05S3, C05S3DL, C05S4, C05S4DL, C05S5, C05S5DL, C05S6, C05S7, C05S7DL, C05S8, C05S8DL, C05S9, C05T0, C05T1, C05T1DL, C05T2, C05T3, C05T3MS, C05T3MSD, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, SSTD0208H, SSTD0208I
Indeno (1, 2, 3-cd) pyrene	C05S0, C05S0DL, C05S2, C05S3, C05S3DL, C05S4, C05S4DL, C05S5, C05S5DL, C05S6, C05S7, C05S7DL, C05S8, C05S8DL, C05S9, C05T0, C05T1, C05T1DL, C05T2, C05T3,

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite505•The Woodlands, TX 77380•Phone (281) 292-5277

Contract #: EPW05036	Case #: 38062	SDG #: C05S0
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	C05T3MS, C05T3MSD, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, SSTD0208H, SSTD0208I
2, 4-Dinitrophenol	SSTD0207B, SSTD0107B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207Z, SSTD0208H, SSTD0208I

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

**Semivolatiles:**

Soil/Sediment:

$$\text{Concentration } (\mu\text{g/Kg}) \text{ (Dry weight Basis)} = \frac{(A_x)(I_s)(V_t)(D_f)(GPC)}{(A_{is})(RRF)(V_i)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in nanograms (ng).

$V_t$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ).

$V_i$  = Volume of extracted infected in microliters ( $\mu\text{L}$ ).

$$D = \frac{100 - \%moisture}{100}$$

$W_s$  = Weight of sample extracted in grams (g).

$D_f$  = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. ( If, no GPC is performed, GPC=1).}$$

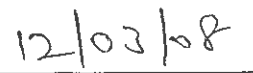
$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

$\overline{RRF}$  = Mean relative response factor determined from the initial calibration.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy Sample Data Package and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

  
Signature and Title

  
Date of Signature



Dwayne  
Hall/ESC/R3/USEPA/US  
02/03/2006 02:25 PM

To Khin-Cho Thaug/ESC/R3/USEPA/US, Michael  
Towle/R3/USEPA/US, Lorrie Murray/R3/USEPA/US, Karen  
Wodarczyk/R3/USEPA/US  
cc John Kwedar/ESC/R3/USEPA/US@EPA, Dan  
Slizys/ESC/R3/USEPA/US@EPA, Victor  
Yastrop/ESC/R3/USEPA/US@EPA, Judy  
bcc

Subject Requesting duplicate sample pair information and regional  
traffic reports for case number 38062, Tank Car Corporation

**Disclaimer:** Information contain below does not constitute technical direction. The Sampling/Field contractor shall contact their applicable EPA Contracting Officer Representative (COR) for technical direction

Case: 38062  
Lab: A4 Scientific  
SDG: C05W3

Site: Tank Car Corporation of America  
EPA Project Leader: Michael Towle  
Site Leader: Jordan Vaughn

Issue 1:

The corresponding Regional chain of custody document (TR number: 3-023200937-111908-0002) has not been received for this case. Please fax (number included below) or email a copy of this document.

Issue 2:

Duplicate sample pair information was not specified on any of the chain of custody documents. Please e-mail a response that specifies duplicate sample pair information if applicable for this case. No memo to file required. Thank you.

\*\*\*\*\*  
Dwayne Hall  
ESAT Region 3 R.S.C.C. Auditor/PM2.5 Field Auditor  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone: 410-305-2602  
Field Cell Phone: 202-256-5518  
Fax: 410-305-3095  
\*\*\*\*\*

"Vaughn, Jordan"  
<jordan.vaughn@ttemi.com>  
12/08/2008 08:56 PM

To Dwayne Hall/ESC/R3/USEPA/US@EPA, Khin-Cho  
Thaung/ESC/R3/USEPA/US@EPA, Michael  
Towle/R3/USEPA/US@EPA, Lorrie  
cc John Kwedar/ESC/R3/USEPA/US@EPA, Dan  
Slizys/ESC/R3/USEPA/US@EPA, Victor  
Yastrop/ESC/R3/USEPA/US@EPA, Judy  
bcc  
Subject RE: Requesting duplicate sample pair information and  
regional traffic reports for case number 38062, Tank Car  
Corporation

Dwayne,

Attached please find the regional chain of custody for  
3-023200937-111908-0002.

Duplicate pairs for the submitted samples are:

MC05T2 (TCCA-SS-13) is a duplicate of MC05T0 (TCCA-SS-11)  
MC05R8 (TCCA-SS-11) is a duplicate of MC05R6 (TCCA-SS-11)  
C05T9 (TCCA-MW-04) is a duplicate of C05T8 (TCCA-MW-03)  
C05W9 (TCCA-MW-04) is a duplicate of C05W8 (TCCA-MW-03)

Sincerely,

Jordan Vaughn | Geologist  
Mobile: 215.651.4022 | Main: 610.485.6410 | Fax: 610.485.8587  
jordan.vaughn@ttemi.com

Tetra Tech EM Inc.  
7 Creek Parkway, Suite 700 | Boothwyn, PA 19061 | www.tetratech.com

-----Original Message-----

From: Hall.Dwayne@epamail.epa.gov [mailto:Hall.Dwayne@epamail.epa.gov]  
Sent: Monday, December 08, 2008 10:47 AM  
To: Thaung.Khin-Cho@epamail.epa.gov; Towle.Michael@epamail.epa.gov;  
Murray.Lorrie@epamail.epa.gov; Wodarczyk.Karen@epamail.epa.gov  
Cc: Kwedar.John@epamail.epa.gov; Slizys.Dan@epamail.epa.gov;  
Yastrop.Victor@epamail.epa.gov; Snyder.Judy@epamail.epa.gov;  
Penix.Lisa@epamail.epa.gov; Vaughn, Jordan; Cope, Joshua; Murphy, Marian  
Subject: Requesting duplicate sample pair information and regional  
traffic reports for case number 38062, Tank Car Corporation

Disclaimer: Information contain below does not constitute technical  
direction. The Sampling/Field  
contractor shall contact their applicable EPA Contracting  
Officer Representative (COR) for technical direction

Case: 38062  
Lab: A4 Scientific  
SDG: C05W3

Site: Tank Car Corporation of America  
EPA Project Leader: Michael Towle  
Site Leader: Jordan Vaughn

Issue 1:

The corresponding Regional chain of custody document (TR number: 3-023200937-111908-0002) has not been received for this case. Please fax (number included below) or email a copy of this document.

Issue 2:

Duplicate sample pair information was not specified on any of the chain of custody documents. Please e-mail a response that specifies duplicate sample pair information if applicable for this case. No memo to file required. Thank you.

\*\*\*\*\*  
\*\*\*\*\*

Dwayne Hall  
ESAT Region 3 R.S.C.C. Auditor/PM2.5 Field Auditor  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone: 410-305-2602  
Field Cell Phone: 202-256-5518  
Fax: 410-305-3095

\*\*\*\*\*  
\*\*\*\*\*



TCCA SB SVOC Pest.pdf

[jschulze@a4scientific.com](mailto:jschulze@a4scientific.com)

---

**From:** "Walsh, Colin" <cwalsh20@fedcsc.com>  
**To:** <jschulze@a4scientific.com>  
**Cc:** "sri" <shreedhar@a4scientific.com>; "pakanati" <pakanati@a4scientific.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>  
**Sent:** Thursday, November 20, 2008 2:21 PM  
**Attach:** 38062.pdf  
**Subject:** Region 03 | Case 38062 | Lab A4 | Issue Incorrect/duplicated sample numbers | FINAL

Jessica,

\*\*\*Summary Start\*\*\*

Issue: The TR/COC and sample tags lists inorganic sample IDs for the soil samples received on 11/19/08. The laboratory is scheduled to receive organic samples for the Case. Please note that the analysis listed on the TR/COC and sample tags is SVOA.

Resolution: Per Region 3, the laboratory will delete the "M" from the sample ID listed on the TR/COC to create the new CLP organic sample ID. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the samples.

<u>Inorganic sample ID on TR/COC</u>	<u>New organic sample ID (Deleted "M")</u>
MC05S0	C05S0
MC05S2	C05S2
MC05S3	C05S3
MC05S4	C05S4
MC05S5	C05S5
MC05S6	C05S6
MC05S7	C05S7
MC05S8	C05S8
MC05S9	C05S9
MC05T0	C05T0
MC05T1	C05T1
MC05T2	C05T2
MC05T3	C05T3

\*\*\*Summary End\*\*\*

Please let me know if you have any further questions or problems.

Thanks,

Colin

-----  
 Colin G. Walsh  
 Environmental Coordinator - Region 3  
 CSC

15000 Conference Center Drive, Chantilly, VA 20151  
 Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

-----Original Message-----

**From:** Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]  
**Sent:** Thursday, November 20, 2008 3:03 PM  
**To:** Walsh, Colin  
**Cc:** Harris.Carroll@epamail.epa.gov; kwedar.john@epa.gov; Joshua.cope@ttemi.com; thaung.khin-cho@epa.gov  
**Subject:** RE: NEW ISSUE | Case 38062 | Lab A4 | Issue Discrepancies with tags, jars. and/or TR/COC |

00001628

11/21/2008

## Appendix E

### Tentatively Identified Compounds (TICs)



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-01  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9032.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 8.6 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	970	J
02		UNKNOWN	1.23	760	J
03		UNKNOWN	1.28	340	J
04	000108-38-3	Benzene, 1,3-dimethyl-	2.54	390	JN
05	000149-57-5	Hexanoic acid, 2-ethyl-	4.53	780	JN
06		UNKNOWN	5.62	640	J
07	000098-54-4	Phenol, p-tert-butyl-	5.82	1300	JN
08		UNKNOWN	8.53	280	J
09	000084-65-1	9,10-Anthracenedione	9.90	420	JN
10		UNKNOWN	10.09	440	J
11		UNKNOWN	10.47	1000	J
12	000057-11-4	Octadecanoic acid	10.67	290	JN
13	000080-05-7	Phenol, 4,4'-(1-methylethyl-	10.78	490	JN
14		UNKNOWN	11.50	2000	J
15		UNKNOWN	11.56	340	J
16		UNKNOWN	11.66	500	J
17		UNKNOWN	11.73	410	J
18	001241-94-7	Octicizer	11.80	840	JN
19		UNKNOWN	11.94	3200	J
20		UNKNOWN	14.43	290	J
21		UNKNOWN	14.49	970	J
22		UNKNOWN	14.68	1100	J
23		UNKNOWN	14.93	1700	J
24		UNKNOWN	15.91	2000	J
25		UNKNOWN	16.17	1800	J
26		UNKNOWN	16.35	730	J
27		UNKNOWN	16.75	1500	J
28		UNKNOWN	17.59	1300	J
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S0DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-01RE1  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9061.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 8.6 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.52	840	JD
02		UNKNOWN	5.62	750	JD
03	000098-54-4	Phenol, p-tert-butyl-	5.84	1600	JDN
04	000057-10-3	n-Hexadecanoic acid	9.71	1700	JDN
05	000084-65-1	9,10-Anthracenedione	9.91	860	JDN
06		UNKNOWN	10.10	1300	JD
07		UNKNOWN	10.29	1200	JD
08		UNKNOWN	10.48	1600	JD
09		UNKNOWN	10.74	1300	JD
10	000080-05-7	Phenol, 4,4'-(1-methylethyl-	10.78	1600	JDN
11	002381-21-7	Pyrene, 1-methyl-	11.04	1300	JDN
12		UNKNOWN	11.50	6600	JD
13		UNKNOWN	11.54	1600	JD
14		UNKNOWN	11.66	1500	JD
15		UNKNOWN	11.74	1300	JD
16	001241-94-7	Octicizer	11.80	4900	JDN
17		UNKNOWN	11.92	8800	JD
18		UNKNOWN	12.77	990	JD
19		UNKNOWN	14.49	3300	JD
20		UNKNOWN	14.65	3000	JD
21		UNKNOWN	14.88	6000	JD
22		UNKNOWN	15.88	7500	JD
23		UNKNOWN	16.13	5700	JD
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:            SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-02  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9039.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 5.4 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 8.1 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1700	J
02		UNKNOWN	1.23	900	J
03		UNKNOWN	1.29	150	J
04		UNKNOWN	1.34	150	J
05		UNKNOWN	1.98	100	J
06		UNKNOWN	2.02	200	J
07		UNKNOWN	2.16	250	J
08		UNKNOWN	2.19	92	J
09	000080-05-7	Phenol, 4,4'-(1-methylethyl.	10.76	81	JN
10		UNKNOWN	11.94	92	J
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	180	

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. :

C05S3DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-03RE1  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9057.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 41.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 8.2 Dilution Factor: 5.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.23	6100	JD
02		UNKNOWN	1.46	960	JD
03	002531-84-2	Phenanthrene, 2-methyl-	9.52	620	JDN
04	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.55	760	JDN
05		UNKNOWN	9.64	1000	JD
06	006572-60-7	Tricyclo[8.2.2.2(4,7)]hexad.	9.89	660	JDN
07	000084-65-1	9,10-Anthracenedione	9.92	610	JDN
08	000781-43-1	9,10-Dimethylanthracene	10.19	670	JDN
09	074685-33-9	3-Eicosene, (E)-	10.32	2800	JDN
10		UNKNOWN	10.48	1700	JD
11		UNKNOWN	11.04	620	JD
12	003353-12-6	Pyrene, 4-methyl-	11.17	630	JDN
13	000479-79-8	11H-Benzo[a]fluoren-11-one	11.92	870	JDN
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-04  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9034.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 18.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 8.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1400	J
02		UNKNOWN	1.23	840	J
03		UNKNOWN	6.78	420	J
04		UNKNOWN	7.03	1900	J
05	000128-37-0	Butylated Hydroxytoluene	7.23	19000	JN
06		UNKNOWN	7.51	640	J
07	000616-55-7	Phenol, 4,6-di(1,1-dimethyl.	8.01	710	JN
08	001620-98-0	3,5-di-tert-Butyl-4-hydroxy.	8.72	870	JN
09	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.60	220	JN
10	000203-64-5	4H-Cyclopenta[def]phenanthre	9.63	160	JN
11	001022-22-6	DDMU	10.49	210	JN
12	000072-55-9	p,p'-DDE	10.80	370	JN
13	000053-19-0	Mitotane	10.88	630	JN
14	<del>000243-17-4</del>	<del>1H-Benzo[b]fluorene (01)</del>	11.04	430	JN
15	<del>000243-17-4</del>	<del>1H-Benzo[b]fluorene (02)</del>	11.12	190	JN
16	003353-12-6	Pyrene, 4-methyl-	11.16	150	JN
17	004329-12-8	m,p'-DDD	11.23	2200	JN
18		UNKNOWN	11.49	210	J
19	000050-29-3	p,p'-DDT	11.59	3200	JN
20		UNKNOWN	11.67	360	J
21	000239-35-0	Benzo[b]naphtho[2,1-d]thiop.	11.79	150	JN
22	034777-33-8	Benzo(c)carbazole	12.35	180	JN
23	001705-84-6	Triphenylene, 2-methyl-	12.56	190	JN
24		UNKNOWN	12.84	510	J
25	001516-94-5	4,4'-Ethylenebis(2,6-di-ter.	13.09	7500	JN
26		UNKNOWN	13.13	340	J
27	000207-08-9	Benzo[e]pyrene	13.43	1500	JN
28		UNKNOWN	13.47	800	J
29	000193-43-1	indeno[1,2,3-cd]fluoranthene	15.28	1400	JN
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

\* "unknown" DV 12/22/08

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S4DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-04RE1  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9062.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 18.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 8.9 Dilution Factor: 20.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT.	EST. CONC.	Q
01	001620-98-0	3,5-di-tert-Butyl-4-hydroxy.	8.71	7600	JDN
02	002303-17-5	Triallate	9.04	4700	JDN
03	000072-55-9	p,p'-DDE	10.80	1800	JDN
04	000053-19-0	Mitotane	10.88	3400	JDN
05	1000158-20-4	3-Butanone, 1,1-bis(4-chlor.	11.23	13000	JDN
06	000789-02-6	o,p'-DDT	11.57	25000	JDN
07		UNKNOWN	11.92	2200	JD
08		UNKNOWN	12.84	2300	JD
09	001516-94-5	4,4'-Ethylenebis(2,6-di-ter.	13.09	9500	JDN
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-05  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9035.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 22.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 8.2 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1700	J
02		UNKNOWN	1.23	950	J
03		UNKNOWN	7.03	610	J
04	000128-37-0	Butylated Hydroxytoluene	7.21	940	JN
05		UNKNOWN	7.51	320	J
06		UNKNOWN	7.58	330	J
07		UNKNOWN	7.97	260	J
08	000616-55-7	Phenol, 4,6-di(1,1-dimethyl-	8.01	600	JN
09		UNKNOWN	8.62	260	J
10	000832-69-9	Phenanthrene, 1-methyl-	9.52	400	JN
11	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.55	560	JN
12	002531-84-2	Phenanthrene, 2-methyl-	9.60	760	JN
13	000203-64-5	4H-Cyclopenta[def]phenanthre	9.63	830	JN
14	003770-48-7	4-Methylcarbazole	9.77	350	JN
15	006510-65-2	1-Methylcarbazole	9.80	300	JN
16		UNKNOWN	9.89	870	J
17		UNKNOWN	10.07	300	J
18		UNKNOWN	10.11	460	J
19	002789-88-0	di-p-Tolylacetylene	10.18	680	JN
20	029887-33-0	(2,3,4,5-Tetrachloro-2,4-cy.	10.31	380	JN
21		UNKNOWN	10.47	340	J
22	000243-17-4	11H-Benzo[b]fluorene	11.04	370	JN
23	002381-21-7	Pyrene, 1-methyl-	11.27	250	JN
24	000789-02-6	o,p'-DDT	11.57	280	JN
25	001516-94-5	4,4'-Ethylenebis(2,6-di-ter.	13.10	12000	JN
26		UNKNOWN	13.13	660	J
27	000192-97-	Benzo[e]pyrene	13.43	2300	JN
28		UNKNOWN	13.47	1000	J
29		UNKNOWN	15.28	1800	J
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S5DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-05RE1  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9063.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 22.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 8.2 Dilution Factor: 25.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	002381-21-7	Pyrene, 1-methyl-	11.04	2300	JDN
02	001516-94-5	4,4'-Ethylenebis(2,6-di-ter.	13.09	9400	JDN
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
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14					
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27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-06  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9053.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 32.2 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	2900	J
02		UNKNOWN	1.23	2400	J
03		UNKNOWN	1.34	160	J
04		UNKNOWN	2.02	390	J
05		UNKNOWN	2.17	390	J
06		UNKNOWN	2.91	120	J
07		UNKNOWN	3.17	160	J
08	000481-39-0	1,4-Naphthalenedione, 5-hyd.	7.33	3300	JN
09	002531-84-2	Phenanthrene, 2-methyl-	9.53	150	JN
10	000613-12-7	Anthracene, 2-methyl-	9.56	170	JN
11	000203-64-5	4H-Cyclopenta[def]phenanthre	9.64	250	JN
12		UNKNOWN	9.69	110	J
13	137235-51-9	1,2,4,8-Tetramethylbicyclo[.	9.90	160	JN
14	000084-65-1	9,10-Anthracenedione	9.92	190	JN
15	001576-67-6	Phenanthrene, 3,6-dimethyl-	10.20	150	JN
16		UNKNOWN	10.23	120	J
17	005737-13-3	Cyclopenta(def)phenanthrenon	10.29	150	JN
18		UNKNOWN	10.48	170	J
19	003442-78-2	Pyrene, 2-methyl-	11.17	120	JN
20	000239-35-0	Benzo[b]naphtho[2,1-d]thiop.	11.79	110	JN
21		UNKNOWN	11.92	100	J
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	910	

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-07  
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D9036.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 5.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1800	J
02	000563-80-4	2-Butanone, 3-methyl-	1.23	950	JN
03		UNKNOWN	1.29	190	J
04		UNKNOWN	1.34	120	J
05		UNKNOWN	1.72	140	J
06		UNKNOWN	2.02	310	J
07		UNKNOWN	2.16	340	J
08		UNKNOWN	2.91	110	J
09		UNKNOWN	3.17	120	J
10		UNKNOWN	3.29	93	J
* 11	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl- (01)</del>	9.51	120	JN
* 12	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl- (02)</del>	9.54	160	JN
13	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.60	140	JN
14		UNKNOWN	9.63	220	J
15		UNKNOWN	9.88	330	J
16	000781-43-1	9,10-Dimethylanthracene	10.18	140	JN
17	005737-13-3	Cyclopenta(def)phenanthrenon	10.27	150	JN
18	032598-13-3	1,1'-Biphenyl, 3,3',4,4'-te.	10.30	250	JN
19		UNKNOWN	10.47	270	J
20	000243-42-5	Benzo[b]naphtho[2,3-d]furan	10.78	120	JN
21	000243-17-4	11H-Benzo[b]fluorene	11.03	130	JN
22	000238-84-6	11H-Benzo[a]fluorene	11.11	110	JN
23		UNKNOWN	11.78	97	J
24	034777-33-8	Benzo(c)carbazole	12.34	180	JN
25		UNKNOWN	12.93	290	J
26	000192-97-2	Benzo[e]pyrene	13.41	330	JN
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

\* "Unknown" DU 12/22/08

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S7DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38062 Mod. Ref No.:            SDG No.: C05S0  
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-07RE1  
Sample wt/vol: 30.1 (g/mL) g Lab File ID: D9058.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
% Moisture: 5.0 Decanted: (Y/N) N Date Received: 11/20/2008  
Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 5.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	4700	JD
02		UNKNOWN	1.23	12000	JD
03		UNKNOWN	2.02	430	JD
04		UNKNOWN	10.48	500	JD
05	000243-28-7	Benzo(b)carbazole	12.36	510	JDN
06					
07					
08					
09					
10					
11					
12					
13					
14					
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27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-08  
 Sample wt/vol: 30,1 (g/mL) g Lab File ID: D9038.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 6.4 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1700	J
02		UNKNOWN	1.23	1000	J
03		UNKNOWN	1.29	190	J
04		UNKNOWN	1.34	140	J
05		UNKNOWN	1.72	110	J
06		UNKNOWN	2.02	340	J
07		UNKNOWN	2.16	380	J
08		UNKNOWN	3.29	100	J
09		UNKNOWN	3.59	110	J
10		UNKNOWN	9.63	76	J
11	041464-41-9	1,1'-Biphenyl, 2,2',5,6-Tet.	9.88	270	JN
# 12	<del>052663-58-8</del>	<del>1,1'-Biphenyl, 2,3,4',6-tet.</del>	10.02	110	JN
# 13	<del>052663-58-8</del>	<del>1,1'-Biphenyl, 2,3,4',6-tet.</del>	10.24	100	JN
14	033284-54-7	1,1'-Biphenyl, 2,3,5,6-tetr.	10.30	340	JN
15	060233-24-1	1,1'-Biphenyl, 2,3',4,6-Tet.	10.47	120	JN
16	038380-01-7	1,1'-Biphenyl, 2,2',4,4',5-	10.78	82	JN
17	031508-00-6	1,1'-Biphenyl, 2,3',4,4',5-	10.87	71	JN
18	039485-83-1	1,1'-Biphenyl, 2,2',4,4',6-	11.12	83	JN
19		UNKNOWN	11.95	130	J
20		UNKNOWN	12.75	120	J
21	000083-47-6	.gamma.-Sitosterol	16.29	560	JN
22		UNKNOWN	17.31	700	J
23	001058-61-3	Stigmast-4-en-3-one	17.53	820	JN
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	250	

<sup>2</sup>EPA-designated Registry Number.

\* "unknown" DV 12/22/08

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05S9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-09  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9037.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 3.8 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	2000	J
02		UNKNOWN	1.23	1100	J
03		UNKNOWN	1.29	79	J
04		UNKNOWN	1.34	110	J
05		UNKNOWN	1.69	69	J
06		UNKNOWN	2.02	320	J
07		UNKNOWN	2.16	350	J
08		UNKNOWN	3.06	75	J
09		UNKNOWN	3.29	110	J
10	000099-55-8	Benzenamine, 2-methyl-5-nitr	7.32	110	JN
11	002834-92-6	2-Naphthalenol, 1-amino-	8.80	76	JN
12		UNKNOWN	9.63	96	J
13		UNKNOWN	9.88	210	J
14	003674-66-6	Phenanthrene, 2,5-dimethyl-	10.18	75	JN
15	033284-54-7	1,1'-Biphenyl, 2,3,5,6-tetr.	10.30	250	JN
16		UNKNOWN	10.47	78	J
17		UNKNOWN	11.82	71	J
18		UNKNOWN	11.95	110	J
19	002541-69-7	Benz[a]anthracene, 7-methyl-	12.55	84	JN
20		UNKNOWN	12.76	730	J
21		UNKNOWN	13.99	1600	J
22	002425-85-6	2-Naphthalenol, 1-[(4-methy.	14.99	1600	JN
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	230	

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-10  
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D9052.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 1.8 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	4700	J
02		UNKNOWN	1.23	12000	J
03	000544-25-2	1,3,5-Cycloheptatriene	1.83	130	JN
04		UNKNOWN	2.02	380	J
05		UNKNOWN	2.17	370	J
06		UNKNOWN	3.17	140	J
07	016606-02-3	1,1'-Biphenyl, 2,4',5-trich.	9.37	110	JN
* 08	<del>052663-58-8</del>	<del>1,1'-Biphenyl, 2,3,4',6 tet.</del>	9.90	200	JN
09	000084-65-1	9,10-Anthracenedione	9.92	100	JN
* 10	<del>052663-58-8</del>	<del>1,1'-Biphenyl, 2,3,4',6 tet.</del>	10.03	150	JN
11	041464-43-1	1,1'-Biphenyl, 2,3,3',4'-te.	10.31	430	JN
12	032598-12-2	1,1'-Biphenyl, 2,4,4',6-tet.	10.48	160	JN
13	060145-20-2	1,1'-Biphenyl, 2,2',3,3',5-	10.55	100	JN
14	000080-05-7	Phenol, 4,4'-(1-methylethyl.	10.79	140	JN
15	032598-14-4	1,1'-Biphenyl, 2,3,3',4,4'-.	10.89	140	JN
16		UNKNOWN	11.05	110	J
17	031508-00-6	1,1'-Biphenyl, 2,3',4,4',5-	11.15	150	JN
18	000082-05-3	7H-Benz[de]anthracen-7-one	11.93	70	JN
19		UNKNOWN	11.96	350	J
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	120	

<sup>2</sup>EPA-designated Registry Number.

\* "unknown" DU 12/22/08

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-11  
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D9119.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 48.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 12/03/2008  
 GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.15	660	J
02		UNKNOWN	1.21	620	J
03	000132-65-0	Dibenzothiophene	8.74	170	JN
* 04	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl (01)</del>	9.48	360	JN
* 05	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl (02)</del>	9.52	470	JN
06	000779-02-2	Anthracene, 9-methyl-	9.57	260	JN
07	000203-64-5	4H-Cyclopenta[def]phenanthre	9.60	710	JN
* 08	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl (03)</del>	9.63	280	JN
09	035465-71-5	2-Phenyl-naphthalene <sup>2</sup>	9.85	340	JN
10	000084-65-1	9,10-Anthracenedione	9.88	180	JN
11	003674-66-6	Phenanthrene, 2,5-dimethyl-	10.15	400	JN
12		UNKNOWN	10.19	290	J
13		UNKNOWN	10.24	470	J
14		UNKNOWN	10.44	540	J
15	000243-17-4	11H-Benzo[b]fluorene	11.01	200	JN
16		UNKNOWN	12.92	280	J
17		UNKNOWN	13.10	320	J
18	000192-97-2	Benzo[e]pyrene	13.38	530	JN
19		UNKNOWN	13.43	220	J
20		UNKNOWN	13.52	350	J
21		UNKNOWN	13.95	300	J
22	024471-47-4	Perylene, 3-methyl-	14.10	230	JN
23		UNKNOWN	14.34	270	J
24		UNKNOWN	15.00	200	J
25		UNKNOWN	15.19	390	J
26	000213-46-7	1,2:7,8-Dibenzophenanthrene	15.61	220	JN
27	000215-58-7	Benzo[b]triphenylene	15.68	330	JN
28	000191-24-2	Dibenzo[def,mno]chrysene	16.16	270	JN
29		UNKNOWN	17.45	260	J
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

\* "unknown" DU 12/2/08



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T1DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-11RE1  
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D9120.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 48.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 12/03/2008  
 GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.21	2000	JD
* 02	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl (01)</del>	9.48	400	JDN
* 03	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl (02)</del>	9.52	510	JDN
04		UNKNOWN	9.60	700	JD
05	035465-71-5	2-Phenyl-naphthalene	9.85	390	JDN
06	000781-43-1	9,10-Dimethylanthracene	10.15	440	JDN
07		UNKNOWN	10.24	410	JD
08		UNKNOWN	10.44	650	JD
09	003442-78-2	Pyrene, 2-methyl-	11.00	610	JDN
10	003353-12-6	Pyrene, 4-methyl-	11.12	400	JDN
11	003351-32-4	Chrysene, 2-methyl-	12.53	320	JDN
12	000848-62-4	Pregnan-20-one, (5.alpha.)-	13.14	1300	JDN
13	000192-97-2	Benzo[e]pyrene	13.38	490	JDN
14		UNKNOWN	13.51	600	JD
15		UNKNOWN	15.18	700	JD
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

\* "unknown" DU 12/22/08



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05S0  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009757-13  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9047.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 6.9 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	1200	J
02	000149-57-5	Hexanoic acid, 2-ethyl-	4.58	3000	JN
03		UNKNOWN	5.46	670	J
04		UNKNOWN	5.66	1700	J
05		UNKNOWN	5.71	630	J
06	000098-54-4	Phenol, p-tert-butyl-	5.84	5200	JN
07		UNKNOWN	9.84	1000	J
08	000057-11-4	Octadecanoic acid	10.69	1400	JN
09	000080-05-7	Phenol, 4,4'-(1-methylethyl.	10.80	2000	JN
10		UNKNOWN	11.06	1500	J
11		UNKNOWN	11.39	1300	J
12		UNKNOWN	11.52	5900	J
13		UNKNOWN	11.57	1400	J
14		UNKNOWN	11.75	1400	J
15		UNKNOWN	11.83	920	J
16		UNKNOWN	11.88	3400	J
17		UNKNOWN	11.98	16000	J
18		UNKNOWN	12.05	1200	J
19		UNKNOWN	12.41	1700	J
20	110936-78-2	7-Oxodehydroabietic acid, m.	12.49	910	JN
21		UNKNOWN	12.53	940	J
22		UNKNOWN	12.92	3000	J
23		UNKNOWN	13.62	710	J
24		UNKNOWN	14.53	1800	J
25		UNKNOWN	14.71	2500	J
26		UNKNOWN	14.89	1300	J
27		UNKNOWN	14.99	4200	J
28		UNKNOWN	16.01	1900	J
29		UNKNOWN	16.27	3100	J
30		UNKNOWN	17.71	3900	J
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : December 31, 2008  
SUBJECT: Region III Data QA Review  
FROM : Khin-Cho Thaug *ff jcw KCT*  
Region III ESAT RPO (3EA21)  
TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Tank Car Corporation of America Site (Case # 38062; SDG#: C05W3 ) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Jordan Vaughn (TTEMI/EPA)

TO File #: 0014 TDF#: 12034

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-530  
Telephone 410-305-3037 Facsimile 410-305-3597

**DATE:** December 29, 2008

**SUBJECT:** Organic Data Validation (M2 Level)  
Case: 38062  
SDG: C05W3  
Site: Tank Car Corporation of America

**FROM:** Habteab Ghebreyesus *HG*  
Organic Data Reviewer

Mahboobeh Mecanic *MM*  
Senior Oversight Chemist

**TO:** Khin-Cho Thuang  
ESAT Region 3 Project Officer

## OVERVIEW

Case 38062, Sample Delivery Group (SDG) C05W3, consisted of fourteen (14) soil samples submitted to A4 Scientific, Inc. (A4) for volatiles, semivolatiles, pesticides and aroclors analyses. The sample set included one (1) field duplicate pair. Samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through Routine Analytical Services (RAS) program.

## SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of raw data and sample spectra. Areas that may impact data usability are listed below.

In SOM01.2, 1,4-dioxane is no longer a target analyte by Trace volatile and Trace volatile SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

Several samples reported positive results for aroclor1254. In pesticide /PCB analyses where multicomponent compounds are detected, false positives for single component compounds are common. Caution should be exercised in interpreting positive pesticide results in these samples.

**MAJOR PROBLEMS**

- Relative Response Factors (RRFs) were less than 0.05 for acetone and 1,2-dibromo-3-chloropropane in the volatile initial and continuing calibrations. Positive results for these compounds were qualified “L” unless superseded by “J”. Quantitation limits for these compounds were rejected and qualified “R” in affected samples on the Data Summary Forms (DSFs).
- Recovery of surrogate Tetrachloro-m-xylene (TCX) was reported as zero (0%) percent on one column in aroclor samples C05W3 and C05X2 and the recovery on the second column was less than ten percent (<10%). Review of chromatograms of these samples showed matrix interferences in the retention time of the surrogates. Quantitation limits have been rejected and qualified “R” on the DSF.
- Aroclor sample C05W6 reported less than ten percent (<10%) recovery of surrogate TCX on one column and below control limit on the second column. Quantitation limits have been rejected and qualified “R” on the DSF.

**MINOR PROBLEMS**

- Volatile samples C05X8 and C05X9 had recovery of Deuterated Monitoring Compound (DMC) vinyl chloride-d3 and sample C05W9 had the recovery of DMC toluene-d8 outside the lower QC limits. Positive results for compounds associated with these DMCs in these samples were qualified “L” and quantitation limits for compounds associated with these DMCs in these samples were qualified “UL” on DSFs.
- Semivolatile sample C05W3 had recoveries of DMCs dimethylphthalate-d6, fluorene-d10, pyrene-d10 and benzo(a)pyrene-d12 below the lower QC limits. Positive results for compounds associated with these DMCs in this sample were qualified “L” and quantitation limits for compounds associated with these DMCs in this sample were qualified “UL” on DSFs.
- In the volatile fraction recovery of DMC 1,2-dichloroethane-d4 in volatile sample C05X1 and the recovery of DMC 2-hexanone-d5 in sample C05W6 were outside the upper control limits. Positive results for compounds associated with these DMCs in these samples were qualified “K” on the DSF unless superseded by “J” or “B”.
- In the pesticide analysis, recoveries of surrogates TCX and Decachlorobiphenyl (DCB) were outside the upper QC limits on one column in sample C05X8. Positive results were qualified “J” on the DSF.
- In the aroclor analysis, recovery of surrogate TCX was below the lower QC limits on both columns in sample C05W7. Quantitation limits in this sample were qualified “UJ” on the DSF.

- Positive results for pesticide and aroclor compounds with percent differences (%Ds) greater than twenty-five percent (>25%) between the two (2) analytical columns were qualified “J” on the DSFs.
- Several compounds failed precision criteria [percent relative standard deviation (%RSD) or percent difference (%D)] in the volatile and semivolatile initial and/or continuing calibrations. Positive results reported for these compounds in affected samples were qualified “J” on the DSFs unless superseded by “B”. The precision did not exceed the fifty percent (50%) criteria; therefore, quantitation limits were not qualified.

## NOTES

- Compounds detected below the Contract Required Quantitation Limits (CRQLs) were qualified “J” on the DSFs.
- In the aroclor analysis, recoveries of surrogate TCX and on both columns and DCB on one column were below the lower QC limits in the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of spiked sample C05W6. No data were qualified based on these findings.
- Several reported recoveries and RPDs for pesticide Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were outside control limits on both columns. No data were qualified based on these findings.
- In the aroclor MS/MSD analyses of sample C05W6 the recoveries and RPDs were outside the control limits on both columns. No data were qualified based on this QC outlier.
- Medium level volatile samples C05W3, C05X0 and C05X2 had recovery of DMC chloroethane-d5 outside the lower QC limit. There were no positive results reported for compounds associated with this DMC in these samples and no data were qualified based on this finding.
- Recovery of DMC 1,4-dioxane-d8 was outside the upper control limit in several volatile samples. There were no positive results reported for the compound associated with this DMC in these samples and no data were qualified based on this finding.
- Methylene Chloride was detected in the analysis of volatile storage blank, VHBLK01, at a concentration of 3.3J ug/kg. Samples with concentrations of this common laboratory contaminant less than ten times (<10X) the blank concentration have been qualified “B” on the DSFs.
- Based on sample screening, samples C05W3, C05W6, C05W8, C05W9, C05X0 and C05X2 were initially analyzed at a ten fold (10X) dilution for the pesticide fraction. The CRQLs are elevated in these samples due to this dilution.

- Tentatively identified compounds (TICs) were reviewed during data validation. TICs identified as the same compound at different retention times were changed to “unknowns” by the reviewer on the TIC Form Is. Compounds identified from another fraction were crossed-off the TIC Form Is by the reviewer. Compounds identified as common laboratory contaminants were crossed off TIC Form Is by the reviewer. TIC Form Is for samples in which TICs were identified are included in Appendix E.
- Encore tubes were used for collection of volatile soil samples in this sample set. All samples were transferred and kept frozen until time of analysis.
- Form Is for method and instrument blanks for aroclor fraction are not included with this package.
- Results for field duplicate pair C05W8/C05W9 were comparable for all compounds except acetone and cyclohexane in the volatile fraction, 4-methylphenol, naphthalene, 2-methylnaphthalene, 1,1'-biphenyl and bis(2-ethylhexyl)phthalate in the semivolatile fraction, heptachlor, dieldrin, endrin, endosulfan II, endrin ketone and alpha-chlordane in the pesticide fraction.
- The concentration of several compounds in the following samples exceeded the calibration range in the initial analyses. These samples were diluted and reanalyzed to bring the concentration of these compounds within the calibration range. Results for these compounds are reported from the diluted analysis and annotated with (+) symbol on the DSFs by the reviewer.

<u>Fraction</u>	<u>Samples</u>	<u>Dilution Factor</u>	<u>Compounds</u>
Volatiles	C05W3	850X	Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, Styrene
	C05W9	50X	Acetone
	C05X0	571X	Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, Styrene
	C05X2	718X	Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, Styrene
SVOA	C05W3	1363.6X	Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Dibenzofuran, Fluorene, Phenanthrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene



<u>Fraction</u>	<u>Samples</u>	<u>Dilution Factor</u>	<u>Compounds</u>
	C05W6	250X	Naphthalene, 2-Methylnaphthalene Acenaphthene, Dibenzofuran, Fluorene, Phenathrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b) fluoranthene, Benzo(a)pyrene
	C05W8	25X	Naphthalene, 2-Methylnaphthalene, Acenaphthene, Dibenzofuran, Fluorene, Phenathrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b) fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene
	C05X0	25X	Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Dibenzofuran, Fluorene, Phenathrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene
	C05X2	545.5X	Naphthalene, 2-Methylnaphthalene, Fluorene, Phenathrene, Fluoranthene, Pyrene
	C05X6	10X	Naphthalene
	C05X8	20X	Dibenzofuran, Fluorene, Phenathrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b) fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Indeno(1,2,3-cd)pyrene
Pesticide	C05W3	20X	gamma-Chlordane
Aroclor	C05W8RE	10X	AR-1254
	C05W9RE	10X	AR-1254
	C05X0RE	2X	AR-1254

- Sample weights other than five (5) grams were used for volatiles and other than thirty (30) grams for the extraction of smivolatile and aroclor samples. The dilution factors reported on the DSFS were adjusted to reflect actual sample weight used.
- Reported recoveries for aroclors in Laboratory Control Sample (LCS) analyses were within QC limits on both columns.
- Non-spiked compounds were detected in the pesticide analyses of sample C05W6 and the MS/MSD analyses of this sample. Results and precision estimates are as follows

<u>Compound</u>	<u>Concentration ug/kg</u>			<u>%RSD</u>
	<u>C05W6</u>	<u>MS</u>	<u>MSD</u>	
alph-BHC	85	92	110	13
beta-BHC	170	94	150	28
delta-BHC	42J	47	85	40
4,4'-DDE	26J	22J	43J	37
4,4'-DDD	150	160	250	30
Methoxychlor	280J	140J	180J	36
Endrin ketone	130	33J	91	58
Endrin aldehyde	350	180	340	33
Alpha-Chlordane	260	130	250	34
Gamma-Chlordane	270	110	240	41

%RSD = Percent Relative Standard Deviation

Data for Case 38062, SDG C05W3, were reviewed in accordance with EPA Region 3 Innovative Approaches (Level M2) for Validation of Organic Data, June 1995.

### ATTACHMENTS

- 1) Appendix A Glossary of Data Qualifier Terms
- 2) Appendix B Data Summary Forms
- 3) Appendix C Chain-of-Custody Records
- 4) Appendix D Laboratory Case Narrative
- 5) Appendix E Tentatively Identified Compounds (TICs)

DCN: 38062\_C05W3

## Appendix A

### Glossary of Data Qualifier Codes

## GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

### CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

### CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B  
Data Summary Forms

DATA SUMMARY FORM: Volatiles

Case #: 38062

SDG : C05W3

Number of Soil Samples : 14

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C05W3	C05W5	C05W6	C05W7	C05W8						
Sampling Location : (Prefix: TCCA-SB)	-01-0405	-03-0304	-04-0607	-04-1415	-05-0203						
Field QC:					Dup of C05W9						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008						
Time Sampled :	09:14	10:48	11:18	11:27	13:49						
%Moisture :	18.5	18.3	20.3	19.9	13.0						
Dilution Factor :	1.52/850	1.18	0.88	1.08	0.86						
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0										
Chloromethane	5.0										
Vinyl chloride	5.0										
Bromomethane	5.0										
Chloroethane	5.0										
Trichlorofluoromethane	5.0										
1,1-Dichloroethene	5.0										
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0										
Acetone	10	84	J			51		130	J	200	J
Carbon Disulfide	5.0									3.5	J
Methyl acetate	5.0	2.2	J								
Methylene chloride	5.0	38	B	13	B	12	B	20	B	19	B
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0					8.2	J	1.5	J	1.0	J
1,1-Dichloroethane	5.0									1.2	J
cis-1,2-Dichloroethene	5.0										
2-Butanone	10	42				26		37		160	
Bromochloromethane	5.0										
Chloroform	5.0	4.6	J								
1,1,1-Trichloroethane	5.0										
Cyclohexane	5.0					26					
Carbon tetrachloride	5.0										
Benzene	5.0	42000 +				42				7.4	
1,2-Dichloroethane	5.0										
1,4-Dioxane	100										
Trichloroethene	5.0	4.7	J			1.4	J			11	
Methylcyclohexane	5.0	2.7	J							3.5	J
1,2-Dichloropropane	5.0										
Bromodichloromethane	5.0										
cis-1,3-Dichloropropene	5.0							6.0	J		
4-Methyl-2-pentanone	10	24				10	J	4.1	J	5.5	J
Toluene	5.0	110000 +				58		0.71	J	41	
trans-1,3-Dichloropropene	5.0					3.6	J	4.7	J		

+ = Results reported from dilution

DATA SUMMARY FORM: Volatiles

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05W3	C05W5	C05W6	C05W7	C05W8						
Sampling Location : (Prefix: TCCA-SB)	-01-0405	-03-0304	-04-0607	-04-1415	-05-0203						
Field QC:					Dup of C05W9						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008						
Time Sampled :	09:14	10:48	11:18	11:27	13:49						
%Moisture :	18.5	18.3	20.3	19.9	13.0						
Dilution Factor :	1.52/850	1.18	0.88	1.08	0.86						
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0	6.4	J			1.3	J				
Tetrachloroethene	5.0	0.35	J			3.1	J			0.81	J
2-Hexanone	10					22	K				
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0					3.1	J				
Ethylbenzene	5.0	32000 +				35				38	
o-Xylene	5.0	73000 +				60				63	
m,p-Xylene	5.0	170000 +				120		1.5	J	140	
Styrene	5.0	78000 +				25	J			20	
Bromoform	5.0										
Isopropylbenzene	5.0	75				6.3				6.6	
1,1,1,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0					9.5					
1,2-Dichlorobenzene	5.0					6.3					
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0					7.0		0.69	J		
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

+ = Results reported from dilution

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05W9	C05X0	C05X1	C05X2	C05X5						
Sampling Location : (Prefix: TCCA-SB)	-05-0304	-06-0506	-07-0506	-02-0304	-08-0304						
Field QC:	Dup of C05W8										
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	13:54	14:42	15:10	09:57	08:55						
%Moisture :	15.0	15.6	22.4	18.2	20.4						
Dilution Factor :	0.84/50.3	1.01/571	0.91	1.66/718	0.85						
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0										
Chloromethane	5.0										
Vinyl chloride	5.0										
Bromomethane	5.0										
Chloroethane	5.0										
Trichlorofluoromethane	5.0										
1,1-Dichloroethene	5.0										
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0										
Acetone	10	590 +		450	J	92	J	190	J		R
Carbon Disulfide	5.0	5.1		16							
Methyl acetate	5.0			20							
Methylene chloride	5.0	15	B	15	B	9.9	B	68	J	14	B
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0			4.1	J						
1,1-Dichloroethane	5.0										
cis-1,2-Dichloroethene	5.0										
2-Butanone	10	140		140				98	J		
Bromochloromethane	5.0										
Chloroform	5.0										
1,1,1-Trichloroethane	5.0										
Cyclohexane	5.0	52		36				8.6	J		
Carbon tetrachloride	5.0										
Benzene	5.0	7.7		33000 +		4.7	J	32000 +			
1,2-Dichloroethane	5.0										
1,4-Dioxane	100										
Trichloroethene	5.0	8.5	L	2.1	J			51	J		
Methylcyclohexane	5.0			60							
1,2-Dichloropropane	5.0										
Bromodichloromethane	5.0										
cis-1,3-Dichloropropene	5.0										
4-Methyl-2-pentanone	10	5.5	J	4.8	J			31	J		
Toluene	5.0	33	L	64000 +		1.4	J	86000 +			
trans-1,3-Dichloropropene	5.0										

+ = Results reported from dilution



DATA SUMMARY FORM: Volatiles

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05W9	C05X0	C05X1	C05X2	C05X5						
Sampling Location : (Prefix: TCCA-SB)	-05-0304	-06-0506	-07-0506	-02-0304	-08-0304						
Field QC:	Dup of C05W8										
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	13:54	14:42	15:10	09:57	08:55						
%Moisture :	15.0	15.6	22.4	18.2	20.4						
Dilution Factor :	0.84/50.3	1.01/571	0.91	1.66/718	0.85						
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0			18							
Tetrachloroethene	5.0		UL								
2-Hexanone	10			85							
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0							6.8	J		
Ethylbenzene	5.0	40	L	46000 +				380			
o-Xylene	5.0	62	L	41000 +				50000 +			
m,p-Xylene	5.0	130	L	100000 +				110000 +			
Styrene	5.0	20	L	31000 +				71000 +			
Bromoform	5.0										
Isopropylbenzene	5.0	7.5	L	73				37			
1,1,1,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0			5.6	J			48	J		
1,2-Dichlorobenzene	5.0			26				230	J		
1,2-Dibromo-3-chloropropane	5.0		R						R		R
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

+ = Results reported from dilution



DATA SUMMARY FORM: Volatiles

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05X6	C05X7	C05X8	C05X9							
Sampling Location : (Prefix: TCCA-SB)	-09-0304	-10-0506	-11-0304	-12-0607							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/20/2008	11/20/2008	11/20/2008	11/20/2008							
Time Sampled :	09:19	10:00	10:11	11:08							
%Moisture :	21.5	24.1	22.2	20.2							
Dilution Factor :	0.91	0.91	0.87	0.91							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
Tetrachloroethene	5.0										
2-Hexanone	10					38					
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0										
Ethylbenzene	5.0	31				8.0					
o-Xylene	5.0	19				11					
m,p-Xylene	5.0	14				6.5					
Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0	8.3				2.8	J				
1,1,2,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

DATA SUMMARY FORM: BNA

Case #: 38062

SDG : C05W3

Number of Soil Samples : 14

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C05W3	C05W5	C05W6	C05W7	C05W8						
Sampling Location : (Prefix: TCCA-SB)	-01-0405	-03-0304	-04-0607	-04-1415	-05-0203						
Field QC:					Dup of C05W9						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008						
Time Sampled :	09:14	10:48	11:18	11:27	13:49						
%Moisture :	18.5	18.3	20.3	19.9	13.0						
Dilution Factor :	27.3/1363.6	0.99	25.0/250	0.99	1.0/25.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170	19000						230		180	J
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170	32000				1300	J			32	J
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170	1900	J							54	J
4-Methylphenol	170	72000								470	
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170	49000				3500	J			57	J
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	2800000 +		140	J	710000 +		43	J	43000 +	
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170		UL								
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	420000 +		27	J	250000 +				6600 +	
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	59000	L			33000				1900	
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170		UL								
2,6-Dinitrotoluene	170										
Acenaphthylene	170	180000 +	J			48000		75	J	2400	
3-Nitroaniline	330										
Acenaphthene	170	100000 +	J			120000 +		22	J	6700 +	

+ = Results reported from dilution

Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05W3	C05W5	C05W6	C05W7	C05W8						
Sampling Location : (Prefix: TCCA-SB)	-01-0405	-03-0304	-04-0607	-04-1415	-05-0203						
Field QC:					Dup of C05W9						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008						
Time Sampled :	09:14	10:48	11:18	11:27	13:49						
%Moisture :	18.5	18.3	20.3	19.9	13.0						
Dilution Factor :	27.3/1363.6	0.99	25.0/250	0.99	1.0/25.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170	220000 +	J	17	J	130000 +		29	J	6900 +	
2,4-Dinitrotoluene	170										
Diethylphthalate	170		UL								
Fluorene	170	330000 +		29	J	250000 +		50	J	11000 +	
4-Chlorophenyl-phenylether	170		UL								
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170		UL								
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	930000 +		83	J	720000 +		210	J	34000 +	
Anthracene	170	200000 +	J	28	J	210000 +		180	J	15000 +	
Carbazole	170	120000 +	J			81000		43	J	5700 +	
Di-n-butylphthalate	170		UL								
Fluoranthene	170	580000 +		52	J	480000 +		53	J	23000 +	
Pyrene	170	390000 +		39	J	380000 +		41	J	17000 +	
Butylbenzylphthalate	170		UL								
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	200000 +	J	28	J	200000 +		2600		8400 +	
Chrysene	170	160000 +	J	23	J	140000 +		2200		7700 +	
Bis(2-ethylhexyl)phthalate	170		UL	26	J					870	
Di-n-octylphthalate	170		UL								
Benzo(b)fluoranthene	170	170000 +	J	20	J	180000 +				8000 +	
Benzo(k)fluoranthene	170	45000	L			48000				1700	
Benzo(a)pyrene	170	130000 +	J	17	J	130000 +				6100 +	
Indeno(1,2,3-cd)pyrene	170	75000	L			74000				3700 +	
Dibenzo(a,h)anthracene	170	22000	L			22000		380		1300	
Benzo(g,h,i)perylene	170	63000	L			63000				2900	
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

+ = Results reported from dilution

DATA SUMMARY FORM: BNA

Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05W9	C05X0	C05X1	C05X2	C05X5						
Sampling Location : (Prefix: TCCA-SB)	-05-0304	-06-0506	-07-0506	-02-0304	-08-0304						
Field QC:	Dup of C05W8										
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	13:54	14:42	15:10	09:57	08:55						
%Moisture :	15.0	15.6	22.4	18.2	20.4						
Dilution Factor :	25	1.0/25.0	1.0	27.2/545.5	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170			2600				16000			
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170			1100				12000			
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170	1600	J	2600				30000			
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170			1200				14000			
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	74000		59000 +		100	J	1200000 +		57	J
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	13000		17000 +		18	J	150000 +			
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	2900	J	2800				26000			
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170	3500	J	5100 +		32	J	45000			
3-Nitroaniline	330										
Acenaphthene	170	8500		8700 +		94	J	49000			

+ = Results reported from dilution

Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05W9	C05X0	C05X1	C05X2	C05X5						
Sampling Location : (Prefix: TCCA-SB)	-05-0304	-06-0506	-07-0506	-02-0304	-08-0304						
Field QC:	Dup of C05W8										
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	13:54	14:42	15:10	09:57	08:55						
%Moisture :	15.0	15.6	22.4	18.2	20.4						
Dilution Factor :	25	1.0/25.0	1.0	27.2/545.5	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170	8600		10000 +		88	J	81000			
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170	13000		17000 +		160	J	130000 +			
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170			1600							
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	36000		47000 +		260		370000 +		47	J
Anthracene	170	15000		33000 +		180	J	86000		22	J
Carbazole	170	6100		14000 +		80	J	49000			
Di-n-butylphthalate	170										
Fluoranthene	170	23000		26000 +		460		210000 +		34	J
Pyrene	170	17000		21000 +		370		170000 +		30	J
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	8800		9700 +		140	J	64000			
Chrysene	170	7300		10000 +		150	J	54000			
Bis(2-ethylhexyl)phthalate	170			3100							
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170	7800		8000 +		130	J	60000			
Benzo(k)fluoranthene	170	2500	J	4000 +	J	61	J	16000			
Benzo(a)pyrene	170	5800		6900 +		88	J	45000			
Indeno(1,2,3-cd)pyrene	170	3300	J	3900 +	J			25000			
Dibenzo(a,h)anthracene	170	890	J	1200				7100			
Benzo(g,h,i)perylene	170	2800	J	3100		51	J	21000			
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

+ = Results reported from dilution

DATA SUMMARY FORM: BNA

Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05X6	C05X7	C05X8	C05X9							
Sampling Location : (Prefix: TCCA-SB)	-09-0304	-10-0506	-11-0304	-12-0607							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/20/2008	11/20/2008	11/20/2008	11/20/2008							
Time Sampled :	09:19	10:00	10:11	11:08							
%Moisture :	21.5	24.1	22.2	20.2							
Dilution Factor :	1.0/10.0	1.0	0.99/19.9	1.0							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170	57	J			49	J				
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170	140	J			130	J				
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170	53	J								
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	8700 +		36	J	1600		16	J		
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	860				1800					
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	690				520					
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170	80	J			1900					
3-Nitroaniline	330										
Acenaphthene	170	1400				3000					

+ = Results reported from dilution



Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05X6	C05X7	C05X8	C05X9							
Sampling Location : (Prefix: TCCA-SB)	-09-0304	-10-0506	-11-0304	-12-0607							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/20/2008	11/20/2008	11/20/2008	11/20/2008							
Time Sampled :	09:19	10:00	10:11	11:08							
%Moisture :	21.5	24.1	22.2	20.2							
Dilution Factor :	1.0/10.0	1.0	0.99/19.9	1.0							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170	2100				4800 +					
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170	1700		47	J	12000 +					
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	2500		47	J	33000 +		30	J		
Anthracene	170	220	J	200	J	51000 +		35	J		
Carbazole	170	2000		79	J	16000 +		17	J		
Di-n-butylphthalate	170							28	J		
Fluoranthene	170	340		80	J	37000 +		27	J		
Pyrene	170	260		66	J	31000 +		20	J		
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	120	J	43	J	12000 +					
Chrysene	170	120	J	46	J	10000 +					
Bis(2-ethylhexyl)phthalate	170							57	J		
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170	110	J	40	J	10000 +					
Benzo(k)fluoranthene	170	50	J	21	J	3200					
Benzo(a)pyrene	170	86	J	30	J	6900 +					
Indeno(1,2,3-cd)pyrene	170	51	J			4200 +	J				
Dibenzo(a,h)anthracene	170					1400					
Benzo(g,h,i)perylene	170	38	J			3900 +	J				
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / ((100 - \%Moisture) / 100)$

Revised 09/99

+ = Results reported from dilution

DATA SUMMARY FORM: Pesticides

Case #: 38062

SDG : C05W3

Number of Soil Samples : 14

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C05W3	C05W5	C05W6	C05W7	C05W8						
Sampling Location : (Prefix: TCCA-SB)	-01-0405	-03-0304	-04-0607	-04-1415	-05-0203						
Field QC:					Dup of C05W9						
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008						
Time Sampled :	09:14	10:48	11:18	11:27	13:49						
%Moisture :	18.5	18.3	20.3	19.9	13.0						
Dilution Factor :	9.9/19.8	1.0	10.0	0.99	9.9						
Pesticide Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.7	150				85	J				
beta-BHC	1.7	140	J			170	J			94	J
delta-BHC	1.7	44	J			42	J				
gamma-BHC (Lindane)	1.7	48	J								
Heptachlor	1.7	69	J			58	J			23	J
Aldrin	1.7					38	J				
Heptachlor epoxide	1.7									25	J
Endosulfan I	1.7										
Dieldrin	3.3									55	J
4,4'-DDE	3.3	63	J			26	J			89	
Endrin	3.3	150	J			190	J			48	J
Endosulfan II	3.3	54	J							140	
4,4'-DDD	3.3	220	J			150	J			100	J
Endosulfan sulfate	3.3	170	J								
4,4'-DDT	3.3	150	J			180	J			520	
Methoxychlor	17					280	J			210	J
Endrin ketone	3.3	140	J			130				21	J
Endrin aldehyde	3.3	240	J			350	J			82	J
alpha-Chlordane	1.7	170	J			260					
gamma-Chlordane	1.7	420 +	J			270				29	J
Toxaphene	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

+ = Results reported from dilution

Case #: 38062 SDG : C05W3  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C05W9	C05X0	C05X1	C05X2	C05X5						
Sampling Location : (Prefix: TCCA-SB)	-05-0304	-06-0506	-07-0506	-02-0304	-08-0304						
Field QC:	Dup of C05W8										
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	13:54	14:42	15:10	09:57	08:55						
%Moisture :	15.0	15.6	22.4	18.2	20.4						
Dilution Factor :	10.0	9.9	0.99	9.9	1.0						
Pesticide Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.7			56	J			59	J		
beta-BHC	1.7	68	J	160				200	J		
delta-BHC	1.7			22	J						
gamma-BHC (Lindane)	1.7										
Heptachlor	1.7			66	J			76	J		
Aldrin	1.7										
Heptachlor epoxide	1.7	18	J	15	J						
Endosulfan I	1.7										
Dieldrin	3.3	29	J								
4,4'-DDE	3.3	90	J								
Endrin	3.3	130	J	96	J			110	J		
Endosulfan II	3.3	66	J	54	J			47	J		
4,4'-DDD	3.3	130	J	100				110	J		
Endosulfan sulfate	3.3			100	J						
4,4'-DDT	3.3	390		110	J			110	J		
Methoxychlor	17	210	J	430	J			380	J		
Endrin ketone	3.3			40	J						
Endrin aldehyde	3.3	82		110				240			
alpha-Chlordane	1.7	23	J	130	J			87	J		
gamma-Chlordane	1.7	32	J	130	J			220	J		
Toxaphene	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05X6	C05X7	C05X8	C05X9							
Sampling Location : (Prefix: TCCA-SB)	-09-0304	-10-0506	-11-0304	-12-0607							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/20/2008	11/20/2008	11/20/2008	11/20/2008							
Time Sampled :	09:19	10:00	10:11	11:08							
%Moisture :	21.5	24.1	22.2	20.2							
Dilution Factor :	1.0	0.99	1.0	0.99							
Pesticide Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.7										
beta-BHC	1.7										
delta-BHC	1.7					4.2	J				
gamma-BHC (Lindane)	1.7										
Heptachlor	1.7					5.3	J				
Aldrin	1.7										
Heptachlor epoxide	1.7										
Endosulfan I	1.7										
Dieldrin	3.3										
4,4'-DDE	3.3					12	J				
Endrin	3.3										
Endosulfan II	3.3					9.1	J				
4,4'-DDD	3.3					30	J				
Endosulfan sulfate	3.3					8.5					
4,4'-DDT	3.3					48					
Methoxychlor	17					50	J				
Endrin ketone	3.3					7.4	J				
Endrin aldehyde	3.3					9.8	J				
alpha-Chlordane	1.7										
gamma-Chlordane	1.7					8.5	J				
Toxaphene	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

Case #: 38062  
 Site :  
 Lab. :

SDG : C05W3  
 TANK CAR CORPORATION OF AMERICA  
 A4

Number of Soil Samples : 14  
 Number of Water Samples : 0  
 Number of Sediment Samples : 0

Sample Number :		C05W3	C05W5	C05W6	C05W7	C05W8RE					
Sampling Location : (Prefix: TCCA-SB)		-01-0405	-03-0304	-04-0607	-04-1415	-05-0203					
Field QC:						Dup of C05W9					
Matrix :		Soil	Soil	Soil	Soil	Soil					
Units :		ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg					
Date Sampled :		11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008					
Time Sampled :		09:14	10:48	11:18	11:27	13:49					
%Moisture :		18.5	18.3	20.3	19.9	13.0					
Dilution Factor :		0.99	1.0	1.0	0.99	0.99/9.9					
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aroclor-1016	33		R				R		UJ		
Aroclor-1221	33		R				R		UJ		
Aroclor-1232	33		R				R		UJ		
Aroclor-1242	33		R				R		UJ		
Aroclor-1248	33		R				R		UJ		
Aroclor-1254	33		R				R		UJ	2500 +	
Aroclor-1260	33		R				R		UJ		
Aroclor-1262	33		R				R		UJ		
Aroclor-1268	33		R				R		UJ		

Sample Number :		C05W9RE	C05X0RE	C05X1	C05X2	C05X5					
Sampling Location : (Prefix: TCCA-SB)		-05-0304	-06-0506	-07-0506	-02-0304	-08-0304					
Field QC:		Dup of C05W8									
Matrix :		Soil	Soil	Soil	Soil	Soil					
Units :		ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg					
Date Sampled :		11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008					
Time Sampled :		13:54	14:42	15:10	09:57	08:55					
%Moisture :		15.0	15.6	22.4	18.2	20.4					
Dilution Factor :		1.0/10	0.99/1.99	0.99	0.99	1.0					
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aroclor-1016	33								R		
Aroclor-1221	33								R		
Aroclor-1232	33								R		
Aroclor-1242	33								R		
Aroclor-1248	33								R		
Aroclor-1254	33	2100 +		540 +					R		
Aroclor-1260	33								R		
Aroclor-1262	33								R		
Aroclor-1268	33								R		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

+ = Results reported from dilution

Case #: 38062

SDG : C05W3

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05X6	C05X7	C05X8RE	C05X9							
Sampling Location : (Prefix: TCCA-SB)	-09-0304	-10-0506	-11-0304	-12-0607							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/20/2008	11/20/2008	11/20/2008	11/20/2008							
Time Sampled :	09:19	10:00	10:11	11:08							
%Moisture :	21.5	24.1	22.2	20.2							
Dilution Factor :	1.0	0.99	1.0	0.99							
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aroclor-1016	33										
Aroclor-1221	33										
Aroclor-1232	33										
Aroclor-1242	33										
Aroclor-1248	33										
Aroclor-1254	33					46					
Aroclor-1260	33										
Aroclor-1262	33										
Aroclor-1268	33										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits:  $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

Appendix C  
Chain-of-Custody Records

# U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY	
RAS#	Analytical TAT
DAS#	
NSF#	14

38062

Date: 11/10/2008		Site Activity: Removal Site Evaluations	
Site Name: Tank Car Corporation of America		Street Address: 1725 Walnut Ave	
City: Orland		Latitude:	
State: PA		Longitude:	
Acct. #: 2009 T03 N 302DC6C A3GXR500		CERCLIS #:	
Program: Superfund		Operable Unit:	
Site ID: A3GX		Date Approved:	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		E-mail: towle.michael@epa.gov	
Title: Draft Sampling and Analysis Plan		E-mail: Joshua.cope@ttemi.com	
EPA Project Leader: Michael Towle		E-mail: Jordan.vaughn@ttemi.com	
Request Preparer: JOSHUA COPE			
Site Leader: Jordan Vaughn			
Contractor: Tetra Tech EM Inc			
EPA CO/PO: Lomie Murray/Karen Wodarczyk			
#Samples 13	Matrix: water-non potable	Parameter: TCL VOC low water	Method: SOM01.2
#Samples 11	Matrix: water-non potable	Parameter: TCL SVOC low water	Method: SOM01.2
#Samples 1	Matrix: water-non potable	Parameter: TCL Pesticides, PCBs water	Method: SOM01.2
#Samples 13	Matrix: soil	Parameter: TCL VOC low soil	Method: SOM01.2
#Samples 26	Matrix: soil	Parameter: TCL SVOC low soil	Method: SOM01.2
#Samples 13	Matrix: soil	Parameter: TCL Pesticides and PCBs soil	Method: ILM05.4 ICPAES & Hg
#Samples 1	Matrix: water-non potable	Parameter: TAL Metals & Hg water	Method: ILM05.4 ICPAES & Hg
#Samples 13	Matrix: soil	Parameter: TAL Metals & Hg soil	
Ship Date From: 11/18/2008		Ship Date To: 11/21/2008	
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Org. Validation Level M2	
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21 days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify)		Inorg. Validation Level IM2	
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached DLs Needed.			





**USEPA Contract Laboratory Program**  
**Organic Traffic Report & Chain of Custody Record**

Case No: 38062  
 DAS No: **R**

Region: 3	Date Shipped: 11/19/2008	Chain of Custody Record	
Project Code: CT4413	Carrier Name: FedEx	Relinquished By	Sampler Signature
Account Code: PANOR0306633	Attribill: 857499682600	(Date / Time)	Received By
CERCLIS ID: PANOR0306633	Shipped to: A4 Scientific		(Date / Time)
Spill ID: AGX	1544 Sawdust Road		
Site Name/State: Tank Car p 111908 SB VOC/PA	Suite 505		
Project Leader: Jordan Vaughn	The Woodlands TX 77380		
Action: Removal Action	(281) 292-5277		
Sampling Co: Tetra Tech			

ORGANIC SAMPLE NO.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURBAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE NO.	QC Type
C05W3	Soil (<12") Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1265 (Not preserved), TCOA1266 (Not preserved), TCOA1267 (Not preserved) (3)	TCCA-SB-01-0405	S: 11/19/2008 9:14		--
C05W5	Soil (<12") Jordan Vaughn	L/G	SOM01.2 (14)	TCOA1272 (Not preserved), TCOA1273 (Not preserved), TCOA1274 (Not preserved) (3)	TCCA-SB-03-0304	S: 11/19/2008 10:48		--
C05W6	Soil (<12") Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1275 (Not preserved), TCOA1276 (Not preserved), TCOA1277 (Not preserved), TCOA1278 (Not preserved), TCOA1279 (Not preserved), TCOA1280 (Not preserved), TCOA1281 (Not preserved), TCOA1282 (Not preserved), TCOA1283 (Not preserved) (9)	TCCA-SB-04-0607	S: 11/19/2008 11:18	MS/MSD	
C05W7	Soil (<12") Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1284 (Not preserved), TCOA1285 (Not preserved), TCOA1286 (Not preserved) (3)	TCCA-SB-04-1415	S: 11/19/2008 11:27		--
C05W8	Soil (<12") .Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1287 (Not preserved), TCOA1288 (Not preserved), TCOA1289 (Not preserved) (3)	TCCA-SB-05-0203	S: 11/19/2008 13:49		--
C05W9	Soil (<12") Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1290 (Not preserved), TCOA1291 (Not preserved), TCOA1292 (Not preserved) (3)	TCCA-SB-05-0304	S: 11/19/2008 13:54		Duplicate of TCCA-SB-05-0203

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SOM01.2 = SOM01.2 SOIL_VOA	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Used? _____

TR Number: **3-023200937-111908-0001**



**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38062  
DAS No: R

Region: 3	Date Shipped: 11/19/2008	<b>Chain of Custody Record</b> <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Sampler Signature</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)	1					2					3					4				
Relinquished By	(Date / Time)		Sampler Signature	Received By	(Date / Time)																						
1																											
2																											
3																											
4																											
Project Code: CT4416	Carrier Name: FedEx																										
Account Code: PAN0000306553	Airbill: 857499682600																										
CERCLIS ID: AGX	Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277																										
Spill ID: AGX																											
Site Name/State: Tank Car Corp 111908 SB VOC/PA																											
Project Leader: Jordan Vaughn																											
Action: Removal Action																											
Sampling Co: Tetra Tech																											

ORGANIC SAMPLE No.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Boilies	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C05X0	Soil (<12")/ Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1293 (Not preserved), TCOA1294 (Not preserved), TCOA1295 (Not preserved)	TCOA-SB-06-0506	S: 11/19/2008 14:42		--
C05X1	Soil (<12")/ Jordan Vaughn	L/G	SOM01.2 (14)	TCOA1296 (Not preserved), TCOA1297 (Not preserved), TCOA1298 (Not preserved)	TCOA-SB-07-0506	S: 11/19/2008 15:10		--
C05X2	Soil (<12")/ Jordan Vaughn	H/G	SOM01.2 (14)	TCOA1299 (Not preserved), TCOA1300 (Not preserved), TCOA1301 (Not preserved)	TCOA-SB-02-0304	S: 11/19/2008 9:57		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SOM01.2 = SOM01.2 SOIL_VOA	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-023200937-111908-0001



**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38062  
DAS No:

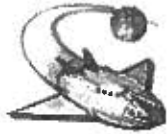
**R**

Region: 3	Date Shipped: 11/20/2008	<b>Chain of Custody Record</b>		Sampler Signature:
Project Code: CT4416	Carrier Name: FedEx	Relinquished By	(Date / Time)	Received By
Account Code: PAN000306553	Airbill: 860435691265			(Date / Time)
CERCLIS ID: AGX	Shipped to: A4 Scientific	1		
Spill ID: AGX	1544 Sawdust Road	2		
Site Name/State: Tank Car Corp 111908 SB VOICPA	Suite 505	3		
Project Leader: Jordan Vaughn	The Woodlands TX 77380	4		
Action: Removal Action	(281) 292-5277			
Sampling Co: Tetra Tech				

ORGANIC SAMPLE No.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C05X5	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SV/AR/PEST (14)	TCCA1325, TCCA1326 (Not preserved), TCCA1327 (Not preserved), TCCA1328 (Not preserved) (4)	TCCA-SB-08-0304	S: 11/20/2008 8:55		--
C05X6	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SV/AR/PEST (14)	TCCA1329, TCCA1330 (Not preserved), TCCA1331 (Not preserved), TCCA1332 (Not preserved) (4)	TCCA-SB-09-0304	S: 11/20/2008 9:19		--
C05X7	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SV/AR/PEST (14)	TCCA1333, TCCA1334 (Not preserved), TCCA1335 (Not preserved), TCCA1336 (Not preserved) (4)	TCCA-SB-10-0506	S: 11/20/2008 10:00		--
C05X8	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SV/AR/PEST (14)	TCCA1337, TCCA1338 (Not preserved), TCCA1339 (Not preserved), TCCA1340 (Not preserved) (4)	TCCA-SB-11-0304	S: 11/20/2008 10:11		--
C05X9	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SV/AR/PEST (14)	TCCA1341, TCCA1342 (Not preserved), TCCA1343 (Not preserved), TCCA1344 (Not preserved) (4)	TCCA-SB-12-0607	S: 11/20/2008 11:08		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SOM01.2 = SOM01.2 SOIL VO, R/PEST = CLP TCL Semivolatiles and Pesticides/	Conc: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-023200937-112008-0001



Dwayne Hall/ESC/R3/USEPA/US  
02/03/2006 02:25 PM

To Khin-Cho Thaug/ESC/R3/USEPA/US, Michael Towle/R3/USEPA/US, Lorrie Murray/R3/USEPA/US, Karen Wodarczyk/R3/USEPA/US  
cc John Kwedar/ESC/R3/USEPA/US@EPA, Dan Slizys/ESC/R3/USEPA/US@EPA, Victor Yastrop/ESC/R3/USEPA/US@EPA, Judy  
bcc

Subject Requesting duplicate sample pair information and regional traffic reports for case number 38062, Tank Car Corporation

**Disclaimer:** Information contain below does not constitute technical direction. The Sampling/Field contractor shall contact their applicable EPA Contracting Officer Representative (COR) for technical direction

Case: 38062  
Lab: A4 Scientific  
SDG: C05W3

Site: Tank Car Corporation of America  
EPA Project Leader: Michael Towle  
Site Leader: Jordan Vaughn

**Issue 1:**

The corresponding Regional chain of custody document (TR number: 3-023200937-111908-0002) has not been received for this case. Please fax (number included below) or email a copy of this document.

**Issue 2:**

Duplicate sample pair information was not specified on any of the chain of custody documents. Please e-mail a response that specifies duplicate sample pair information if applicable for this case. No memo to file required. Thank you.

\*\*\*\*\*  
Dwayne Hall  
ESAT Region 3 R.S.C.C. Auditor/PM2.5 Field Auditor  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone: 410-305-2602  
Field Cell Phone: 202-256-5518  
Fax: 410-305-3095  
\*\*\*\*\*

## Appendix D

### Laboratory Case Narrative

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

EPA SAMPLE #	LAB SAMPLE #	DATE/TIME RECEIVED	AIRBILL NO.	ANALYSIS	Total # of Containers Received	MATRIX	REMARKS
C05W3	0009750-01	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05W5	0009750-02	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05W6	0009750-03	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	10	SOIL	MS/MSD (ARO & PEST ONLY)
C05W7	0009750-04	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05W8	0009750-05	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05W9	0009750-06	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05X0	0009750-07	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05X1	0009750-08	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05X2	0009750-09	11/20/08 10:00	857499682600	ARO, PEST, SV, VOA	4	SOIL	
C05X5	0009760-01	11/21/08 10:16	860435691265	ARO, PEST, SV, VOA	4	SOIL	
C05X6	0009760-02	11/21/08 10:16	860435691265	ARO, PEST, SV, VOA	4	SOIL	
C05X7	0009760-03	11/21/08 10:16	860435691265	ARO, PEST, SV, VOA	4	SOIL	
C05X8	0009760-04	11/21/08 10:16	860435691265	ARO, PEST, SV, VOA	4	SOIL	
C05X9	0009760-05	11/21/08 10:16	860435691265	ARO, PEST, SV, VOA	4	SOIL	

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)
11/20/2008	1	5
11/21/2008	1	5

No other discrepancies or issues were noted during sample receipt and login.

### VOLATILES LOW/MEDIUM

Samples were analyzed using instrument C-5973 and F-5973.

Instrument C-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

Instrument F-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

Upon receipt of the soil encore samples, encores were transferred to closed loop vials and were frozen as per the SOW specifications.

Soil Samples C05W3, C05W9, C05X0 and C05X2 had high concentration of target compound and/or TIC's. Sample was analyzed at low level and medium level and further dilutions were analyzed as needed.

Manual integrations were performed for the following samples for the compounds listed against them.

VSTD0102D- Chloroethane, Bromoform  
VSTD0052D-Bromomethane, Tetrachloroethene, 1,2-Dibromoethane  
VSTD0052G-Bromomethane  
VSTD20037-Chloroethane  
VSTD05038-Trochlorofluoromethane, 1,1,2-Trichloro-1,2,2-Trifluoro

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

### SEMI-VOLATILES

#### 1) Extractions

Soil samples were extracted by sonication method. GPC cleanup was performed on soil samples and the associated Blank. No problems were encountered during the extraction.

Samples C05W3, C05W6, C05W9, C05X2 were extracted for medium level analysis.

#### 2) Analysis

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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MS/MSD was not required for SVOA.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C05X8	20
C05X6	10
C05X0	25
C05W6	10
C05X2	20
C05W3	50
C05W8	25

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	Sample ID
Phenol-d5	C05w3, C05w3DL, C05w5, C05w6, C05w6DL, C05w7, C05w8, C05w8DL, C05w9, C05x0, C05x0DL, C05x1, C05x2, C05x2DL, C05x5, C05x6, C05x6DL, C05x7, C05x8, C05x8DL, C05x9, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0208A, SSTD0208B, SSTD0208C, SSTD0208D, SSTD0208E, SSTD0208F, SSTD0208G, SSTD0208J, SSTD0208K, SBLK9V, SBLK9W, SBLK9X
Benzo (b) fluoranthene	C05w3, C05w3DL, C05w5, C05w6, C05w6DL, C05w8, C05w8DL, C05w9, C05x0, C05x0DL, C05x1, C05x2, C05x2DL, C05x6, C05x7, C05x8, C05x8DL,
Benzo (k) fluoranthene	C05w3, C05w3DL, C05w6, C05w6DL, C05w8, C05w8DL, C05w9, C05x0, C05x0DL, C05x1, C05x2, C05x2DL, C05x6, C05x7, C05x8, C05x8DL, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0208B, SSTD0208C, SSTD0208D, SSTD0208J, SSTD0208K
Indeno (1, 2, 3-cd) pyrene	C05w3, C05w3DL, C05w6, C05w6DL, C05w8, C05w8DL, C05w9, C05x0, C05x0DL, C05x2DL, C05x6, C05x8, C05x8DL, SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0208A, SSTD0208B, SSTD0208C, SSTD0208D, SSTD0208E, SSTD0208F, SSTD0208G, SSTD0208J, SSTD0208K
2, 4-Dinitrophenol	SSTD0207B, SSTD0107B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0208A, SSTD0208B, SSTD0208C, SSTD0208D, SSTD0208E, SSTD0208F, SSTD0208G, SSTD0208J, SSTD0208K
Benzo (a) anthracene	C05w7,
Chrysene	C05w7,
Anthracene	C05x8,

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

**PESTICIDES**

**1) Extractions**

Soil samples were extracted by sonication method followed by GPC and Florisil cleanup. No problems were encountered during extraction.

Sulfur cleanup was performed on water/soil samples and the associated Blank.

**2) Analysis**

Samples were analyzed using instrument C-6890.



A4 SCIENTIFIC, INC.  
1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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Instrument C-6890 consisted of a dual inlet, dual ECD Agilent 6890 GC/ECD instrument with the following two columns manufactured by Restek. A 1µL injection was used on each column.

- Column 1= RTX-PEST: Cat # 11140, 30m long, 0.53mm ID, 0.5µm film thickness (Instrument ID: C-6890A).
- Column 2= RTX-PEST2: Cat # 111340, 30m long, 0.53mm ID, 0.42µm film thickness (Instrument ID: C-6890B).

Due to the oily nature of the Samples C05W3, C05W6, C05W8, C05W9, C05X0, C05X2 were ran at 10x instead of 1x. Lab submitted waiver request.

Sample "C05W6" which was designated for MS/MSD was analyzed at 10X dilution. MS/MSD was also analyzed a 10X dilution.

The following samples were run a dilution, listed against them to get all the compounds within the range.

EPA SAMPLE ID	DILUTION
C05W3	20

Manual integrations were performed for the following samples for the compounds listed against them.

COMPOUND	EPA SAMPLE ID (Inst=C-6890A/F-6890A/G6890A)	EPA SAMPLE ID (Inst=C-6890A/F-6890A/G6890A)
4, 4'-DDD	INDA3EU, INDA3EX	
4, 4'-DDT	C05X0,	
4, 4'-DDE	INDB3EU	
Aldrin	C05W6MSD	C05w6, C05W6MS, C05W6MSD
Alpha-BHC		C05X0,
Alpha-Chlordane	C05w3, C05X2,	
Beta-BHC	C05w3, C05w3DL, C05w6, C05X0,	
Decachlorobiphenyl	C05w3DL, C05w6, C05X0, C05X2, C05X8, INDB3EU, PIBLKEU, C05W6MS, C05W6MSD	C05w6, C05w9, C05X0, C05X2, C05X5, C05X6, C05X7, C05X8, C05X9, PEMFT, INDA3FU, INDB3FU, PEMFV PEMFW, INDB3FX, INDA3FX, PIBLKFU, PIBLKFW, PIBLKFX, C05W6MS, C05W6MSD
Delta-BHC		C05X0,
Dieldrin	C05W6MSD	C05w8, C05w9,
Endosulfan I		
Endosulfan II	C05w3, C05w3DL, C05X2, C05X8,	C05X0,
Endosulfan Sulfate	C05w3, C05w3DL, C05X0, C05X8,	
Endrin	C05w3, C05w3DL, C05w6, C05X0, C05X2, C05W6MS, C05W6MSD	C05w9,
Endrin Aldelyde		PEMFS, PEMFT, PEMEW
Endrin ketone		PEMFS, PEMFT, PEMFV
Gamma-BHC		C05w3, C05w3DL, C05W6MS, C05W6MSD
Gamma-Chlordane	C05w3, C05w3DL, C05w6, C05X0, C05X2, C05X8, C05W6MS, C05W6MSD	
Heptachlor Epoxi	C05w6, C05X2, C05X8, C05W6MS	
Methoxychlor	C05w6, C05X0, C05X2, C05W6MS, C05W6MSD	C05w6,

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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Tetrachloro-m-xylene	C05w3DL, C05w6, C05w8, C05w9, C05W6MS, C05X0, C05X2, C05X8, C05W6MSD	
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These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

**AROCLORS**

**1) Extractions**

Soil samples were extracted by sonication method followed by GPC and sulfuric acid cleanup. No problems were encountered during extraction.

**2) Analysis**

Samples were analyzed using instrument F-6890.

Instrument F-6890 consisted of a dual inlet, dual ECD Agilent 6890 GC/ECD instrument with the following two columns manufactured by Agilent. A 1µL injection was used on each column.

- Column 1= DB-XLB: Cat # 1281222, 25m long, 0.2mm ID, 0.33µm film thickness (Instrument ID: F-6890A).
- Column 2= DB-35MS: Cat # 1283822, 25m long, 0.2mm ID, 0.33µm film thickness (Instrument ID: F-6890B).

The following samples were run a dilution, listed against them to get all the compounds within the range.

EPA SAMPLE ID	DILUTION
C05W8REDL	10
C05W9REDL	10
C05X0REDL	2

Manual integrations were performed for the following compounds for the samples listed against them.

COMPOUND	EPA SAMPLE ID (Inst= F-6890A)	EPA SAMPLE ID (Inst=F-6890A)
Decachlorobiphenyl		C05W6, C05W8

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

**VOLATILES**

**Low Level Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(W_s)(D)}$$

A<sub>x</sub> = Area of the characteristic ion (EICP) for the compound to be measured.

A<sub>is</sub> = Area of the characteristic ion (EICP) for the specific internal standard.

I<sub>s</sub> = Amount of internal standard added in nanograms (ng).

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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RRF = Mean relative response factor from the heated purge of the initial calibration.

$W_s$  = Weight of sample added to the purge tube, in grams (g).

$$D = \frac{100 - \%moisture}{100}$$

DF = Dilution Factor

**Medium Level Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) = \frac{(A_x)(I_s)(AVt)1000(DF)}{(A_{is})(RRF)(V_a)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured.

$A_{is}$  = Area of the characteristic ion (EICP) for the specific internal standard.

$I_s$  = Amount of internal standard added in nanograms (ng).

RRF = Mean relative response factor from the heated purge of the initial calibration.

$W_s$  = Weight of sample added to the purge tube, in grams (g).

$$D = \frac{100 - \%moisture}{100}$$

DF = Dilution Factor

AVt = Adjusted Total Volume of the Methanol Extract in milliliters (mL)

$$AVt = Vt + \{W_s - [W_s(D)]\}$$

Where Vt is the total volume of methanol extract in mL.

The Quantity derived from  $\{W_s - [W_s(D)]\}$  is the soil water volume expressed in mL.

**Semivolatiles:**

**Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) \text{ (Dry weight Basis)} = \frac{(A_x)(I_s)(Vt)(Df)(GPC)}{(A_{is})(RRF)(V_i)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in nanograms (ng).

$V_t$  = Volume of concentrated extract in microliters (μL).

$V_i$  = Volume of extracted infected in microliters (μL).

$$D = \frac{100 - \%moisture}{100}$$

$W_s$  = Weight of sample extracted in grams (g).

Df = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. ( If, no GPC is performed, GPC=1).}$$

$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

RRF = Mean relative response factor determined from the initial calibration.

Contract #: EPW05036	Case #: 38062	SDG #: C05W3
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**Pesticides:**

Soil/Sediment:

$$\text{Concentration } \mu\text{g/Kg (Dry weight basis)} = \frac{(A_x)(V_t)(D_f)(G_P C)}{(C_F)(V_i)(W_s)(D)}$$

$A_x$  = Area of the peak for the compound to be measured.

$\overline{C_F}$  = Mean Calibration factor from the initial calibration standard (area/ng).

$V_1$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ).

$V_i$  = Volume of extract injected in microliters ( $\mu\text{L}$ ). (If a single injection is made onto two columns, use  $\frac{1}{2}$  the volume in the syringe as the volume injected onto each column).

$W_s$  = Weight of sample extracted (g).

$D_f$  = Dilution Factor.

$$D = \% \text{ dry weight or } \frac{100 - \% \text{ moisture}}{100}$$

$$G_P C = \frac{V_{in}}{V_{out}} = \text{GPC Factor. (If no GPC is performed, GPC=1).}$$

$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

**Aroclors**

Soil/Sediment:

$$\text{Concentration } \mu\text{g/Kg (Dry weight basis)} = \frac{(A_x)(V_t)(D_f)(G_P C)}{(C_F)(V_i)(W_s)(D)}$$

$A_x$  = Area of the peak for the compound to be measured.

$\overline{C_F}$  = Mean Calibration factor from the initial calibration standard (area/ng).

$V_1$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ).

$V_i$  = Volume of extract injected in microliters ( $\mu\text{L}$ ). (If a single injection is made onto two columns, use  $\frac{1}{2}$  the volume in the syringe as the volume injected onto each column).

$W_s$  = Weight of sample extracted (g).

$D_f$  = Dilution Factor.

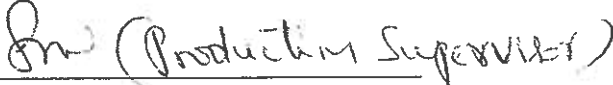
$$D = \% \text{ dry weight or } \frac{100 - \% \text{ moisture}}{100}$$

$$G_P C = \frac{V_{in}}{V_{out}} = \text{GPC Factor. (If no GPC is performed, GPC=1).}$$

$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy Sample Data Package and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

  
Signature and Title

12/04/08  
Date of Signature

Page 6A  
OS  
12/1/08

## Appendix E

### Tentatively Identified Compounds (TICs)

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-01  
 Sample wt/vol: 3.30 (g/mL) g Lab File ID: C6091.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 18.5 Date Analyzed: 11/25/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.39	720	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl</del> <i>unknown</i>	13.50	640	JN
03	000098-83-9	.alpha.-Methylstyrene	13.77	370	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.95	1600	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.03	1000	JN
06	000611-15-4	Benzene, 1-ethenyl-2-methyl-	14.09	340	JN
07	000271-89-6	Benzofuran	14.24	1600	JN
08	000526-73-8	<del>Benzene, 1,2,3-trimethyl</del> <i>unknown</i>	14.42	550	JN
09		UNKNOWN	14.48	210	J
10	000496-11-7	Indane	14.63	1600	JN
11	000095-13-6	Indene	14.90	5500	JN
12	000535-77-3	Benzene, 1-methyl-3-(1-meth.	15.04	120	JN
13	000934-80-5	Benzene, 4-ethyl-1,2-dimethy	15.11	180	JN
14	001005-64-7	Benzene, 1-butenyl-, (E)-	15.16	87	JN
15	003290-53-7	<del>Benzene, (2-methyl-2-propyl)</del> <i>unknown</i>	15.23	200	JN
16	003290-53-7	<del>Benzene, (2-methyl-2-propyl)</del> <i>unknown</i>	15.27	100	JN
17	017059-52-8	<del>Benzofuran, 7-methyl</del> <i>unknown</i>	15.46	340	JN
18	017059-52-8	<del>Benzofuran, 7-methyl</del> <i>unknown</i>	15.55	810	JN
19	000934-10-1	3-Phenylbut-1-ene	15.65	130	JN
20	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.81	180	JN
21	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.95	260	JN
22	002177-47-1	<del>2-Methylindene (01)</del> <i>unknown</i>	16.00	500	JN
23	002177-47-1	<del>2-Methylindene (02)</del> <i>unknown</i>	16.10	450	JN
24	000612-17-9	1,4-Dihydronaphthalene	16.20	72	JN
25	000275-51-4	Azulene	16.53	4500	JN
26	000270-82-6	2-Benzothiophene #	16.63	73	JN
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W3ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-01  
 Sample wt/vol: 3.30 (g/mL) g Lab File ID: C6210.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 18.5 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	13.29	3300	J
02	000620-14-4	Benzene, 1-ethyl-3-methyl-	13.40	40000	JN
03	000526-73-8	Benzene, 1,2,3-trimethyl- (0	13.52	41000	JN
04	000098-83-9	.alpha.-Methylstyrene	13.78	20000	JN
05	000108-67-8	Benzene, 1,3,5-trimethyl-	13.96	93000	JN
06	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	52000	JN
07	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.10	18000	JN
08	000271-89-6	Benzofuran	14.26	30000	JN
09	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.44	31000	JN
10	000637-50-3	Benzene, 1-propenyl-	14.49	11000	JN
11	000496-11-7	Indane	14.66	79000	JN
12	000095-13-6	Indene	14.88	200000	JBN
13	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	15.05	15000	JN
14	001758-88-9	Benzene, 2-ethyl-1,4-dimethy	15.12	19000	JN
15	000768-49-0	Benzene, (2-methyl-1-propen.	15.18	8100	JN
16	000767-58-8	Indan, 1-methyl- (01)	15.25	18000	JN
17	002039-90-9	Benzene, 2-ethenyl-1,3-dime.	15.29	12000	JN
18	000768-49-0	Benzene, (2-methyl-1-propen.	15.36	3400	JN
19	004265-25-2	Benzofuran, 2-methyl-	15.47	14000	JN
20	001758-88-9	Benzene, 2-ethyl-1,4-dimethy	15.51	10000	JN
21		UNKNOWN	15.68	15000	J
22	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.82	20000	JN
23	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.96	26000	JN
24	000622-76-4	Benzene, 1-butyryl-	16.03	41000	JN
25	065051-83-4	Benzene, (1-methyl-2-cyclop.	16.13	32000	JN
26	000270-82-6	2-Benzothiophene #	16.64	5000	JBN
27	000090-12-0	Naphthalene, 1-methyl-	17.55	3000	JN
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W3MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-01RE1  
 Sample wt/vol: 3.30 (g/mL) g Lab File ID: C6214.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 18.5 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.40	59000	JDN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.52	66000	JDN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.96	160000	JDN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.03	86000	JDN
05	000271-89-6	Benzofuran	14.26	49000	JDN
06	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.44	53000	JDN
07	000496-11-7	Indane	14.65	140000	JDN
08	000095-13-6	Indene	14.87	920000	JDN
09	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	15.12	43000	JDN
10	000767-58-8	Indan, 1-methyl-	15.23	35000	JDN
11	000768-49-0	Benzene, (2-methyl-1-propen.	15.29	42000	JDN
12	017059-52-8	Benzofuran, 7-methyl-	15.57	130000	JDN
13	001560-06-1	Benzene, 2-butenyl-	15.67	58000	JDN
14	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.82	63000	JDN
15	002039-89-6	Benzene, 2'-ethenyl-1,4-dime.	15.96	100000	JDN
16	002177-47-1	2-Methylindene	16.02	190000	JDN
17	000767-59-9	1H-Indene, 1-methyl-	16.11	200000	JDN
18		UNKNOWN	16.39	34000	JD
19	000095-15-8	Benzo[b]thiophene	16.64	190000	JDN
20	004489-84-3	Benzene, (3-methyl-2-butenyl	16.85	37000	JDN
21		UNKNOWN	17.02	69000	JD
22					
23					
24					
25					
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27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.



1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-02  
 Sample wt/vol: 4.22 (g/mL) g Lab File ID: F0598.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 18.3 Date Analyzed: 11/22/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000090-12-0	Naphthalene, 1-methyl-	16.96	39	JN
02	000092-52-4	Biphenyl	17.73	10	JN
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

*Handwritten signature/initials*

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-03  
 Sample wt/vol: 5.69 (g/mL) g Lab File ID: F0601.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 20.3 Date Analyzed: 11/22/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000110-01-0	Thiophene, tetrahydro-	9.80	220	JN
02	000110-56-5	Butane, 1,4-dichloro-	12.18	760	JN
03	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.60	130	JN
04	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	12.69	100	JN
05	000622-96-8	Benzene, 1-ethyl-4-methyl-	12.91	47	JN
06	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.08	240	JN
07	000271-89-6	Benzofuran	13.35	82	JN
08	000496-11-7	Indane	13.67	500	JN
09	000095-13-6	Indene	13.87	770	JN
10		UNKNOWN	14.17	63	J
11	017059-52-8	<del>Benzofuran, 7-methyl-</del> (01) <i>unknown</i>	14.38	47	JN
12	017059-52-8	<del>Benzofuran, 7-methyl-</del> (02) <i>unknown</i>	14.47	120	JN
13	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.83	98	JN
14	002177-47-1	2-Methylindene	14.90	130	JN
15	065051-83-4	Benzene, (1-methyl-2-cyclop.	15.00	160	JN
16	1000222-12-0	4-Phenylbut-3-ene-1-yne	15.46	4800	JN
17	000270-82-6	2-Benzothiophene #	15.58	180	JN
18	000090-12-0	<del>Naphthalene, 1-methyl-</del> (01) <i>unknown</i>	16.71	1000	JN
19	000090-12-0	<del>Naphthalene, 1-methyl-</del> (02) <i>unknown</i>	16.97	580	JN
20	000092-52-4	Biphenyl	17.73	82	JN
21	000581-42-0	Naphthalene, 2,6-dimethyl-	18.26	110	JN
22	000581-40-8	Naphthalene, 2,3-dimethyl-	18.53	70	JN
23					
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30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

*12/2/08*  
*ds 12/2/08*  
*2/6 12/2/08*  
*2/6 12/2/08*

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-04  
 Sample wt/vol: 4.64 (g/mL) g Lab File ID: C6084.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 19.9 Date Analyzed: 11/25/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000496-11-7	Indane	14.63	7.6	JN
02		UNKNOWN	14.86	11	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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23					
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25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	11	

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-05  
 Sample wt/vol: 5.83 (g/mL) g Lab File ID: C6085.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 13.0 Date Analyzed: 11/25/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.39	100	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.50	90	JN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.95	190	JN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.02	43	JN
05	000271-89-6	Benzofuran	14.24	50	JN
06	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.42	66	JN
07	000496-11-7	Indane	14.63	630	JN
08	000095-13-6	Indene	14.86	870	JN
09	000099-87-6	Benzene, 1-methyl-4-(1-meth.	15.04	35	JN
10	000527-84-4	Benzene, 1-methyl-2-(1-meth.	15.11	42	JN
11	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	15.22	64	JN
12	017059-52-8	Benzofuran, 7-methyl-	15.46	61	JN
13	004265-25-2	Benzofuran, 2-methyl-	15.55	180	JN
14		UNKNOWN	15.64	34	J
15	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.79	100	JN
16	000767-58-8	Indan, 1-methyl-	15.95	160	JN
17	000767-59-9	1H-Indene, 1-methyl-	16.00	140	JN
18	002177-47-1	2-Methylindene	16.10	150	JN
19	000275-51-4	Azulene	16.53	4900	JN
20	000270-82-6	2-Benzothiophene #	16.63	260	JN
21	056147-63-8	2-Ethyl-2,3-dihydro-1H-inden	16.71	36	JN
22	000769-57-3	.alpha.,.beta.,.beta.-Trime.	16.84	36	JN
23	006682-71-9	1H-Indene, 2,3-dihydro-4,7-	17.01	53	JN
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-06  
 Sample wt/vol: 5.92 (g/mL) g Lab File ID: F0623.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 15.0 Date Analyzed: 11/25/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	<del>Benzene, 1-ethyl-2-methyl</del> <i>ditoluene</i>	12.60	160	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl</del> <i>ditoluene</i>	12.69	130	JN
03	000611-14-3	<del>Benzene, 1-ethyl-2-methyl</del> <i>ditoluene</i>	12.90	51	JN
04	000526-73-8	<del>Benzene, 1,2,3-trimethyl</del> <i>ditoluene</i>	13.08	220	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	13.15	48	JN
06	000271-89-6	Benzofuran	13.34	71	JN
07	000526-73-8	Benzene, 1,2,3-trimethyl- (0	13.48	59	JN
08	000496-11-7	Indane	13.67	600	JN
09	000095-13-6	Indene	13.87	910	JN
10	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	14.17	47	JN
11	017059-52-8	<del>Benzofuran, 7-methyl (01)</del> <i>ditoluene</i>	14.38	52	JN
12	017059-52-8	<del>Benzofuran, 7-methyl (02)</del> <i>ditoluene</i>	14.47	150	JN
13	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.69	56	JN
14	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.83	120	JN
15	002177-47-1	2-Methylindene	14.90	97	JN
16	000767-59-9	1H-Indene, 1-methyl-	15.00	110	JN
17	1000222-12-0	4-Phenylbut-3-ene-1-yne	15.47	4600	JN
18	000270-82-6	2-Benzothiophene #	15.59	250	JN
19	000090-12-0	Naphthalene, 1-methyl-	16.97	490	JN
20	000092-52-4	Biphenyl	17.73	80	JN
21	000575-37-1	Naphthalene, 1,7-dimethyl-	18.26	61	JN
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W9ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-06  
 Sample wt/vol: 5.84 (g/mL) g Lab File ID: C6215.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 15.0 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	13.40	1600	JN
02	000108-67-8	Benzene, 1,3,5-trimethyl-	13.52	1700	JN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.96	2700	JN
04	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	14.44	810	JN
05	000496-11-7	Indane	14.65	7100	JN
06	000095-13-6	Indene	14.87	8100	JN
07	000527-84-4	Benzene, 1-methyl-2-(1-meth.	15.05	950	JN
08	000767-58-8	Indan, 1-methyl-	15.25	1000	JN
09	017059-52-8	Benzofuran, 7-methyl-	15.57	2100	JN
10	000824-22-6	<del>1H-Indene, 2,3-dihydro-</del> <i>unknown</i>	15.82	2200	JN
11	000824-22-6	<del>1H-Indene, 2,3-dihydro-</del> <i>unknown</i>	15.96	3400	JN
12	065051-83-4	Benzene, (1-methyl-2-cyclop.	16.02	2300	JN
13	000767-59-9	1H-Indene, 1-methyl-	16.11	2600	JN
14		UNKNOWN	16.39	1400	J
15	1000222-12-0	4-Phenylbut-3-ene-1-yne	16.53	180000	JN
16	000270-82-6	2-Benzothiophene #	16.64	5100	JN
17	017057-82-8	1H-Indene, 2,3-dihydro-1,2-	16.85	1200	JN
18	000769-25-5	Benzene, 2-ethenyl-1,3,5-tr.	17.02	1700	JN
19		UNKNOWN	17.20	900	J
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-07  
 Sample wt/vol: 4.94 (g/mL) g Lab File ID: C6086.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 15.6 Date Analyzed: 11/25/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.39	340	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.50	290	JN <i>H 11/23/08</i>
03	000098-83-9	.alpha.-Methylstyrene	13.77	160	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.95	700	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.02	460	JN
06	000873-49-4	Benzene, cyclopropyl-	14.07	150	JN
07	000271-89-6	Benzofuran	14.24	440	JN
08	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0)	14.42	240	JN <i>H 11/23/08</i>
09		UNKNOWN	14.48	91	J
10	000496-11-7	Indane	14.63	820	JN
11	000095-13-6	Indene	14.88	2200	JN
12	000535-77-3	Benzene, 1-methyl-3-(1-meth.	15.04	68	JN
13	000934-80-5	Benzene, 4-ethyl-1,2-dimethy	15.11	95	JN
14	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	15.16	43	JN
15	000767-58-8	Indan, 1-methyl-	15.22	81	JN
16	001560-06-1	Benzene, 2-butenyl-	15.27	68	JN
17	017059-52-8	<del>Benzofuran, 7-methyl-</del> (01) <i>unknown</i>	15.46	130	JN <i>H 11/23/08</i>
18		UNKNOWN	15.50	42	J
19	017059-52-8	<del>Benzofuran, 7-methyl-</del> (02) <i>unknown</i>	15.55	400	JN <i>H 11/23/08</i>
20	000768-49-0	Benzene, (2-methyl-1-propen.	15.65	82	JN
21	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.81	110	JN
22	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.95	190	JN
23	065051-83-4	<del>Benzene, (1-methyl-2-cyclo</del> <i>unknown</i>	16.00	430	JN
24	065051-83-4	<del>Benzene, (1-methyl-2-cyclo</del> <i>unknown</i>	16.10	420	JN <i>H 11/23/08</i>
25	000612-17-9	1,4-Dihydronaphthalene	16.20	63	JN
26	000275-51-4	Azulene	16.53	3000	JN
27	000270-82-6	2-Benzothiophene #	16.63	100	JN
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	59	

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X0ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-07  
 Sample wt/vol: 5.07 (g/mL) g Lab File ID: C6216.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 15.6 Date Analyzed: 12/01/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	13.29	2000	J
02	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.40	20000	JN
03	000526-73-8	Benzene, 1,2,3-trimethyl- (0	13.52	18000	JN
04	000098-83-9	.alpha.-Methylstyrene	13.78	9000	JN
05	000526-73-8	Benzene, 1,2,3-trimethyl- (0	13.96	42000	JN
06	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	26000	JN
07	000622-97-9	Benzene, 1-ethenyl-4-methyl-	14.10	8800	JN
08	000271-89-6	Benzofuran	14.26	11000	JN
09	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.44	13000	JN
10	000873-49-4	Benzene, cyclopropyl-	14.49	5100	JN
11	000496-11-7	Indane	14.65	41000	JN
12	000095-13-6	Indene	14.88	90000	JN
13	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	15.05	6900	JN
14	000934-80-5	Benzene, 4-ethyl-1,2-dimethy	15.12	7200	JN
15	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	15.18	3200	JN
16	000824-90-8	1-Phenyl-1-butene	15.25	6400	JN
17	001195-32-0	Benzene, 1-methyl-4-(1-meth.	15.29	6600	JN
18	000768-49-0	Benzene, (2-methyl-1-propen.	15.34	1700	JN
19	017059-52-8	Benzofuran, 7-methyl- (01)	15.47	3900	JN
20	000527-53-7	Benzene, 1,2,3,5-tetramethyl	15.51	4000	JN
21	017059-52-8	Benzofuran, 7-methyl- (02)	15.57	20000	JN
22	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	15.67	5800	JN
23	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.82	9700	JN
24	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.96	14900	JN
25	002177-47-1	2-Methylindene (01)	16.03	2000	JN
26	002177-47-1	2-Methylindene (02)	16.13	3000	JN
27	000612-17-9	1,4-Dihydronaphthalene	16.21	2500	JN
28	000270-82-6	2-Benzothiophene #	16.64	3200	JN
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.



1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X0MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-07RE1  
 Sample wt/vol: 5.07 (g/mL) g Lab File ID: C6204.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 15.6 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.42	38000	JDN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.52	40000	JDN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.96	83000	JDN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	48000	JDN
05	000873-49-4	Benzene, cyclopropyl-	14.10	17000	JDN
06	000271-89-6	Benzofuran	14.26	23000	JDN
07	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.44	25000	JDN
08	000496-11-7	Indane	14.66	87000	JDN
09	000095-13-6	Indene	14.88	380000	JBDN
10		UNKNOWN	15.29	20000	JD
11	017059-52-8	Benzofuran, 7-methyl-	15.57	41000	JDN
12	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	15.68	24000	JDN
13	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.82	25000	JDN
14	000824-90-8	1-Phenyl-1-butene	15.96	37000	JDN
15	002177-47-1	<del>2-Methylindene (01)</del> <i>unknown</i>	16.03	82000	JDN
16	002177-47-1	<del>2-Methylindene (02)</del> <i>unknown</i>	16.13	89000	JDN
17	1000222-12-0	4-Phenylbut-3-ene-1-yne	16.55	2100000	JDN
18	000095-15-8	Benzo[b]thiophene	16.64	68000	JBDN
19		UNKNOWN	17.03	23000	JD
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-08  
 Sample wt/vol: 5.47 (g/mL) g Lab File ID: F0659.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 22.4 Date Analyzed: 11/28/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	005989-27-5	d-Limonene	13.33	5.9	JN
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.



1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-09  
 Sample wt/vol: 3.01 (g/mL) g Lab File ID: F0660.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/20/2008  
 % Moisture: not dec. 18.2 Date Analyzed: 11/28/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.60	400	JN
02	000526-73-8	Benzene, 1,2,3-trimethyl-	12.69	320	JN
03	000098-83-9	.alpha.-Methylstyrene	12.93	190	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.08	710	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	13.15	490	JN
06	000873-49-4	Benzene, cyclopropyl-	13.20	170	JN
07	000271-89-6	Benzofuran	13.35	460	JN
08	000300-57-2	Benzene, 2-propenyl-	13.53	99	JN
09	000496-11-7	Indane	13.67	660	JN
10	000095-13-6	Indene	13.88	3500	JN
11	000824-90-8	1-Phenyl-1-butene	14.17	83	JN
12	017059-52-8	Benzofuran, 7-methyl-	14.39	100	JN
13	004265-25-2	Benzofuran, 2-methyl-	14.47	270	JN
14	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.69	76	JN
15	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.83	160	JN
16	065051-83-4	Benzene, (1-methyl-2-cyclop.	14.90	390	JN
17	002177-47-1	2-Methylindene	15.00	410	JN
18	000275-51-4	Azulene	15.48	9800	JN
19	000270-82-6	2-Benzothiophene #	15.60	490	JN
20	000090-12-0	Naphthalene, 1-methyl-	16.97	560	JN
21	<del>000092-52-4</del>	<del>Biphenyl</del>	<del>17.73</del>	<del>56</del>	<del>JN</del>
22	000582-16-1	Naphthalene, 2,7-dimethyl-	18.26	73	JN
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X2ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-09  
 Sample wt/vol: 3.99 (g/mL) g Lab File ID: C6205.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 18.2 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000103-65-1	Benzene, propyl-	13.29	1700	JN
02	000620-14-4	Benzene, 1-ethyl-3-methyl-	13.42	19000	JN
03	000108-67-8	Benzene, 1,3,5-trimethyl-	13.53	19000	JN
04	000098-83-9	.alpha.-Methylstyrene	13.79	9400	JN
05	000095-63-6	Benzene, 1,2,4-trimethyl-	13.98	40000	JN
06	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	27000	JN
07	000873-49-4	Benzene, cyclopropyl-	14.10	10000	JN
08	000271-89-6	Benzofuran	14.27	12000	JN
09	000526-73-8	Benzene, 1,2,3-trimethyl-	14.44	14000	JN
10	000637-50-3	Benzene, 1-propenyl-	14.49	4300	JN
11	000496-11-7	Indane	14.66	34000	JN
12	000095-13-6	Indene	14.90	84000	JN
13	000527-84-4	Benzene, 1-methyl-2-(1-meth.	15.05	7800	JN
14	002870-04-4	Benzene, 2-ethyl-1,3-dimethy	15.14	10000	JN
15	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	15.18	4500	JN
16	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	15.25	9100	JN
17	000768-49-0	Benzene, (2-methyl-1-propen.	15.30	7200	JN
18	028749-81-7	Bicyclo[4.2.0]octa-1,3,5-tr.	15.36	2900	JN
19	002870-04-4	Benzene, 2-ethyl-1,3-dimethy	15.43	2600	JN
20	017059-52-8	Benzofuran, 7-methyl- (01)	15.48	5800	JN
21	000535-77-3	Benzene, 1-methyl-3-(1-meth.	15.51	5100	JN
22	017059-52-8	Benzofuran, 7-methyl- (02)	15.57	22000	JN
23	002039-90-9	Benzene, 2-ethenyl-1,3-dime.	15.68	9500	JN
24	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.82	11000	JN
25	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.97	15000	JN
26	002177-47-1	2-Methylindene	16.03	19000	JN
27	065051-83-4	Benzene, (1-methyl-2-cyclop.	16.13	16000	JN
28	000612-17-9	1,4-Dihydronaphthalene	16.22	2300	JN
29	000095-15-8	Benzo[b]thiophene	16.66	3000	JN
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X2MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-09RE1  
 Sample wt/vol: 3.99 (g/mL) g Lab File ID: C6207.D  
 Level: (TRACE or LOW/MED) MED Date Received: 11/20/2008  
 % Moisture: not dec. 18.2 Date Analyzed: 11/30/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.40	42000	JDN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.52	48000	JDN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.96	99000	JDN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	62000	JDN
05	000873-49-4	Benzene, cyclopropyl-	14.10	21000	JDN
06	000271-89-6	Benzofuran	14.26	29000	JDN
07	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	14.44	32000	JDN
08	000496-11-7	Indane	14.65	83000	JDN
09	000095-13-6	Indene	14.87	450000	JDN
10	002870-04-4	Benzene, 2-ethyl-1,3-dimethyl-	15.12	23000	JDN
11	000768-49-0	Benzene, (2-methyl-1-propenyl)-	15.25	24000	JDN
12	017059-52-8	Benzofuran, 7-methyl-	15.57	66000	JDN
13	027831-13-6	Benzene, 4-ethenyl-1,2-dimethyl-	15.68	28000	JDN
14	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.82	33000	JDN
15	002039-89-6	Benzene, 2-ethenyl-1,4-dimethyl-	15.96	54000	JDN
16	002177-47-1	2-Methylindene	16.03	84000	JDN
17	065051-83-4	Benzene, (1-methyl-2-cyclopropyl)-	16.13	90000	JDN
18		UNKNOWN	16.39	24000	JD
19	1000222-12-0	4-Phenylbut-3-ene-1-yne	16.55	2900000	JDN
20	000270-82-6	2-Benzothiophene #	16.64	92000	JBDN
21		UNKNOWN	17.02	38000	JD
22	000090-12-0	Naphthalene, 1-methyl-	17.57	420000	JDN
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-02  
 Sample wt/vol: 5.51 (g/mL) g Lab File ID: F0634.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/21/2008  
 % Moisture: not dec. 21.5 Date Analyzed: 11/26/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>000556-67-2</del>	<del>Cyclohexane, octamethyl-</del>	<del>12.43</del>	<del>110</del>	<del>JN</del>
02	000526-73-8	Benzene, 1,2,3-trimethyl- <i>unknown</i>	12.69	53	JN
03	000526-73-8	Benzene, 1,2,3-trimethyl- <i>unknown</i>	13.08	130	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.48	38	JN
05	000496-11-7	Indane	13.67	630	JN
06	000095-13-6	Indene	13.87	87	JN
07		UNKNOWN	14.17	38	J
08	004265-25-2	Benzofuran, 2-methyl-	14.47	57	JN
09	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.69	44	JN
10	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	14.83	78	JN
11	002177-47-1	2-Methylindene	14.90	48	JN
12	065051-83-4	Benzene, (1-methyl-2-cyclop.	15.00	63	JN
13	1000222-12-0	4-Phenylbut-3-ene-1-yne	15.46	3100	JN
14	000270-82-6	2-Benzothiophene #	15.58	110	JN
15	000090-12-0	Naphthalene, 1-methyl-	16.97	440	JN
16	<del>000092-52-4</del>	<del>Biphenyl</del>	<del>17.73</del>	<del>74</del>	<del>JN</del>
17	000939-27-5	Naphthalene, 2-ethyl-	18.06	42	JN
18	000581-42-0	Naphthalene, 2,6-dimethyl-	18.26	77	JN
19	000581-40-8	Naphthalene, 2,3-dimethyl-	18.52	72	JN
20					
21					
22					
23					
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27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-03  
 Sample wt/vol: 5.49 (g/mL) g Lab File ID: F0635.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/21/2008  
 % Moisture: not dec. 24.1 Date Analyzed: 11/26/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>000556-67-2</del>	<del>Cyclotetrasiloxane, octamet.</del>	<del>12.42</del>	<del>100</del>	<del>JN</del>
02		UNKNOWN	14.16	22	J
03	<del>000092-52-4</del>	<del>Biphenyl</del>	<del>17.73</del>	<del>16</del>	<del>JN</del>
04	000581-40-8	Naphthalene, 2,3-dimethyl-	18.53	29	JN
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

*Handwritten notes:*  
 12/1/08  
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<sup>1</sup>EPA-designated Registry Number.

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-04  
 Sample wt/vol: 5.77 (g/mL) g Lab File ID: F0636.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/21/2008  
 % Moisture: not dec. 22.2 Date Analyzed: 11/26/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	11.90	34	J
02		UNKNOWN	12.43	140	J
03	000095-63-6	Benzene, 1,2,4-trimethyl-	12.69	31	JN
04	000611-14-3	Benzene, 1-ethyl-2-methyl-	12.91	41	JN
05	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.08	37	JN
06	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>unknown</i>	13.49	25	JN
07	000496-11-7	Indane	13.67	150	JN
08	000527-84-4	Benzene, 1-methyl-2-(1-meth.	14.00	51	JN
09	002870-04-4	Benzene, 2-ethyl-1,3-dimethy	14.06	24	JN
10		UNKNOWN	14.11	18	J
11		UNKNOWN	14.17	120	J
12		UNKNOWN	14.30	51	J
13	000527-53-7	Benzene, 1,2,3,5-tetramethyl	14.40	28	JN
14		UNKNOWN	14.48	25	J
15	027087-54-3	Bicyclo[4.2.0]octa-1,3,5-tr.	14.65	19	JN
16	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	14.83	65	JN
17		UNKNOWN	14.96	59	J
18		UNKNOWN	15.12	40	J
19					
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	95	

<sup>1</sup>EPA-designated Registry Number.



1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-05  
 Sample wt/vol: 5.48 (g/mL) g Lab File ID: F0637.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/21/2008  
 % Moisture: not dec. 20.2 Date Analyzed: 11/26/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	002471-84-3	1H-Indene, 1-methylene-	15.45	6.1	JN
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
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30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	6.7	

<sup>1</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-01  
 Sample wt/vol: 1.10 (g/mL) g Lab File ID: D9077.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 18.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 5.6 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	3.97	74000	JN
02	000090-12-0	Naphthalene, 1-methyl-	6.02	3400	JN
03	000939-27-5	Naphthalene, 2-ethyl-	6.57	13000	JN
04	000575-43-9	Naphthalene, 1,6-dimethyl-	6.65	45000	JN
05	000575-37-1	Naphthalene, 1,7-dimethyl-	6.75	46000	JN
06	000582-16-1	Naphthalene, 2,7-dimethyl-	6.77	24000	JN
07	000086-53-3	1-Naphthalenecarbonitrile	7.23	14000	JN
08	002131-42-2	Naphthalene, 1,4,6-trimethyl	7.56	11000	JN
09	000829-26-5	Naphthalene, 2,3,6-trimethyl	7.65	20000	JN
10	001855-47-6	1-Isopropenylnaphthalene	7.85	12000	JN
11		UNKNOWN	7.90	24000	J
12	002531-84-2	Phenanthrene, 2-methyl-	9.55	2900	JN
13	000203-64-5	4H-Cyclopenta[def]phenanthre	9.64	6100	JN
14	033543-31-6	Fluoranthene, 2-methyl-	10.92	3800	JN
15	000243-17-4	<del>1H-Benzo[b]fluorene (01)</del> <i>unknown</i>	11.05	12000	JN
16	000243-17-4	<del>1H-Benzo[b]fluorene (02)</del> <i>unknown</i>	11.14	8700	JN
17	003442-78-2	Pyrene, 2-methyl-	11.17	3900	JN
18	064401-21-4	Pyrene, 1,3-dimethyl-	11.56	3400	JN
19		UNKNOWN	11.64	3000	J
20	025732-74-5	Cyclopenta(cd)pyrene, 3,4-d.	11.82	4500	JN
21	002381-31-9	Benz[a]anthracene, 8-methyl-	12.57	4000	JN
22	001482-93-5	Cyclohexane, hexaethylidene-	12.68	3600	JN
23		UNKNOWN	12.95	11000	J
24	000192-97-2	Benzo[e]pyrene	13.43	40000	JN
25		UNKNOWN	13.47	17000	J
26		UNKNOWN	13.56	19000	J
27	000220-97-3	1H-Indeno[2,1-a]phenanthren	14.03	45000	JN
28		UNKNOWN	14.40	15000	J
29	000215-58-7	Benzo[b]triphenylene	15.26	19000	JN
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W3DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:            SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-01RE1  
 Sample wt/vol: 1.10 (g/mL) g Lab File ID: D9124.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 18.5 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 12/03/2008  
 GPC Cleanup: (Y/N) Y pH: 5.6 Dilution Factor: 50.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	3.95	150000	JDN
02	000090-12-0	Naphthalene, 1-methyl-	5.99	190000	JDN
03	000203-64-5	4H-Cyclopenta[def]phenanthre	9.60	130000	JDN
04					
05					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-02  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9094.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 18.3 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 4.8 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	600	J
02		UNKNOWN	1.22	690	J
03		UNKNOWN	1.24	250	J
04		UNKNOWN	1.32	150	J
05		UNKNOWN	2.00	200	J
06		UNKNOWN	2.14	290	J
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-03  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D9076.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 20.3 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000110-56-5	Butane, 1,4-dichloro-	2.86	15000	JN
02	000095-13-6	Indene	3.97	21000	JN
03	1146-65-2	Napthalene, 1-methyl-	6.02	6500	JN
04	000939-27-5	Napthalene, 2-ethyl-	6.57	16000	JN
05	000582-16-1	Napthalene, 2,7-dimethyl- <i>unknown</i>	6.65	45000	JN <i>12/5/08</i>
06	000581-40-8	Napthalene, 2,3-dimethyl-	6.75	51000	JN
07	000582-16-1	Napthalene, 2,7-dimethyl- <i>unknown</i>	6.77	29000	JN <i>12/5/08</i>
08	002245-38-7	Napthalene, 1,6,7-trimethyl	7.53	15000	JN
09	000829-26-5	Napthalene, 2,3,6-trimethyl	7.56	12000	JN
10	002131-42-2	Napthalene, 1,4,6-trimethyl	7.65	17000	JN
11	001855-47-6	1-Isopropenylnapthalene	7.85	15000	JN
12	007320-53-8	Dibenzofuran, 4-methyl-	7.99	28000	JN
13	000203-64-5	4H-Cyclopenta[def]phenanthre	9.64	4900	JN
14	033543-31-6	Fluoranthene, 2-methyl-	10.92	3900	JN
15	000243-17-4	14H-Benzo[b]fluorene (01) <i>unknown</i>	11.05	12000	JN <i>12/5/08</i>
16	000243-17-4	11H-Benzo[b]fluorene (02) <i>unknown</i>	11.14	9500	JN <i>12/5/08</i>
17	002381-21-7	Pyrene, 1-methyl-	11.17	4200	JN
18		UNKNOWN	11.57	4000	J
19	064401-21-4	Pyrene, 1,3-dimethyl-	11.64	3600	JN
20		UNKNOWN	11.82	4500	J
21	003351-32-4	Chrysene, 2-methyl-	12.57	4400	JN
22		UNKNOWN	12.96	21000	J
23	000192-97-2	Benzo[e]pyrene	13.43	39000	JN
24		UNKNOWN	13.47	17000	J
25		UNKNOWN	13.56	16000	J
26	000239-85-0	13H-Dibenzo[a,h]fluorene	14.01	33000	JN
27		UNKNOWN	14.16	13000	J
28		UNKNOWN	14.41	17000	J
29	000215-58-7	Benzo[b]triphenylene	15.28	21000	JN
30	000191-26-4	Dibenzo[def,mno]chrysene	16.26	22000	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W6DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-03RE1  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D9102.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 20.3 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	2.83	37000	JD
02	000095-13-6	Indene	3.95	49000	JDN
03	000091-57-6	Napthalene, 1-methyl-	5.99	38000	JDN
04	000575-43-9	<del>Napthalene, 1,6-dimethyl-</del> <i>unknown</i>	6.63	59000	JDN <i>11/23/08</i>
05	000581-40-8	Napthalene, 2,3-dimethyl-	6.72	74000	JDN
06	000575-43-9	<del>Napthalene, 1,6-dimethyl-</del> <i>unknown</i>	6.75	26000	JDN <i>11/23/08</i>
07	000128-37-0	Butylated Hydroxytoluene	7.19	23000	JDN
08		UNKNOWN	7.82	23000	JD
09	007320-53-8	<del>Dibenzofuran, 4-methyl-</del> <i>unknown</i>	7.97	38000	JDN <i>11/23/08</i>
10	007320-53-8	<del>Bibenzofuran, 4-methyl-</del> <i>unknown</i>	8.06	35000	JDN <i>11/23/08</i>
11	001730-37-6	9H-Fluorene, 1-methyl-	8.42	38000	JDN
12		UNKNOWN	8.63	24000	JD
13	000132-65-0	Dibenzothiophene	8.74	57000	JDN
14		UNKNOWN	9.27	23000	JD
15	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.49	73000	JDN <i>11/23/08</i>
16	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.52	75000	JDN <i>11/23/08</i>
17	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.58	38000	JDN <i>11/23/08</i>
18		UNKNOWN	9.61	130000	JD
19	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.64	40000	JDN
20	000612-94-2	Napthalene, 2-phenyl-	9.86	52000	JDN
21	001576-67-6	Phenanthrene, 3,6-dimethyl-	10.08	24000	JDN
22	000781-43-1	9,10-Dimethylanthracene	10.16	44000	JDN
23		UNKNOWN	10.19	24000	JD
24		UNKNOWN	10.44	46000	JD
25	033543-31-6	Fluoranthene, 2-methyl-	11.01	62000	JDN
26	000243-17-4	11H-Benzo[b]fluorene	11.09	44000	JDN
27		UNKNOWN	11.52	23000	JD
28		UNKNOWN	12.92	23000	JD
29	000192-97-2	Benzo[e]pyrene	13.38	33000	JDN
30	000193-39-5	Dibenzo[def,mno]chrysene	15.19	22000	JDN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W7

Lab Name: A4 SCIENTIFIC; INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-04  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9096.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 19.9 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.6 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	1000	J
02		UNKNOWN	1.22	1400	J
03		UNKNOWN	1.32	180	J
04		UNKNOWN	2.00	180	J
05		UNKNOWN	2.15	230	J
06					
07					
08					
09					
10					
11					
12					
13					
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27					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-05  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9089.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 13.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000090-12-0	Naphthalene, 1-methyl-	6.00	99	JN
02	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.63	180	JN
03	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.73	190	JN
04	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.75	110	JN
05	000128-37-0	Butylated Hydroxytoluene	7.20	330	JN
06	007320-53-8	Dibenzofuran, 4-methyl-	7.98	210	JN
07	002531-84-2	Phenanthrene, 2-methyl-	9.54	95	JN
08	000203-64-5	4H-Cyclopenta[def]phenanthre	9.62	150	JN
09	000243-42-5	Benzo[b]naphtho[2,3-d]furan	10.77	94	JN
10	000243-17-4	<del>11H-Benzo[b]fluorene (01)</del> <i>unknown</i>	11.03	430	JN
11	000243-17-4	<del>11H-Benzo[b]fluorene (02)</del> <i>unknown</i>	11.11	320	JN
12	002381-21-7	Pyrene, 1-methyl-	11.15	200	JN
13		UNKNOWN	11.55	130	J
14	064401-21-4	Pyrene, 1,3-dimethyl-	11.62	150	JN
15	000243-46-9	Benzo[b]naphtho[2,3-d]thiop.	11.77	170	JN
16		UNKNOWN	11.81	260	J
17		UNKNOWN	11.86	100	J
18	034777-33-8	Benzo(c)carbazole	12.34	110	JN
19	001705-84-6	Triphenylene, 2-methyl-	12.55	170	JN
20		UNKNOWN	12.66	91	J
21	001482-93-5	Cyclohexane, hexaethylidene-	12.72	120	JN
22		UNKNOWN	12.94	1200	J
23	001516-94-5	4,4'-Ethylenebis(2,6-di-ter.	13.07	1500	JN
24	000192-97-2	Benzo[e]pyrene	13.41	1700	JN
25		UNKNOWN	13.45	600	J
26		UNKNOWN	14.39	820	J
27		UNKNOWN	15.04	420	J
28	000191-24-2	indeno[1,2,3-cd]fluoranthene	15.24	1300	JN
29	000053-70-3	Dibenz[a,h]anthracene	15.67	470	JN
30	000191-26-4	Dibenzo[def,mno]chrysene	16.22	910	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

*12/23/08*  
*12/23/08*

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W8DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-05RE1  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9090.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 13.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 25.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000091-57-6	Napthalene, 1-methyl-	6.00	3100	JDN
02	000575-37-1	Napthalene, 1,7-dimethyl-	6.72	2000	JDN
03	000128-37-0	Butylated Hydroxytoluene	7.19	3500	JDN
04	000122-34-9	1,3,5-Triazine-2,4-diamine, .	8.59	2300	JDN
05	000132-65-0	Dibenzothiophene	8.75	2600	JDN
06	000613-12-7	Anthracene, 2-methyl-	9.49	2700	JDN
07	002531-84-2	Phenanthrene, 2-methyl-	9.52	3100	JDN
08	000203-64-5	4H-Cyclopenta[def]phenanthre	9.61	5100	JDN
09		UNKNOWN	9.86	2900	JD
10	000189-64-0	3,4:8,9-Dibenzopyrene	10.50	2400	JDN
11	000243-17-4	11H-Benzo[b]fluorene	11.01	2400	JDN
12	000238-84-6	11H-Benzo[a]fluorene	11.09	2300	JDN
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05W9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-06  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D9082.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 15.0 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 8.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	23000	J
02		UNKNOWN	1.23	20000	J
03		UNKNOWN	1.34	2300	J
04		UNKNOWN	2.02	4400	J
05		UNKNOWN	2.16	4700	J
06	000095-13-6	Indene	3.97	2500	JN
07	000582-16-1	Naphthalene, 2,7-dimethyl-	6.65	2400	JN
08	000581-40-8	Naphthalene, 2,3-dimethyl-	6.74	2900	JN
09	000128-37-0	Butylated Hydroxytoluene	7.21	4200	JN
10	000132-65-0	Dibenzothiophene	8.76	2400	JN
11	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.51	2800	JN
12	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.54	2900	JN
13	000613-12-7	Anthracene, 2-methyl-	9.60	2200	JN
14		UNKNOWN	9.63	5500	J
15	035465-71-5	2-Phenyl-naphthalene	9.88	2400	JN
16	1000197-14-1	4b,8-Dimethyl-2-isopropylph.	10.07	4500	JN
17	000886-66-8	Benzene, 1,1'-(1,3-butadiyn.	10.46	2200	JN
18	000243-17-4	<del>1H-Benzo[b]fluorene (01)</del> <i>unknown</i>	11.03	2700	JN
19	000243-17-4	<del>1H-Benzo[b]fluorene (02)</del> <i>unknown</i>	11.11	2100	JN
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-07  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9091.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 15.6 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000090-12-0	Naphthalene, 1-methyl-	6.00	200	JN
02	000582-16-1	Naphthalene, 2,7-dimethyl-	6.64	320	JN
03	000575-37-1	Naphthalene, 1,7-dimethyl-	6.73	350	JN
04	000575-43-9	Naphthalene, 1,6-dimethyl-	6.76	210	JN
05	002131-41-1	Naphthalene, 1,4,5-trimethyl	7.51	130	JN
06	000829-26-5	Naphthalene, 2,3,6-trimethyl	7.63	170	JN
07	002531-84-2	Phenanthrene, 2-methyl-	9.54	130	JN
08		UNKNOWN	9.63	210	J
09	006566-19-4	10,18-Bisnorabieta-5,7,9(10.	10.44	140	JN
10	000243-17-4	<del>11H-Benzo[b]fluorene (01)</del> <i>unknown</i>	11.03	500	JN
11	000243-17-4	<del>11H-Benzo[b]fluorene (02)</del> <i>unknown</i>	11.11	380	JN
12		UNKNOWN	11.16	190	J
13		UNKNOWN	11.55	120	J
14	064401-21-4	Pyrene, 1,3-dimethyl-	11.62	170	JN
15	000243-46-9	Benzo[b]naphtho[2,3-d]thiop.	11.77	120	JN
16		UNKNOWN	11.80	200	J
17	034777-33-8	Benzo(c)carbazole	12.34	220	JN
18	001705-84-6	Triphenylene, 2-methyl-	12.55	180	JN
19		UNKNOWN	12.66	120	J
20		UNKNOWN	12.94	590	J
21	000192-97-2	Benzo[e]pyrene	13.41	1200	JN
22		UNKNOWN	13.45	520	J
23		UNKNOWN	13.55	690	J
24	000220-97-3	11H-Indeno[2,1-a]phenanthren	13.98	640	JN
25		UNKNOWN	14.39	690	J
26		UNKNOWN	15.03	410	J
27		UNKNOWN	15.	650	J
28	000213-46-7	1,2:7,8-Dibenzophenanthrene	15.4	540	JN
29	000053-70-3	Dibenz[a,h]anthracene	15.73	940	JN
30	000191-24-2	Dibenzo[def,mno]chrysene	16.23	810	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X0DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-07RE1  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9106.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 15.6 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 25.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000091-57-6	Napthalene, 1-methyl-	5.99	2700	JDN
02	000571-61-9	Napthalene, 1,5-dimethyl-	6.63	4100	JDN
03	000575-41-7	Napthalene, 1,3-dimethyl-	6.72	4200	JDN
04	000582-16-1	Napthalene, 2,7-dimethyl-	6.75	2700	JDN
05	007320-53-8	Dibenzofuran, 4-methyl-	8.06	2300	JDN
06	001730-37-6	9H-Fluorene, 1-methyl-	8.42	2200	JDN
07	000132-65-0	Dibenzothiophene	8.74	3600	JDN
08	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.49	3800	JDN
09	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i>	9.52	5000	JDN
10	002531-84-2	<del>Phenanthrene, 2-methyl-</del> <i>unknown</i> (03)	9.57	2800	JDN
11		UNKNOWN	9.61	5800	JD
12	000779-02-2	Anthracene, 9-methyl-	9.64	3500	JDN
13	000612-94-2	Napthalene, 2-phenyl-	9.86	2900	JDN
14	000781-43-1	9,10-Dimethylanthracene	10.16	2500	JDN
15		UNKNOWN	10.19	2000	JD
16	006566-19-4	10,18-Bisnorabieta-5,7,9(10.	10.42	4400	JDN
17	000238-84-6	11H-Benzo[a]fluorene	11.01	4100	JDN
18	000243-17-4	11H-Benzo[b]fluorene	11.09	3300	JDN
19					
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23					
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27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-08  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9097.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 22.4 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	1300	J
02		UNKNOWN	1.22	1800	J
03		UNKNOWN	1.32	160	J
04		UNKNOWN	2.00	260	J
05		UNKNOWN	2.15	330	J
06		UNKNOWN	9.61	96	J
07	132545-36-9	1-Methyl-4-ethyl 2-phenylsu.	9.86	90	JN
08	1000197-14-1	4b,8-Dimethyl-2-isopropylph.	10.06	120	JN
09					
10					
11					
12					
13					
14					
15					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-09  
 Sample wt/vol: 1.10 (g/mL) g Lab File ID: D9084.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 18.2 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 6.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	24000	J
02		UNKNOWN	1.23	23000	J
03	000095-13-6	Indene	3.97	49000	JN
04	001127-76-0	Naphthalene, 1-ethyl-	6.57	5500	JN
05	000582-16-1	Naphthalene, 2,7-dimethyl-	6.65	18000	JN
06	000575-41-7	Naphthalene, 1,3-dimethyl-	6.74	22000	JN
07	000581-40-8	Naphthalene, 2,3-dimethyl-	6.77	9400	JN
08	000613-46-7	2-Naphthalenecarbonitrile	7.22	5500	JN
09	002245-38-7	Naphthalene, 1,6,7-trimethyl	7.64	5700	JN
10		UNKNOWN	7.85	6100	J
11	001689-64-1	9H-Fluoren-9-ol	7.99	12000	JN
12	000203-64-5	4H-Cyclopenta[def]phenanthre	9.63	3000	JN
13	000243-17-4	<del>11H-Benzo[b]fluorene (01)</del>	11.04	7400	JN
14	000243-17-4	<del>11H-Benzo[b]fluorene (02)</del>	11.11	6800	JN
15	003442-78-2	Pyrene, 2-methyl-	11.16	3700	JN
16		UNKNOWN	11.54	2600	J
17		UNKNOWN	11.63	2400	J
18		UNKNOWN	11.81	3300	J
19	001705-84-6	Triphenylene, 2-methyl-	12.55	3300	JN
20	001482-93-5	Cyclohexane, hexaethylidene-	12.66	2600	JN
21		UNKNOWN	12.94	5000	J
22	000192-97-2	Benzo[e]pyrene	13.41	11000	JN
23		UNKNOWN	13.46	6300	J
24		UNKNOWN	13.55	8700	J
25	000220-97-3	11H-Indeno[2,1-a]phenanthren	13.99	8000	JN
26		UNKNOWN	14.37	5200	J
27	000215-58-7	Benzo[b]triphenylene	15.24	6700	JN
28	000213-46-7	1,2:7,8-Dibenzophenanthrene	15.72	5100	JN
29	000191-26-4	Dibenzo[def,mno]chrysene	16.21	8300	JN
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X2DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009750-09RE1  
 Sample wt/vol: 1.10 (g/mL) g Lab File ID: D9103.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 18.2 Decanted: (Y/N) N Date Received: 11/20/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/22/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 6.3 Dilution Factor: 20.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	3.95	51000	JDN
02					
03					
04					
05					
06					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-01  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9100.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 20.4 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	950	J
02		UNKNOWN	1.22	1300	J
03		UNKNOWN	1.32	130	J
04		UNKNOWN	2.00	200	J
05		UNKNOWN	2.15	230	J
06					
07					
08					
09					
10					
11					
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26					
27					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-02  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9098.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 21.5 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	1100	J
02		UNKNOWN	1.22	1400	J
03		UNKNOWN	1.32	140	J
04		UNKNOWN	2.00	210	J
05	000109-06-8	Pyridine, 2-methyl-	2.11	770	JN
06		UNKNOWN	2.15	250	J
07		UNKNOWN	2.52	160	J
08	000108-48-5	Pyridine, 2,6-dimethyl-	2.62	490	JN
09	000108-47-4	Pyridine, 2,4-dimethyl-	3.01	550	JN
10	000583-61-9	Pyridine, 2,3-dimethyl-	3.12	130	JN
11		UNKNOWN	3.27	140	J
12		UNKNOWN	3.88	260	J
13	000095-13-6	Indene	3.95	220	JN
14	000611-32-5	Quinoline, 8-methyl-	6.28	130	JN
15	001127-76-0	Naphthalene, 1-ethyl-	6.55	160	JN
16	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.63	410	JN
17	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.72	340	JN
18	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>unknown</i>	6.75	200	JN
19	<del>000643-93-6</del>	<del>1,1'-Biphenyl, 3-methyl-</del>	<del>7.19</del>	<del>150</del>	<del>JN</del>
20	007320-53-8	<del>Dibenzofuran, 4-methyl-</del> <i>unknown</i>	7.97	120	JN
21	007320-53-8	<del>Dibenzofuran, 4-methyl-</del> <i>unknown</i>	8.06	180	JN
22	000086-77-1	2-Dibenzofuranol	9.35	130	JN
23	000203-64-5	4H-Cyclopenta[def]phenanthrene	9.61	120	JN
24		UNKNOWN	10.17	130	J
25	006566-19-4	10,18-Bisnorabieta-5,7,9(10.	10.43	490	JN
26	007132-70-9	3-Acridinol	11.02	360	JN
27		UNKNOWN	13.23	130	J
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X6DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-02RE1  
Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9114.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
% Moisture: 21.5 Decanted: (Y/N) N Date Received: 11/21/2008  
Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 12/01/2008  
GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	006566-19-4	10,18-Bisnorabieta-5,7,9(10.	10.43	1500	JDN
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-03  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9101.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 24.1 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 6.1 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	1100	J
02		UNKNOWN	1.22	1500	J
03		UNKNOWN	1.32	150	J
04		UNKNOWN	2.00	200	J
05		UNKNOWN	2.15	250	J
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-04  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9075.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 22.2 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	6.02	460	J
02		UNKNOWN	6.31	350	J
03	006682-06-0	1H-Indene, 2,3-dihydro-4,5,	6.53	500	JN
04		UNKNOWN	6.58	250	J
05	000575-43-9	Naphthalene, 1,6-dimethyl-	6.65	370	JN
06	000571-58-4	Naphthalene, 1,4-dimethyl-	6.75	390	JN
07		UNKNOWN	6.78	840	J
08		UNKNOWN	7.03	650	J
09	002131-42-2	Naphthalene, 1,4,6-trimethyl	7.29	490	JN
10	002245-38-7	Naphthalene, 1,6,7-trimethyl	7.53	1000	JN
11	000829-26-5	<del>Naphthalene, 2,3,6-trimethyl-</del> <i>unknown</i>	7.63	290	JN
12	000829-26-5	<del>Naphthalene, 2,3,6-trimethyl-</del> <i>unknown</i>	7.66	540	JN
13	033930-85-7	Benzene, (4,5,5-trimethyl-1.	7.96	650	JN
14		UNKNOWN	8.00	350	J
15	000832-69-9	Phenanthrene, 1-methyl-	9.57	250	JN
16		UNKNOWN	9.67	340	J
17	003674-66-6	Phenanthrene, 2,5-dimethyl-	10.20	220	JN
18	000238-84-6	11H-Benzo[a]fluorene	11.06	650	JN
19	000243-17-4	11H-Benzo[b]fluorene	11.15	460	JN
20	002381-21-7	Pyrene, 1-methyl-	11.18	260	JN
21		UNKNOWN	11.83	230	J
22	000239-01-0	11H-Benzo[a]carbazole	12.37	200	JN
23	000192-97-2	Benzo[e]pyrene	13.44	1500	JN
24		UNKNOWN	13.48	1000	J
25		UNKNOWN	15.08	840	J
26		UNKNOWN	15.29	1800	J
27		UNKNOWN	15.88	810	J
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	1000	

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X8DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-04RE1  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D9104.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 22.2 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 20.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000582-16-1	Naphthalene, 2,7-dimethyl-	6.72	2300	JDN
02	000571-61-9	Naphthalene, 1,5-dimethyl-	6.75	3500	JDN
03		UNKNOWN	6.99	2700	JD
04	002131-42-2	Naphthalene, 1,4,6-trimethyl	7.51	4500	JDN
05	002245-38-7	Naphthalene, 1,6,7-trimethyl	7.63	3700	JDN
06		UNKNOWN	7.82	5500	JD
07		UNKNOWN	7.93	4100	JD
08		UNKNOWN	7.97	2700	JD
09		UNKNOWN	8.01	3600	JD
10	003218-36-8	{1,1'-Biphenyl}-4-carboxald.	8.06	2800	JDN
11		UNKNOWN	8.24	2600	JD
12	001430-97-3	<del>2H Fluorene, 2-methyl</del> <i>unknown</i>	8.42	2800	JDN <i>2/23/01</i>
13	001430-97-3	<del>2H Fluorene, 2-methyl</del> <i>unknown</i>	8.45	2300	JDN <i>2/23/01</i>
14	000248-13-5	Azuleno(2,1-b)thiophene	8.74	4600	JDN
15		UNKNOWN	9.28	2300	JD
16	002531-84-2	<del>Phenanthrene, 2-methyl</del> <i>unknown</i>	9.49	5100	JDN <i>2/23/01</i>
17	002531-84-2	<del>Phenanthrene, 2-methyl</del> <i>unknown</i>	9.52	6100	JDN <i>2/23/01</i>
18	002531-84-2	<del>Phenanthrene, 2-methyl</del> <i>unknown</i>	9.58	3500	JDN <i>2/23/01</i>
19		UNKNOWN	9.61	9900	JD
20	000832-69-9	Phenanthrene, 1-methyl-	9.64	3000	JDN
21	137235-51-9	1,2,4,8-Tetramethylbicyclo[.	9.86	5100	JDN
22	001576-67-6	Phenanthrene, 3,6-dimethyl-	10.08	3600	JDN
23	003674-66-6	Phenanthrene, 2,5-dimethyl-	10.16	5700	JDN
24		UNKNOWN	10.19	3500	JD
25		UNKNOWN	10.27	2400	JD
26		UNKNOWN	10.42	3500	JD
27	033543-31-6	Fluoranthene, 2-methyl-	11.01	4900	JDN
28	000238-84-6	11H-Benzo[a]fluorene	11.09	3600	JDN
29		UNKNOWN	15.19	2400	JD
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	6200	

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05X9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05W3  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0009760-05  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D9099.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 20.2 Decanted: (Y/N) N Date Received: 11/21/2008  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 11/21/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 11/26/2008  
 GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.16	940	J
02		UNKNOWN	1.22	1300	J
03		UNKNOWN	1.32	140	J
04		UNKNOWN	2.00	160	J
05		UNKNOWN	2.15	220	J
06					
07					
08					
09					
10					
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26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : December 23, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung *KCT*  
Region III ESAT RPO (3EA20)

TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Tank Car Corporation of America site (Case # 38062; SDG # C05T6). This report has been completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Joshua Cope (TTEMI)

TO File #: 0014

TDF#: 12048

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

**DATE:** December 19, 2008

**SUBJECT:** Organic Data Validation (Level M2)  
Site: Tank Car Corporation of America  
Case: 38062 SDG: C05T6

**FROM:** Kenneth W. Curry  
Senior Data Reviewer

Mahboobeh Mecanic <sup>HW</sup>  
Senior Oversight Chemist

**TO:** Khin-Cho Thuang  
ESAT Region 3 Project Officer

### **OVERVIEW**

Case 38062, Sample Delivery Group (SDG) C05T6, from the Tank Car Corporation of America site consisted of eleven (11) aqueous samples analyzed for volatile and semivolatile compounds and two (2) trip blanks which were analyzed for volatile compounds only. All samples were analyzed by A4 Scientific Incorporated (A4). The sample set included one (1) field blank, one (1) rinsate blank and one (1) field duplicate pair. The samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

### **SUMMARY**

Validation of data was performed according to Innovative Approaches to Data Validation, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of spectra and raw data.

It should be noted that in SOM01.2, 1,4-dioxane is no longer a target analyte by Trace VOA and Trace VOA SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

### **MAJOR PROBLEM**

- In the semivolatile analyses, recoveries of Deuterated Monitoring Compound (DMC) 4-nitrophenol-d4 were less than ten percent (<10%) in samples C05Y0 and C05Y3 and recoveries of DMC 4,6-dinitro-2-methylphenol-d2 were less than ten percent (<10%) in samples C05W0 and C05Y1. No positive results were reported for compounds associated with these DMCs in these samples. Quantitation limits for compounds associated with these DMCs in these samples were rejected and qualified "R" on the DSFs.



**MINOR PROBLEMS**

- Several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the volatile and semivolatile initial and/or continuing calibrations. The associated positive results for these compounds in affected samples were qualified “J” unless superseded by “B”. No precisions were greater than fifty percent (>50%). Therefore, no quantitation limits were qualified based on calibration outliers.
- In the semivolatile analyses, recoveries of DMCs listed below were outside the lower control limits in the samples given. No positive results were reported for compounds associated with these DMCs. Quantitation limits associated with these DMCs were qualified “UL” on the DSF.

<u>DMC</u>	<u>Sample(s)</u>
phenol-d5	C05Y1
4,6-dinitro-2-methylphenol-d2	C05T6, C05T7, C05T8, C05T9

- In the semivolatile analysis of sample C05Y0, recoveries of DMCs 4-methylphenol-d8, dimethylphthalate-d6, acenaphthylene-d8, fluorene-d10, anthracene-d10, pyrene-d10 and benzo(a)pyrene-d12 were outside the upper control limits. Positive results for compounds associated with these DMCs in this sample have been qualified “K” on the DSFs unless superseded by “J”.

**NOTES**

- Concentrations of compounds found in the analyses of the trip, field, method and storage blanks associated with these samples are listed below. Only compounds used to qualify data are listed. Samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration or with concentrations of other contaminant less than five times (<5X) the blank concentrations have been qualified “B” on the DSFs.

<u>Blank</u>	<u>Compound</u>	<u>Concentration µg/L</u>	<u>Affected Samples</u>
Storage (VHBLK01)	methylene chloride*	4.3 J	All Samples
Trip (C05W1)	acetone*	18	C05T6, C05T7, C05T8, C05T9, C05Y0, C05Y2, C05Y4, C05Y5
	2-butanone*	11	C05T6, C05Y0, C05Y2, C05Y4, C05Y5
	chloroform	14	C05T9, C05Y0, C05Y2, C05Y3 C05Y5
	methylcyclohexane	19	C05T6, C05T7, C05T9, C05Y0, C05Y2, C05Y3, C05Y4, C05Y5
	1,2-dichloropropane	12	C05T7, C05T8, C05T9, C05Y2, C05Y3, C05Y5

\* Common Laboratory Contaminant

- Compounds detected below Contract Required Quantitation Limits (CRQLs) were qualified “J” on the DSFs unless superseded by “B”.
- Tentatively Identified Compounds (TICs) were reviewed during data validation. TICs identified as the same compound at different retention times were changed to “unknowns” by the reviewer on the TIC Form Is. Compounds identified as common laboratory or blank contaminants were crossed-off the TIC Form Is by the reviewer. TIC Form Is for samples in which TICs were identified are included in Appendix E.
- One (1) sample container for volatile sample C05Y4 was broken upon receipt by the laboratory as reported in the case narrative. There was enough sample remaining to perform all requested analyses. The Sample Management Office (SMO) was notified by the laboratory.
- In the semivolatile analyses, several DMC recoveries were outside the upper control limits in several samples. No positive results for compounds associated with these DMCs were reported in these samples. Therefore, no data were qualified based on these outliers.
- Reported results for the field duplicate pair, sample pair C05T8/C05T9, were comparable.
- Samples listed below were re-analyzed at dilutions due to one (1) or more compounds exceeding the calibration range in the initial analyses. The positive results for these compounds in these samples were reported from the diluted analysis and annotated with a “+” symbol on the DSFs.

#### Volatile Fraction

<u>Sample</u>	<u>Dilution Factor</u>	<u>Compound(s)</u>
C05Y2	5X	benzene, toluene, m&p-xylene
C05Y3	20X	acetone, benzene, toluene, ethylbenzene, m&p-xylene, o-xylene, styrene, 1,2-dichlorobenzene
C05Y4	5X	benzene

#### Semivolatile Fraction

<u>Sample</u>	<u>Dilution Factor</u>	<u>Compound(s)</u>
C05Y0	10X	4-methylphenol, naphthalene, phenanthrene
C05Y2	100X	phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, naphthalene, 2-methylnaphthalene, acenaphthylene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole
C05Y3	100X	phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, 2,4-dichlorophenol, naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, carbazole
C05Y4	10X	naphthalene
C05Y5	50X	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, carbazole

All data for Case 38062, SDG C05T6, were reviewed in accordance with the Region 3 Innovative Approaches for Validation of Organic Data (Level M2), June 1995.

**ATTACHMENTS**

- 1) Appendix A - Glossary of Data Qualifiers
- 2) Appendix B - Data Summary Forms
- 3) Appendix C - Chain of Custody (COC) Records
- 4) Appendix D - Laboratory Case Narrative
- 5) Appendix E - Tentatively Identified Compounds

DCN: 38062M2

## **Appendix A**

### Glossary of Data Qualifiers

## **GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### **OTHER CODES**

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

## **Appendix B**

Data Summary Forms



Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05T6	C05T7	C05T8	C05T9	C05W0						
Sampling Location :	TCCA-MW-01	TCCA-MW-02	TCCA-MW-03	TCCA-MW-04	TCCA-MW-FB						
Field QC:			Field Dup. of C05T9	Field Dup. of C05T8	Field Blank						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	10:50	14:00	15:20	16:00	16:10						
pH :	<2.0	<2.0	<2.0	<2.0	<2.0						
Dilution Factor :	1.0	1.0	1.0	1.0	1.0						
Volatil Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
*Tetrachloroethene	5.0	1.1	J			2.4	J	2.4	J		
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0										
*Ethylbenzene	5.0										
o-Xylene	5.0										
m,p-Xylene	5.0										
*Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0										
1,1,2,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0										
*1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99



Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C05W1		C05Y0		C05Y1		C05Y2		C05Y3	
Sampling Location :		TCCA-MW-TB		TCCA-PW		TCCA-RB		TCCA-TW-01		TCCA-TW-02	
Field QC:		Trip Blank				Rinsate Blank					
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		11/18/2008		11/20/2008		11/20/2008		11/19/2008		11/19/2008	
Time Sampled :		16:15		19:10		12:48		10:50		14:30	
pH :		<2.0		<2.0		<2.0		<2.0		<2.0	
Dilution Factor :		1.0		1.0		1.0		10./5.0		1.0/20.0	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0										
Chloromethane	5.0										
*Vinyl chloride	5.0										
Bromomethane	5.0										
Chloroethane	5.0										
Trichlorofluoromethane	5.0										
*1,1-Dichloroethene	5.0										
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0										
Acetone	10	18		31	B	9.7	J	22	B	530+	
Carbon Disulfide	5.0							1.2	J	15	
Methyl acetate	5.0							0.86	J	1.1	J
*Methylene chloride	5.0	3.6	B	4.2	B	3.5	B	2.8	B	22	B
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0										
1,1-Dichloroethane	5.0										
cis-1,2-Dichloroethene	5.0							5.9		13	
*2-Butanone	10	11		8.9	B			6.3	B	150	
Bromochloromethane	5.0										
Chloroform	5.0	14		6.0	B			14	B	0.56	B
*1,1,1-Trichloroethane	5.0										
Cyclohexane	5.0									1.0	J
*Carbon tetrachloride	5.0										
*Benzene	5.0			65				460+		3100+	
*1,2-Dichloroethane	5.0									86	
1,4-Dioxane	100										
Trichloroethene	5.0			3.0	J			15		68	
Methylcyclohexane	5.0	19		18	B	17		16	B	17	B
*1,2-Dichloropropane	5.0	12				12		11	B	10	B
Bromodichloromethane	5.0										
cis-1,3-Dichloropropene	5.0										
4-Methyl-2-pentanone	10			3.1	J			3.1	J	89	
*Toluene	5.0			97				300+		3500+	
trans-1,3-Dichloropropene	5.0										

+ = Result reported from the diluted analysis.

DATA SUMMARY FORM: Volatiles

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05W1	C05Y0	C05Y1	C05Y2	C05Y3						
Sampling Location :	TCCA-MW-TB	TCCA-PW	TCCA-RB	TCCA-TW-01	TCCA-TW-02						
Field QC:	Trip Blank		Rinsate Blank								
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	11/18/2008	11/20/2008	11/20/2008	11/19/2008	11/19/2008						
Time Sampled :	16:15	19:10	12:48	10:50	14:30						
pH :	<2.0	<2.0	<2.0	<2.0	<2.0						
Dilution Factor :	1.0	1.0	1.0	1.0/5.0	1.0/20.0						
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0							2.2	J		
*Tetrachloroethene	5.0							10		5.9	
2-Hexanone	10									40	
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0									22	
*Ethylbenzene	5.0			17				77		290+	
o-Xylene	5.0			38				150		710+	
m,p-Xylene	5.0	0.59	J	74				320+		1300+	
*Styrene	5.0			32				92		800+	
Bromoform	5.0										
Isopropylbenzene	5.0			2.6	J			7.9		25	
1,1,2,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0			1.1	J					7.9	
*1,4-Dichlorobenzene	5.0			15						110	
1,2-Dichlorobenzene	5.0			73						890+	
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

+ = Result reported from the diluted analysis.

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C05Y4		C05Y5		C05Y6					
Sampling Location :		TCCA-TW-06		TCCA-TW-09		TCCA-TW-TB					
Field QC:						Trip Blank					
Matrix :		Water		Water		Water					
Units :		ug/L		ug/L		ug/L					
Date Sampled :		11/20/2008		11/20/2008		11/18/2008					
Time Sampled :		14:30		18:00		16:20					
pH :		<2.0		<2.0		<2.0					
Dilution Factor :		1.0/5.0		1.0		1.0					
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0										
Chloromethane	5.0										
*Vinyl chloride	5.0										
Bromomethane	5.0										
Chloroethane	5.0										
Trichlorofluoromethane	5.0										
*1,1-Dichloroethene	5.0										
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0										
Acetone	10	13	B	14	B						
Carbon Disulfide	5.0										
Methyl acetate	5.0										
*Methylene chloride	5.0	2.5	B	3.1	B	2.7	B				
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0										
1,1-Dichloroethane	5.0										
cis-1,2-Dichloroethene	5.0										
*2-Butanone	10	4.7	B	4.9	B	4.2	J				
Bromochloromethane	5.0										
Chloroform	5.0			0.58	B	9.8					
*1,1,1-Trichloroethane	5.0										
Cyclohexane	5.0										
*Carbon tetrachloride	5.0										
*Benzene	5.0	580+		150		1.5	J				
*1,2-Dichloroethane	5.0	13		7.3							
1,4-Dioxane	100										
Trichloroethene	5.0			0.69	J						
Methylcyclohexane	5.0	17	B	17	B						
*1,2-Dichloropropane	5.0			11	B						
Bromodichloromethane	5.0										
cis-1,3-Dichloropropene	5.0			4.6	J						
4-Methyl-2-pentanone	10										
*Toluene	5.0	25		22		1.9	J				
trans-1,3-Dichloropropene	5.0			3.3	J						

+ = Result reported from the diluted analysis.

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C05Y4	C05Y5	C05Y6							
Sampling Location :		TCCA-TW-06	TCCA-TW-09	TCCA-TW-TB							
Field QC:				Trip Blank							
Matrix :		Water	Water	Water							
Units :		ug/L	ug/L	ug/L							
Date Sampled :		11/20/2008	11/20/2008	11/18/2008							
Time Sampled :		14:30	18:00	16:20							
pH :		<2.0	<2.0	<2.0							
Dilution Factor :		1.0/5.0	1.0	1.0							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0			0.52	J						
*Tetrachloroethene	5.0										
2-Hexanone	10			20							
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0			2.9	J						
*Ethylbenzene	5.0	99		85							
o-Xylene	5.0	9.0		53							
m,p-Xylene	5.0	36		37		1.1	J				
*Styrene	5.0	1.6	J	3.5	J						
Bromoform	5.0										
Isopropylbenzene	5.0	4.0	J	16							
1,1,1,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0										
*1,4-Dichlorobenzene	5.0			0.60	J						
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0			82							
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99



Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05T6	C05T7	C05T8	C05T9	C05W0						
Sampling Location :	TCCA-MW-01	TCCA-MW-02	TCCA-MW-03	TCCA-MW-04	TCCA-MW-FB						
Field QC:			Field Dup. of C05T9	Field Dup. of C05T8	Field Blank						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008						
Time Sampled :	10:50	14:00	15:20	16:00	16:10						
Dilution Factor :	1.0	1.0	1.0	1.0	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10										
4-Nitrophenol	10										
Dibenzofuran	5.0										
2,4-Dinitrotoluene	5.0										
Diethylphthalate	5.0										
Fluorene	5.0										
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10										
4,6-Dinitro-2-methylphenol	10		UL		UL		UL		UL		R
N-Nitrosodiphenylamine	5.0										
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10										
Phenanthrene	5.0										
Anthracene	5.0										
Carbazole	5.0										
Di-n-butylphthalate	5.0										
Fluoranthene	5.0										
Pyrene	5.0										
Butylbenzylphthalate	5.0										
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0										
Chrysene	5.0										
Bis(2-ethylhexyl)phthalate	5.0										
Di-n-octylphthalate	5.0										
Benzo(b)fluoranthene	5.0										
Benzo(k)fluoranthene	5.0										
Benzo(a)pyrene	5.0										
Indeno(1,2,3-cd)pyrene	5.0										
Dibenzo(a,h)anthracene	5.0										
Benzo(g,h,i)perylene	5.0										
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: BNA

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C05Y0		C05Y1		C05Y2		C05Y3		C05Y4	
Sampling Location :		TCCA-PW		TCCA-RB		TCCA-TW-01		TCCA-TW-02		TCCA-TW-06	
Field QC:				Rinsate Blank							
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		11/20/2008		11/20/2008		11/19/2008		11/19/2008		11/20/2008	
Time Sampled :		19:10		12:48		10:50		14:30		14:30	
Dilution Factor :		1.0/10.0		1.0		1.0/100.0		1.0/100.0		1.0/10.0	
Semivolatle Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	5.0				UL						
Phenol	5.0	450			UL	360+	J	3500+		5.8	
Bis(2-Chloroethyl)ether	5.0							41			
2-Chlorophenol	5.0										
2-Methylphenol	5.0	430	K			500+	J	3400+		9.8	
2,2'-Oxybis(1-chloropropane)	5.0										
Acetophenone	5.0										
4-Methylphenol	5.0	1000+				1000+		7700+		10	
N-Nitroso-di-n-propylamine	5.0										
Hexachloroethane	5.0										
Nitrobenzene	5.0										
Isophorone	5.0										
2-Nitrophenol	5.0										
2,4-Dimethylphenol	5.0	520	K			680+	J	4000+		36	
Bis(2-chloroethoxy)methane	5.0										
2,4-Dichlorophenol	5.0	170				48		460+	J		
Naphthalene	5.0	3300+		1.3	J	5200+		5900+		420+	
4-Chloroaniline	5.0										
Hexachlorobutadiene	5.0										
Caprolactam	5.0										
4-Chloro-3-methylphenol	5.0										
2-Methylnaphthalene	5.0	470	K			390+	J	440+	J	21	
Hexachlorocyclopentadiene	5.0										
2,4,6-Trichlorophenol	5.0										
2,4,5-Trichlorophenol	5.0	34	J			7.2		3.9	J		
1,1'-Biphenyl	5.0	70	K			43		39		3.5	J
2-Chloronaphthalene	5.0										
2-Nitroaniline	10		R						R		
Dimethylphthalate	5.0										
2,6-Dinitrotoluene	5.0										
Acenaphthylene	5.0	130	K			110+	J	72		1.4	J
3-Nitroaniline	10		R						R		
Acenaphthene	5.0	180	K			73		110+	J	16	

+ = Result reported from the diluted analysis.

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05Y0	C05Y1	C05Y2	C05Y3	C05Y4						
Sampling Location :	TCCA-PW	TCCA-RB	TCCA-TW-01	TCCA-TW-02	TCCA-TW-06						
Field QC:		Rinsate Blank									
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	11/20/2008	11/20/2008	11/19/2008	11/19/2008	11/20/2008						
Time Sampled :	19:10	12:48	10:50	14:30	14:30						
Dilution Factor :	1.0/10.0	1.0	1.0/100.0	1.0/100.0	1.0/10.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10		R						R		
4-Nitrophenol	10		R						R		
Dibenzofuran	5.0	200	K			110+	J	95+	J	8.6	
2,4-Dinitrotoluene	5.0										
Diethylphthalate	5.0										
Fluorene	5.0	350	K			120+	J	140+	J	12	
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10		R						R		
4,6-Dinitro-2-methylphenol	10			R							
N-Nitrosodiphenylamine	5.0							29		8.8	
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10							5.4	J		
Phenanthrene	5.0	930+				180+		210+	J	9.7	
Anthracene	5.0	340	K			210+		51		3.2	J
Carbazole	5.0	360	K			440+		430+	J	16	
Di-n-butylphthalate	5.0										
Fluoranthene	5.0	530	K			49		53		3.7	J
Pyrene	5.0	420	K			31		45		3.1	J
Butylbenzylphthalate	5.0										
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0	180	K			11		12		1.0	J
Chrysene	5.0	170	K			21		10		1.1	J
Bis(2-ethylhexyl)phthalate	5.0	41	J							0.62	J
Di-n-octylphthalate	5.0										
Benzo(b)fluoranthene	5.0	150	K			9.3		8.1		1.2	J
Benzo(k)fluoranthene	5.0	58	K			3.5	J	3.0	J		
Benzo(a)pyrene	5.0	110	K			6.8		6.7		0.88	J
Indeno(1,2,3-cd)pyrene	5.0	71	K			4.2	J	3.0	J		
Dibenzo(a,h)anthracene	5.0	21	J			1.2	J				
Benzo(g,h,i)perylene	5.0	69	K			4.2	J	3.1	J	0.60	J
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

+ = Result reported from the diluted analysis.



Case #: 38062                      SDG : C05T6  
 Site :                                TANK CAR CORPORATION OF AMERICA  
 Lab. :                                A4

Sample Number :	C05Y5										
Sampling Location :	TCCA-TW-09										
Field QC:											
Matrix :	Water										
Units :	ug/L										
Date Sampled :	11/20/2008										
Time Sampled :	18:00										
Dilution Factor :	1.0/50.0										
Semivolatle Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	5.0										
Phenol	5.0										
Bis(2-Chloroethyl)ether	5.0										
2-Chlorophenol	5.0										
2-Methylphenol	5.0	4.3	J								
2,2'-Oxybis(1-chloropropane)	5.0										
Acetophenone	5.0										
4-Methylphenol	5.0										
N-Nitroso-di-n-propylamine	5.0										
Hexachloroethane	5.0										
Nitrobenzene	5.0										
Isophorone	5.0										
2-Nitrophenol	5.0										
2,4-Dimethylphenol	5.0	21									
Bis(2-chloroethoxy)methane	5.0										
2,4-Dichlorophenol	5.0										
Naphthalene	5.0	2500+									
4-Chloroaniline	5.0										
Hexachlorobutadiene	5.0										
Caprolactam	5.0										
4-Chloro-3-methylphenol	5.0										
2-Methylnaphthalene	5.0	96+	J								
Hexachlorocyclopentadiene	5.0										
2,4,6-Trichlorophenol	5.0										
2,4,5-Trichlorophenol	5.0										
1,1'-Biphenyl	5.0	52									
2-Chloronaphthalene	5.0										
2-Nitroaniline	10										
Dimethylphthalate	5.0										
2,6-Dinitrotoluene	5.0										
Acenaphthylene	5.0	9.7									
3-Nitroaniline	10										
Acenaphthene	5.0	220+	J								

+ = Result reported from the diluted analysis.

Case #: 38062

SDG : C05T6

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C05Y5										
Sampling Location :	TCCA-TW-09										
Field QC:											
Matrix :	Water										
Units :	ug/L										
Date Sampled :	11/20/2008										
Time Sampled :	18:00										
Dilution Factor :	1.0/50.0										
Semivolatle Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10										
4-Nitrophenol	10										
Dibenzofuran	5.0	120+	J								
2,4-Dinitrotoluene	5.0										
Diethylphthalate	5.0										
Fluorene	5.0	120+	J								
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10										
4,6-Dinitro-2-methylphenol	10										
N-Nitrosodiphenylamine	5.0										
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10										
Phenanthrene	5.0	160+	J								
Anthracene	5.0	23									
Carbazole	5.0	100+	J								
Di-n-butylphthalate	5.0										
Fluoranthene	5.0	69									
Pyrene	5.0	47									
Butylbenzylphthalate	5.0										
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0	20									
Chrysene	5.0	18									
Bis(2-ethylhexyl)phthalate	5.0	1.3	J								
Di-n-octylphthalate	5.0										
Benzo(b)fluoranthene	5.0	18									
Benzo(k)fluoranthene	5.0	8.1									
Benzo(a)pyrene	5.0	14									
Indeno(1,2,3-cd)pyrene	5.0	8.6									
Dibenzo(a,h)anthracene	5.0	2.4	J								
Benzo(g,h,i)perylene	5.0	8.5									
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

+ = Result reported from the diluted analysis.

## **Appendix C**

### **Chain of Custody (COC) Records**



# USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 38062

R

Region: 3	Date Shipped: 11/18/2008	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
Project Code: CT4416	Carrier Name: FedEx	TAG No./ PRESERVATIVE/ Bottles			
Account Code: PAN000306553	Airbill: 856051291197				
CERCLIS ID: AGX	Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277				
Spill ID:					
Site Name/State: Tank Car Corp MW/PA					
Project Leader: Jordan Vaughn					
Action: Removal Action					
Sampling Co: Tetra Tech					

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C05T6	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), TVOA (14)	TCCA1235 (HCL), TCCA1236 (HCL), TCCA1237 (HCL), TCCA1238 (HCL), TCCA1239 (HCL), TCCA1240 (HCL), TCCA1241 (HCL), TCCA1242 (HCL), TCCA1243 (HCL), TCCA1244, TCCA1245, TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-01	S: 11/18/2008 10:50		MS/MSD
C05T7	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), TVOA (14)	TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-02	S: 11/18/2008 14:00		--
C05T8	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), TVOA (14)	TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-03	S: 11/18/2008 15:20		--
C05T9	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), TVOA (14)	TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-04	S: 11/18/2008 16:00		Duplicate of TCCA-MW-03 C05T8
C05W0	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), TVOA (14)	TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-FB	S: 11/18/2008 16:10		Field Blank
C05W1	Ground Water/ Jordan Vaughn	L/G	TVOA (14)	TCCA1246, TCCA1247, TCCA1248, TCCA1249 (15), TCCA1250 (HCL), TCCA1251 (HCL), TCCA1252 (HCL), TCCA1253, TCCA1254 (5), TCCA1255 (HCL), TCCA1256 (HCL), TCCA1257 (HCL), TCCA1269, TCCA1270 (5), TCCA1258 (HCL), TCCA1259 (HCL), TCCA1260 (HCL), TCCA1267, TCCA1268 (5), TCCA1261 (HCL), TCCA1262 (HCL), TCCA1263 (HCL), TCCA1264, TCCA1265 (5), TCCA1266 (HCL) (1)	TCCA-MW-TB	S: 11/18/2008 16:15		Trip Blank

Shipment for Case Complete? N	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOCwater = SVOC water, TVOA = SOM01.2 TVOA	Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G	Shipment Iced?



# USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 38062  
DAS No:

R

Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name/State: Project Leader: Action: Sampling Co:	3 CT4416 PAN000306553 AGX Tank Car Corp TW/PA Jordan Vaughn Removal Action Tetra Tech	Date Shipped: 11/21/2008 Carrier Name: FedEx Airbill: 860435691298 Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	Chain of Custody Record Relinquished By (Date / Time) Received By (Date / Time) Sampler Signature:					
ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C05Y0	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), TVOA (14)	TCCA1345 (HCL), TCCA1346 (HCL), TCCA1347 (HCL), TCCA1348, TCCA1349 (5) TCCA1350 (HCL), TCCA1351 (HCL), TCCA1352 (HCL) (3) TCCA1355 (HCL), TCCA1356 (HCL), TCCA1357 (HCL), TCCA1358, TCCA1359 (5) TCCA1360 (HCL), TCCA1361 (HCL), TCCA1362 (HCL), TCCA1363, TCCA1364 (5) TCCA1365 (HCL), TCCA1366 (HCL), TCCA1367 (HCL), TCCA1368, TCCA1369 (5) TCCA1370 (HCL), TCCA1371 (HCL), TCCA1372 (HCL), TCCA1373, TCCA1374 (5) TCCA1375 (HCL), TCCA1376 (HCL) (2)	TCCA-PW	S: 11/20/2008 19:10		--
C05Y1	Ground Water/ Jordan Vaughn	L/G	TVOA (14)		TCCA-RB	S: 11/20/2008 12:48		-- <i>Rem-sat</i>
C05Y2	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), TVOA (14)		TCCA-TW-01	S: 11/19/2008 10:50		--
C05Y3	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), TVOA (14)		TCCA-TW-02	S: 11/19/2008 14:30		--
C05Y4	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), TVOA (14)		TCCA-TW-06	S: 11/20/2008 14:30		--
C05Y5	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), TVOA (14)		TCCA-TW-09	S: 11/20/2008 18:00		--
C05Y6	Ground Water/ Jordan Vaughn	L/G	TVOA (14)		TCCA-TW-TB	S: 11/18/2008 16:20		-- <i>TK-1</i>

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOCwater = SVOC water, TVOA = SOM01.2 TVOA	Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G		Shipment Iced? _____



**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38062

DAS No:

**R**

Region: 3	Date Shipped:	Chain of Custody Record	
Project Code: CT4416	Carrier Name: FedEx	Relinquished By	Sampler Signature:
Account Code: PAND000306553	Airbill:	(Date / Time)	Received By
CERCLIS ID: AGX	Shipped to:	1	(Date / Time)
Spill ID: Tank Car Corp TWIPA	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	2	
Site Name/State: Jordan Vaughn		3	
Project Leader: Removal Action		4	
Action: Tetra Tech			
Sampling Co:			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C05Y1	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14)	TCCA1353, TCCA1354 (2)	TCCA-RB	S: 11/20/2008 12:48		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOCwater = SVOC water	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

**TR Number: 3-023200937-112108-0001**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

# U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY	
RAS#	Analytical TAT
CT4416	
DAS#	
NSF#	14

33062

Date: 11/10/2008		Site Activity: Removal Site-Evaluations	
Site Name: Tank Car Corporation of America		Street Address: 1725 Walnut Ave	
City: <del>Orland</del> <i>Keeler</i>		State: PA	
Program: Superfund		Acct. #: 2009 T03 N 302DC6C A3GXR500	
Site ID:		CERCLIS #: <i>PA000000000</i>	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Title: Draft Sampling and Analysis Plan	
EPA Project Leader: Michael Towle		Phone#: 215-814-3272	
Request Preparer: JOSHUA COPE		Cell Phone #: 215-768-8114	
Site Leader: Jordan Vaughn		Cell Phone #: 215-651-4022	
Contractor: Tetra Tech EM Inc		EPA CO/PO: Lorrie Murray/Karen Wodarczyk	
#Samples 13	Matrix: water-non potable	Parameter: TCL VOC low water	Method: SOM01.2
#Samples 11	Matrix: water-non potable	Parameter: TCL SVOC low water	Method: SOM01.2
#Samples 1	Matrix: water-non potable	Parameter: TCL Pesticides, PCBs water	Method: SOM01.2
#Samples 13	Matrix: soil	Parameter: TCL VOC low soil	Method: SOM01.2
#Samples 26	Matrix: soil	Parameter: TCL SVOC low soil	Method: SOM01.2
#Samples 13	Matrix: soil	Parameter: TCL Pesticides and PCBs soil	Method: SOM01.2
#Samples 1	Matrix: water-non potable	Parameter: TAL Metals & Hg water	Method: ILM05.4 ICPAES & Hg
#Samples 13	Matrix: soil	Parameter: TAL Metals & Hg soil	Method: ILM05.4 ICPAES & Hg
Ship Date From: 11/18/2008		Ship Date To: 11/21/2008	
Org. Validation Level M2		Inorg. Validation Level IM2	
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		IF Yes, TAT Needed: <input checked="" type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) <i>72hrs</i>	
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) <i>14/16</i>			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached DLs Needed.			

"Vaughn, Jordan"  
<jordan.vaughn@ttemi.com>  
12/08/2008 08:56 PM

To Dwayne Hall/ESC/R3/USEPA/US@EPA, Khin-Cho  
Thaung/ESC/R3/USEPA/US@EPA, Michael  
Towle/R3/USEPA/US@EPA, Lorrie  
cc John Kwedar/ESC/R3/USEPA/US@EPA, Dan  
Slizys/ESC/R3/USEPA/US@EPA, Victor  
Yastrop/ESC/R3/USEPA/US@EPA, Judy  
bcc

Subject RE: Requesting duplicate sample pair information and  
regional traffic reports for case number 38062, Tank Car  
Corporation

Dwayne,

Attached please find the regional chain of custody for  
3-023200937-111908-0002.

Duplicate pairs for the submitted samples are:

MC05T2 (TCCA-SS-13) is a duplicate of MC05T0 (TCCA-SS-11)  
MC05R8 (TCCA-SS-11) is a duplicate of MC05R6 (TCCA-SS-11)  
C05T9 (TCCA-MW-04) is a duplicate of C05T8 (TCCA-MW-03)  
C05W9 (TCCA-MW-04) is a duplicate of C05W8 (TCCA-MW-03)

Sincerely,

Jordan Vaughn | Geologist  
Mobile: 215.651.4022 | Main: 610.485.6410 | Fax: 610.485.8587  
jordan.vaughn@ttemi.com

Tetra Tech EM Inc.  
7 Creek Parkway, Suite 700 | Boothwyn, PA 19061 | www.tetratech.com

-----Original Message-----

From: Hall.Dwayne@epamail.epa.gov [mailto:Hall.Dwayne@epamail.epa.gov]  
Sent: Monday, December 08, 2008 10:47 AM  
To: Thaung.Khin-Cho@epamail.epa.gov; Towle.Michael@epamail.epa.gov;  
Murray.Lorrie@epamail.epa.gov; Wodarczyk.Karen@epamail.epa.gov  
Cc: Kwedar.John@epamail.epa.gov; Slizys.Dan@epamail.epa.gov;  
Yastrop.Victor@epamail.epa.gov; Snyder.Judy@epamail.epa.gov;  
Penix.Lisa@epamail.epa.gov; Vaughn, Jordan; Cope, Joshua; Murphy, Marian  
Subject: Requesting duplicate sample pair information and regional  
traffic reports for case number 38062, Tank Car Corporation

Disclaimer: Information contain below does not constitute technical  
direction. The Sampling/Field  
contractor shall contact their applicable EPA Contracting  
Officer Representative (COR) for technical direction

Case: 38062  
Lab: A4 Scientific  
SDG: C05W3

Site: Tank Car Corporation of America  
EPA Project Leader: Michael Towle  
Site Leader: Jordan Vaughn

*original*  
*copy*



Issue 1:

The corresponding Regional chain of custody document (TR number: 3-023200937-111908-0002) has not been received for this case. Please fax (number included below) or email a copy of this document.

Issue 2:

Duplicate sample pair information was not specified on any of the chain of custody documents. Please e-mail a response that specifies duplicate sample pair information if applicable for this case. No memo to file required. Thank you.

\*\*\*\*\*  
\*\*\*\*\*

Dwayne Hall  
ESAT Region 3 R.S.C.C. Auditor/PM2.5 Field Auditor  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone: 410-305-2602  
Field Cell Phone: 202-256-5518  
Fax: 410-305-3095

\*\*\*\*\*  
\*\*\*\*\*



TCCA SB SVOC Pest.pdf

"Cope, Joshua"  
<joshua.cope@ttemi.com>  
12/18/2008 10:18 AM

To Judy Snyder/ESC/R3/USEPA/US@EPA, "Vaughn, Jordan"  
<jordan.vaughn@ttemi.com>  
cc  
bcc  
Subject RE: Quick answer needed: 38062, Tank Car Corp. - is  
C05Y1 a rinsate, is C05Y6 a trip blank? Regional COC does  
not say.

Judy,

I don't have the TR in front of me but maybe this key will help:

RB = Rinsate Blank  
FB = Field Blank  
TB = Trip Blank

---

From: Snyder.Judy@epamail.epa.gov [Snyder.Judy@epamail.epa.gov]  
Sent: Thursday, December 18, 2008 9:43 AM  
To: Cope, Joshua; Vaughn, Jordan  
Subject: Quick answer needed: 38062, Tank Car Corp. - is C05Y1 a rinsate, is  
C05Y6 a trip blank? Regional COC does not say.

\*\*\*\*\*

Judy Snyder  
ESAT Auditor, Region 3  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone 410-305-3015  
Fax 410-305-3095

## **Appendix D**

### Laboratory Case Narrative

Contract #: EPW05036	Case #: 38062	SDG #: C05T6
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SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
C05T6	0009751-01	Water	15	11/20/08 10:00	SOM01.2 VOA LOW SOM01.2 SVOA	
C05T7	0009751-02	Water	5	11/20/08 10:00	SOM01.2 SVOA SOM01.2 VOA LOW	
C05T8	0009751-03	Water	5	11/20/08 10:00	SOM01.2 SVOA SOM01.2 VOA LOW	
C05T9	0009751-04	Water	5	11/20/08 10:00	SOM01.2 SVOA SOM01.2 VOA LOW	
C05W0	0009751-05	Water	5	11/20/08 10:00	SOM01.2 SVOA SOM01.2 VOA LOW	
C05W1	0009751-06	Water	1	11/20/08 10:00	SOM01.2 VOA LOW	
C05Y0	0009762-01	Water	5	11/22/08 11:05	SOM01.2 VOA LOW SOM01.2 SVOA	
C05Y1	0009762-02	Water	5	11/22/08 11:05	SOM01.2 SVOA SOM01.2 VOA LOW	RB
C05Y2	0009762-03	Water	5	11/22/08 11:05	SOM01.2 SVOA SOM01.2 VOA LOW	
C05Y3	0009762-04	Water	5	11/22/08 11:05	SOM01.2 SVOA SOM01.2 VOA LOW	
C05Y4	0009762-05	Water	5	11/22/08 11:05	SOM01.2 SVOA SOM01.2 VOA LOW	
C05Y5	0009762-06	Water	5	11/22/08 11:05	SOM01.2 SVOA SOM01.2 VOA LOW	
C05Y6	0009762-07	Water	2	11/22/08 11:05	SOM01.2 VOA LOW	TB, SDG Final SX.

Contract #: EPW05036	Case #: 38062	SDG #: C05T6
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The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)
11/20/2008	1	5
11/22/2008	1	5

The following issues were noted:

**Issue 1:** A temperature blank was not included with the 7 water samples received on 11/22/08. The following method was used to record cooler temperature. Removed ice between two sample containers and placed thermometers between them and stabilized for several minutes. The thermometer was not allowed to come in contact with any material except sample containers. The temperature of the shipping container was recorded on the TR/COC and form DC-1.

**Resolution 1:** Per Region 3, the laboratory proceeded with the analysis of the samples.

**Issue 2:** The laboratory received one 40mL vial broken for sample C05Y4. The laboratory has two vials remaining and has sufficient volume for the requested VOA analysis.

**Resolution 2:** Per Region 3, the laboratory proceeded with the analysis of the sample.

**Issue:** The TR/COC lists the analysis as TVOA for the water samples received on 11/20/08; however, the Scheduling Notification Form lists the analysis as VOA.

**Resolution:** Per Region 3, the laboratory performed the analyses as indicated on the Scheduling Notification Form, and proceed with the analysis of the samples.

Directive (email) is enclosed. No other discrepancies or issues were noted during sample receipt and login.

**VOLATILES LOW/MEDIUM**

Samples were analyzed using instrument C-5973.

Instrument C-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

All VOA samples had the pH characteristics verified. The reading is listed below.

EPA SAMPLE #	LAB SAMPLE #	pH
C05T6	0009751-01	≤ 2
C05T7	0009751-02	≤ 2
C05T8	0009751-03	≤ 2
C05T9	0009751-04	≤ 2
C05W0	0009751-05	≤ 2
C05Y0	0009762-01	≤ 2
C05Y1	0009762-02	≤ 2
C05Y2	0009762-03	≤ 2
C05Y3	0009762-04	≤ 2
C05Y4	0009762-05	≤ 2

Contract #: EPW05036	Case #: 38062	SDG #: C05T6
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C05Y5	0009762-06	≤ 2
C05Y6	0009762-07	≤ 2
C05Y0	0009762-08	≤ 2

MS/MSD was not required for VOA.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C05Y2	5
C05Y3	20
C05Y4	5

### SEMI-VOLATILES

#### 1) Extractions

Water samples and associated blanks were extracted by continuous liquid-liquid extraction method. No problems were encountered during extraction.

Sample "C05Y0" was dark and oily and can be blowdown to 10ml. Lab submitted a waiver request.

#### 2) Analysis

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was not required for SVOA.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C05Y0	10
C05Y2	100
C05Y3	100
C05Y4	10
C05Y5	50

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	Sample ID
Phenol-d5	SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, C05T6, C05T7, C05T8, C05T9, C05W0, C05Y0, C05Y0DL, C05Y1, C05Y2, C05Y2DL, C05Y3, C05Y3DL, C05Y4, C05Y4DL, C05Y5, C05Y5DL, SSTD0207U, SSTD0207V, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, SSTD0208A, SSTD0208B, SBLK1H, SBLK1G
Benzo (b) fluoranthene	C05Y0, C05Y0DL, C05Y3, C05Y4, C05Y5
Benzo (k) fluoranthene	SSTD0207B, SSTD0107B, SSTD0057B, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, C05Y0, C05Y0DL, C05Y2, C05Y3, C05Y5, SSTD0207U, SSTD0207V, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0208B
Indeno (1, 2, 3-cd) pyrene	SSTD0207B, SSTD0107B, SSTD0057B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0207Z, C05Y0, C05Y2, C05Y3, C05Y5, SSTD0207U, SSTD0207V, SSTD0207W, SSTD0207X, SSTD0207Y, SSTD0208A, SSTD0208B

Contract #: EPW05036	Case #: 38062	SDG #: C05T6
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2, 4-Dinitrophenol	SSTD0207B, SSTD0107B, SSTD0407B, SSTD0807B, SSTD0207C, SSTD0207W, SSTD0207Z, SSTD0207U, SSTD0207V, SSTD0207W, SSTD0208A, SSTD0208B
Benzo (a) pyrene	C05Y2DL

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

**VOLATILES**

**Water (Low/Med, Trace & SIM):**

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(D_f)}{(A_{is})(RRF)(V_o)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured.

$A_{is}$  = Area of the characteristic ion (EICP) for the internal standard.

$I_s$  = Amount of internal standard added in nanograms (ng).

$\overline{RRF}$  = Mean relative response factor from the initial calibration.

$V_o$  = Total volume of water purged, in milliliters (mL).

$D_f$  = Dilution factor.

**Semivolatiles:**

**Water**

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(V_i)(D_f)(GPC)}{(A_{is})(RRF)(V_o)(V_i)}$$

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in nanograms (ng).

$\overline{RRF}$  = Mean relative response factor determined from the initial calibration.

$V_o$  = Volume of water extracted in milliliters (mL).

$V_i$  = Volume of extracted infected in microliters ( $\mu\text{L}$ ).

$V_1$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ). ( $V_1 = 1000\mu\text{L}$ ).

$D_f$  = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. (If, no GPC is performed, GPC=1).}$$

$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy Sample Data Package and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

SNW (Production Supervisor)  
Signature and Title

12/04/08  
Date of Signature

## **Appendix E**

TIC Form Is



1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-01  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6231.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/01/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.39	17	JN
02	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 uL)</del>	13.50	14	JN
03	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 uL)</del>	13.95	37	JN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.03	15	JN
05	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 uL)</del>	14.42	14	JN
06	000496-11-7	Indane	14.63	49	JN
07	000095-13-6	Indene	14.86	200	JN
08	000767-58-8	Indan, 1-methyl-	15.23	8.1	JN
09		UNKNOWN	15.27	7.7	J
10	017059-52-8	Benzofuran, 7-methyl-	15.55	13	JN
11	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.81	9.1	JN
12	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.95	19	JN
13	002177-47-1	2-Methylindene	16.00	21	JN
14	000767-59-9	1H-Indene, 1-methyl-	16.10	32	JN
15	000270-82-6	2-Benzothiophene #	16.63	29	JN
16	000090-12-0	Naphthalene, 1-methyl-	17.54	81	JN
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

*DJ 14/1/08*

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-03  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6151.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec.          Date Analyzed: 11/29/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:          (uL) Soil Aliquot Volume:          (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.42	64	JN
02	000108-67-8	Benzene, 1,3,5-trimethyl-	13.53	50	JN
03	000620-14-4	Benzene, 1-ethyl-3-methyl-	13.77	23	JN
04	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0.6) u.k.w</del>	13.98	140	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	28	JN
06	000271-89-6	Benzofuran	14.27	140	JN
07	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0.6) u.k.w</del>	14.44	62	JN
08	000496-11-7	Indane	14.66	270	JN
09	000095-13-6	Indene	14.88	1200	JN
10	000767-58-8	Indan, 1-methyl-	15.25	37	JN
11	<del>004265-25-2</del>	<del>Benzofuran, 2-methyl- (01) u.k.w</del>	15.48	51	JN
12	<del>004265-25-2</del>	<del>Benzofuran, 2-methyl- (02) u.k.w</del>	15.57	110	JN
13	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.82	41	JN
14	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.97	86	JN
15	<del>002177-47-1</del>	<del>2-Methylindene (01) u.k.w</del>	16.03	73	JN
16	<del>002177-47-1</del>	<del>2-Methylindene (02) u.k.w</del>	16.13	120	JN
17	000270-82-6	2-Benzothiophene #	16.66	170	JN
18	000090-12-0	Naphthalene, 1-methyl-	17.57	170	JN
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

DJ  
11/29/08

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y2DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-03RE1  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6232.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. Date Analyzed: 12/01/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>000541-05-9</del>	<del>Cyclotrisiloxane, hexamethyl</del>	<del>9.35</del>	<del>34</del>	<del>JDN</del>
02	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.39	83	JDN
03	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 u/L)</del>	13.50	67	JDN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.95	190	JDN
05	000271-89-6	Benzofuran	14.24	170	JDN
06	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 u/L)</del>	14.42	70	JDN
07	000496-11-7	Indane	14.63	340	JDN
08	000095-13-6	Indene	14.86	1700	JDN
09	<del>003454-07-7</del>	<del>Benzene, 1-ethenyl-4-ethyl- (u/L)</del>	15.23	49	JDN
10	004265-25-2	Benzofuran, 2-methyl-	15.46	38	JDN
11	017059-52-8	Benzofuran, 7-methyl-	15.55	97	JDN
12	<del>003454-07-7</del>	<del>Benzene, 1-ethenyl-4-ethyl- (u/L)</del>	15.81	45	JDN
13	002234-20-0	2,4-Dimethylstyrene	15.95	89	JDN
14	002177-47-1	2-Methylindene	16.00	72	JDN
15	000767-59-9	1H-Indene, 1-methyl-	16.10	110	JDN
16	000270-82-6	2-Benzothiophene #	16.63	200	JDN
17	000090-12-0	Naphthalene, 1-methyl-	17.73	140	JDN
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19					
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26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

*(Handwritten initials and date)*  
14/1/08

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-04  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6145.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 11/29/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000110-01-0	Thiophene, tetrahydro-	10.11	190	JN
02	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl- (UK)</del>	13.42	43	JN
03	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 UK)</del>	13.53	28	JN
04	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl- (UK)</del>	13.77	16	JN
05	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0 UK)</del>	13.98	91	JN
06	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.05	58	JN
07	000873-49-4	Benzene, cyclopropyl-	14.10	18	JN
08	000526-73-8	Benzene, 1,2,3-trimethyl- (0)	14.44	39	JN
09	<del>000496-11-7</del>	<del>Indane (01) UK</del>	14.49	12	JN
10	<del>000496-11-7</del>	<del>Indane (02) UK</del>	14.66	130	JN
11	000095-13-6	Indene	14.90	680	JN
12	000767-58-8	Indan, 1-methyl-	15.25	14	JN
13	017059-52-8	Benzofuran, 7-methyl-	15.48	29	JN
14	004265-25-2	Benzofuran, 2-methyl-	15.57	46	JN
15	000874-35-1	1H-Indene, 2,3-dihydro-5-me.	15.82	15	JN
16	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.97	36	JN
17	002177-47-1	2-Methylindene	16.03	64	JN
18	065051-83-4	Benzene, (1-methyl-2-cyclop.	16.13	89	JN
19	000612-17-9	1,4-Dihydronaphthalene	16.22	13	JN
20	000270-82-6	2-Benzothiophene #	16.66	65	JN
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29					
30	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

DJ  
11/29/08

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y3DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-04RE1  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6233.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. Date Analyzed: 12/01/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 20.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000110-01-0	Thiophene, tetrahydro-	10.08	290	JDN
02	000620-14-4	Benzene, 1-ethyl-3-methyl-	13.39	170	JDN
03	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0-UKN)</del>	13.50	120	JDN
04	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl- (0-UKN)</del>	13.95	360	JDN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	14.02	210	JDN
06	000271-89-6	Benzofuran	14.24	320	JDN
07	000526-73-8	Benzene, 1,2,3-trimethyl- (0	14.42	130	JDN
08	000496-11-7	Indane	14.63	520	JDN
09	000095-13-6	Indene	14.86	3800	JDN
10	017059-52-8	Benzofuran, 7-methyl-	15.55	130	JDN
11	002177-47-1	2-Methylindene	16.00	190	JDN
12	000767-59-9	1H-Indene, 1-methyl-	16.10	260	JDN
13	000270-82-6	2-Benzothiophene #	16.63	250	JDN
14	<del>000090-12-0</del>	<del>Naphthalene, 1-methyl- (01) UKN</del>	17.54	510	JDN
15	<del>000090-12-0</del>	<del>Naphthalene, 1-methyl- (02) UKN</del>	17.73	300	JDN
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	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

*JV*  
*12/18/08*

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-05  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6148.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. Date Analyzed: 11/29/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	13.31	7.2	J
02	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl- (u/kw)</del>	13.42	7.9	JN
03	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl- (u/kw)</del>	13.77	5.4	JN
04	<del>000526-73-0</del>	<del>Benzene, 1,2,3-trimethyl- (0 u/kw)</del>	13.98	15	JN
05	000091-64-5	2H-1-Benzopyran-2-one	14.27	5.4	JN
06	<del>000526-73-0</del>	<del>Benzene, 1,2,3-trimethyl- (0 u/kw)</del>	14.44	8.8	JN
07	000496-11-7	Indane	14.66	490	JN
08	000095-13-6	Indene	14.88	55	JN
09	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	15.25	6.3	JN
10	004265-25-2	Benzofuran, 2-methyl-	15.48	7.6	JN
11	017059-52-8	Benzofuran, 7-methyl-	15.58	17	JN
12	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.82	7.7	JN
13	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	15.97	18	JN
14	<del>000767-59-9</del>	<del>1H-Indene, 1-methyl- (01) u/kw</del>	16.03	8.0	JN
15	<del>000767-59-9</del>	<del>1H-Indene, 1-methyl- (02) u/kw</del>	16.13	13	JN
16	000270-82-6	2-Benzothiophene #	16.64	14	JN
17	<del>000090-12-0</del>	<del>Naphthalene, 1-methyl- (01) u/kw</del>	17.57	27	JN
18	<del>000090-12-0</del>	<del>Naphthalene, 1-methyl- (02) u/kw</del>	17.76	29	JN
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

D 141106

1J - FORM I VOA-TIC  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y4DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-05RE1  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6234.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/01/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000496-11-7	Indane	14.63	670	JDN
02	000095-13-6	Indene	14.86	68	JDN
03					
04					
05					
06					
07					
08					
09					
10					
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29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

*D)*  
*12/1/08*

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:            SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-06  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C6147.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 11/22/2008  
 % Moisture: not dec.            Date Analyzed: 11/29/2008  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume:            (uL) Soil Aliquot Volume:            (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl</del> ( <del>uL</del> )	13.45	54	JN
02	000108-67-8	Benzene, 1,3,5-trimethyl-	13.53	50	JN
03	<del>000611-14-3</del>	<del>Benzene, 1-ethyl-2-methyl</del> ( <del>uL</del> )	13.77	25	JN
04	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl</del> ( <del>uL</del> )	13.98	170	JN
05	<del>000526-73-8</del>	<del>Benzene, 1,2,3-trimethyl</del> ( <del>uL</del> )	14.44	60	JN
06	000496-11-7	Indane	14.66	940	JN
07	000095-13-6	Indene	14.88	160	JN
08	000099-87-6	Benzene, 1-methyl-4-(1-meth.	15.05	25	JN
09	000527-84-4	Benzene, 1-methyl-2-(1-meth.	15.14	27	JN
10	000767-58-8	Indan, 1-methyl-	15.25	29	JN
11	017059-52-8	Benzofuran, 7-methyl-	15.48	25	JN
12	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.82	55	JN
13	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.97	110	JN
14	<del>002177-47-1</del>	<del>2-Methylindene (01)</del> ( <del>uL</del> )	16.03	66	JN
15	<del>002177-47-1</del>	<del>2-Methylindene (02)</del> ( <del>uL</del> )	16.13	94	JN
16	000275-51-4	Azulene	16.55	3000	JN
17	000095-15-8	Benzo[b]thiophene	16.64	110	JN
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009751-01  
Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9020.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
% Moisture:          Decanted: (Y/N)          Date Received: 11/20/2008  
Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/20/2008  
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/21/2008  
GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	18	J
02		UNKNOWN	1.23	23	J
03		UNKNOWN	1.34	5.9	J
04		UNKNOWN	2.08	5.9	J
05		UNKNOWN	2.16	13	J
06		UNKNOWN	2.36	2.3	J
07		UNKNOWN	3.14	2.1	J
08		UNKNOWN	5.50	2.4	J
09		UNKNOWN	7.83	2.9	J
10					
11					
12					
13					
14					
15					
16					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*11/21/08*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009751-02  
 Sample wt/vol: 1000 (g/mL) \_\_\_\_\_ mL Lab File ID: D9024.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/20/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/20/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/21/2008  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.23	37	J 49
02		UNKNOWN	1.33	30	J 45
03		UNKNOWN	2.17	4.1	J 24
04		UNKNOWN	3.14	2.0	J
05					
06					
07					
08					
09					
10					
11					
12					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	2.2	

<sup>2</sup>EPA-designated Registry Number.

*DV*  
*11/11/08*

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
C05T8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009751-03  
Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9021.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
% Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/20/2008  
Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/20/2008  
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/21/2008  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.29	9.0	J JB
02		UNKNOWN	1.34	5.1	J JB
03		UNKNOWN	1.82	3.5	J
04		UNKNOWN	2.16	5.2	J JB
05					
06					
07					
08					
09					
10					
11					
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14					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DW*  
*11/19/08*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05T9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009751-04  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9022.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/20/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/20/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/21/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.23	36	J <i>33</i>
02		UNKNOWN	1.82	2.3	J
03		UNKNOWN	2.16	3.4	J <i>26</i>
04					
05					
06					
07					
08					
09					
10					
11					
12					
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24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*11/21/08*



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

*Field Data*

EPA SAMPLE NO.

C05W0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009751-05  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9029.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/20/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/20/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	33	J
02		UNKNOWN	1.23	10	J
03		UNKNOWN	1.33	5.3	J
04		UNKNOWN	2.08	7.4	J
05		UNKNOWN	2.16	11	J
06	000096-76-4	Phenol, 2,4-bis(1,1-dimethy.	7.21	23	JN
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-01  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9051.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 10000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.34	49	J
02	000108-38-3	Benzene, 1,3-dimethyl-	2.54	63	JN
03	000694-87-1	Bicyclo[4.2.0]octa-1,3,5-tr.	2.72	50	JN
04	000095-13-6	Indene	3.98	290	JN
05	000575-43-9	Naphthalene, 1,6-dimethyl-	6.66	65	JN
06	000581-40-8	Naphthalene, 2,3-dimethyl-	6.75	110	JN
07	000581-42-0	Naphthalene, 2,6-dimethyl-	6.78	45	JN
08	000143-07-7	Dodecanoic acid	7.57	170	JN
09		UNKNOWN	7.69	210	J
10	001430-97-3	9H-Fluorene, 2-methyl-	8.46	43	JN
11	000059-31-4	2(1H)-Quinolinone	8.53	330	JN
12	000544-63-8	Tetradecanoic Acid	8.71	47	JN
13	002834-92-6	2-Naphthalenol, 1-amino-	8.74	47	JN
14	000132-65-0	Dibenzothiophene	8.79	51	JN
15	000260-94-6	Acridine	9.05	56	JN
16		UNKNOWN	9.15	86	J
17		UNKNOWN	9.30	61	J
18	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl-</del> (01) <i>u/k</i>	9.53	89	JN
19	000832-64-4	Phenanthrene, 4-methyl-	9.56	80	JN
20	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl-</del> (02) <i>u/k</i>	9.62	49	JN
21		UNKNOWN	9.66	130	J
22	000949-41-7	1H-Cyclopropa[1]phenanthren.	9.69	53	JN
23	002789-88-0	di-p-Tolylacetylene	10.20	56	JN
24		UNKNOWN	10.23	45	J
25		UNKNOWN	10.49	83	J
26		UNKNOWN	10.84	80	J
27	000238-84-6	11H-Benzo[a]fluorene	11.06	99	JN
28	000120-40-1	Dodecanamide, N,N-bis(2-hyd.	11.87	51	JN
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*D/ 12/2008*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y0DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-01RE1  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9069.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 10000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg)          ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	3.97	350	JDN
02	000090-12-0	Naphthalene, 1-methyl-	6.01	370	JDN
03	000143-07-7	Dodecanoic acid	7.53	210	JDN
04		UNKNOWN	7.64	320	JD
05	000059-31-4	2(1H)-Quinolinone	8.43	700	JDN
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
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26					
27					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*1/28/08*

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036 *inside*  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-02  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9042.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	21	J
02		UNKNOWN	1.23	16	J
03		UNKNOWN	1.34	9.6	J
04		UNKNOWN	2.02	2.0	J
05		UNKNOWN	2.16	3.7	J
06	000096-76-4	Phenol, 2,4-bis(1,1-dimethy.	7.22	14	JN
07	082304-66-3	7,9-Di-tert-butyl-1-oxaspir.	9.46	2.3	JN
08					
09					
10					
11					
12					
13					
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29					
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	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ 11/24/08*



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-03  
Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9056.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
% Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
CONCENTRATION UNITS: (ug/L or ug/kg)          ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000271-89-6	Benzofuran	3.59	20	JN
02	000496-11-7	Indane	3.90	21	JN
03	000095-13-6	Indene	3.98	140	JN
04	000571-58-4	Naphthalene, 1,4-dimethyl-	6.75	6.4	JN
05	000244-99-5	5H-Indeno[1,2-b]pyridine (01	8.13	4.6	JN
06		UNKNOWN	8.33	9.5	J
07		UNKNOWN	8.46	4.9	J
08	000491-30-5	1(2H)-Isoquinolinone	8.53	7.4	JN
09	000059-31-4	2(1H)-Quinolinone	8.63	35	JN
10	000132-65-0	Dibenzothiophene	8.79	21	JN
11		UNKNOWN	9.32	5.0	J
12	000086-77-1	2-Dibenzofuranol	9.35	4.6	JN
13	000607-66-9	2(1H)-Quinolinone, 4-methyl-	9.43	22	JN
14		UNKNOWN	9.59	7.1	J
15	000203-64-5	4H-Cyclopenta[def]phenanthre	9.64	7.1	JN
16		UNKNOWN	9.70	6.5	J
17		UNKNOWN	9.90	4.8	J
18		UNKNOWN	9.96	5.4	J
19	000081-84-5	1,8-Naphthalic anhydride	10.24	6.5	JN
20	000206-56-4	Indeno(1,2,3-ij)isoquinoline	10.83	6.9	JN
21	000203-65-6	5H-Benzo[def]carbazole	10.97	9.8	JN
22	000243-17-4	11H-Benzo[b]fluorene	11.05	7.2	JN
23	004269-15-2	4-Amino-9-fluorenone	11.09	39	JN
24	007132-70-9	3-Acridinol	11.62	21	JN
25	000243-28-7	Benzo(b)carbazole	12.36	7.1	JN
26		UNKNOWN	12.55	12	J
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*12/18/08*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

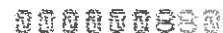
C05Y2DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-03RE1  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9072.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 100.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	3.97	510	JDN
02		UNKNOWN	7.64	360	JD
03	000059-31-4	2(1H)-Quinolinone	8.42	650	JDN
04					
05					
06					
07					
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30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*11/25/08*



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-04  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D9055.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg)          ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.53	21	J
02	000110-01-0	Thiophene, tetrahydro-	2.07	26	JN
03		UNKNOWN	2.17	21	JFB
04	000108-38-3	Benzene, 1,3-dimethyl-	2.54	68	JN
05	000271-89-6	Benzofuran	3.59	40	JN
06		UNKNOWN	3.66	20	J
07	000095-13-6	Indene	3.99	250	JN
08	005973-71-7	Benzaldehyde, 3,4-dimethyl-	6.22	120	JN
09	000575-41-7	Naphthalene, 1,3-dimethyl-	6.67	44	JN
10	000571-58-4	Naphthalene, 1,4-dimethyl-	6.76	91	JN
11	000093-37-8	Quinoline, 2,7-dimethyl-	6.79	85	JN
12		UNKNOWN	7.25	190	J
13		UNKNOWN	7.30	26	J
14		UNKNOWN	7.51	36	J
15	028556-81-2	2,6-Dimethylphenyl isocyanat	7.90	210	JN
16		UNKNOWN	8.42	51	J
17	000491-30-5	1(2H)-Isoquinolinone	8.72	36	JN
18		UNKNOWN	9.46	27	J
19		UNKNOWN	9.54	47	J
20	000607-66-9	2(1H)-Quinolinone, 4-methyl-	9.66	42	JN
21		UNKNOWN	9.70	33	J
22		UNKNOWN	10.73	27	J
23		UNKNOWN	11.01	20	J
24	<del>007132-70-9</del>	<del>3-Acridinol (01)</del> <i>YKJ</i>	11.18	85	JN
25	<del>007132-70-9</del>	<del>3-Acridinol (02)</del> <i>YKJ</i>	11.66	34	JN
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ 11/27/08*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y3DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-04RE1  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9071.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 100.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.40	310	JD
02		UNKNOWN	1.94	230	JD
03		UNKNOWN	2.72	220	JD
04	000095-13-6	Indene	3.97	1100	JDN
05		UNKNOWN	6.18	220	JD
06		UNKNOWN	7.65	1900	JD
07		UNKNOWN	8.28	330	JD
08	000059-31-4	2(1H)-Quinolinone	8.48	3500	JDN
09	002721-59-7	2(1H)-Quinolinone, 3-methyl-	8.68	300	JDN
10		UNKNOWN	9.07	350	JD
11		UNKNOWN	9.10	220	JD
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*11/25/08*

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-05  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9041.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/24/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	1.17	25	J 10
02		UNKNOWN	1.34	5.4	J 20
03		UNKNOWN	2.16	5.6	J 40
04	000611-15-4	Benzene, 1-ethenyl-2-methyl-	3.90	110	JN
05	000095-13-6	Indene	3.98	19	JN
06	1146-65-2	Napthalene, 1-methyl-	6.01	2.1	JN
07	001470-94-6	1H-Inden-5-ol, 2,3-dihydro-	6.18	8.7	JN
08	000939-27-5	Naphthalene, 2-ethyl-	6.57	2.3	JN
09	000575-41-7	Naphthalene, 1,3-dimethyl-	6.74	3.0	JN
10	000090-15-3	1-Naphthalenol	7.32	4.8	JN
11		UNKNOWN	7.64	2.2	J
12		UNKNOWN	8.02	4.8	J
13		UNKNOWN	8.27	8.4	J
14		UNKNOWN	8.40	2.8	J
15	000491-30-5	1(2H)-Isoquinolinone	8.45	7.9	JN
16	002721-59-7	2(1H)-Quinolinone, 3-methyl-	8.68	7.3	JN
17		UNKNOWN	9.04	4.0	J
18	000607-67-0	4-Quinolinol, 2-methyl-	9.10	2.8	JN
19		UNKNOWN	9.79	2.2	J
20	000081-84-5	1,8-Naphthalic anhydride	10.20	2.5	JN
21	000080-05-7	Phenol, 4,4'-(1-methylethyl.	10.77	3.1	JN
22	001015-89-0	6(5H)-Phenanthridinone	11.03	4.7	JN
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

DJ  
12/18/08

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y4DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-05RE1  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9060.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000496-11-7	Indane	3.90	120	JDN
02	000095-13-6	Indene	3.98	22	JDN
03	000576-26-1	Phenol, 2,6-dimethyl-	4.47	28	JDN
04	000090-12-0	Naphthalene, 1-methyl-	6.02	37	JDN
05					
06					
07					
08					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

JN  
11/25/08

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.: \_\_\_\_\_ SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-06  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9054.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000496-11-7	Indane	3.90	170	JN
02	000095-13-6	Indene	3.98	55	JN
03		UNKNOWN	6.19	12	J
04	001127-76-0	Naphthalene, 1-ethyl-	6.58	16	JN
<del>05</del>	<del>000582-16-1</del>	<del>Naphthalene, 2,7-dimethyl-</del> (uL)	6.66	32	JN
<del>06</del>	<del>000582-16-1</del>	<del>Naphthalene, 2,7-dimethyl-</del> (uL)	6.75	46	JN
07	000575-43-9	Naphthalene, 1,6-dimethyl-	6.78	18	JN
08	000086-53-3	1-Naphthalenecarbonitrile	7.24	19	JN
09	000090-15-3	1-Naphthalenol	7.34	11	JN
10		UNKNOWN	8.05	13	J
11		UNKNOWN	8.11	22	J
12	002235-15-6	1(2H)-Acenaphthylene	8.25	10	JN
13		UNKNOWN	8.31	9.8	J
14	000491-30-5	1(2H)-Isoquinolinone	8.52	25	JN
15	000132-65-0	Dibenzothiophene	8.79	12	JN
16		UNKNOWN	9.05	17	J
17		UNKNOWN	9.12	12	J
18		UNKNOWN	9.33	16	J
19	000086-77-1	2-Dibenzofuranol	9.40	23	JN
20		UNKNOWN	9.50	8.9	J
21		UNKNOWN	9.56	21	J
22	004630-20-0	3-Methylcarbazole	9.59	12	JN
23	000203-64-5	4H-Cyclopenta[def]phenanthre	9.64	18	JN
24	002443-58-5	2-Hydroxyfluorene (02)	9.68	15	JN
25		UNKNOWN	9.81	15	J
26	000612-94-2	Naphthalene, 2-phenyl-	9.90	19	JN
27		UNKNOWN	10.23	8.4	J
28	000081-84-5	1,8-Naphthalic anhydride	10.27	30	JN
29		UNKNOWN	10.51	8.4	J
30	004269-15-2	4-Amino-9-fluorenone	11.08	21	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DJ*  
*11/18/08*

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C05Y5DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38062 Mod. Ref No.:          SDG No.: C05T6  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0009762-06RE1  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D9070.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 11/22/2008  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/23/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 11/25/2008  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 50.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000496-11-7	Indane	3.89	170	JDN
02	1146-65-2	Napthalene, 1-methyl-	6.01	100	JDN
03					
04					
05					
06					
07					
08					
09					
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29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

*DV*  
*11/25/08*





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
Environmental Sciences Center  
701 Mapes Road  
Fort Meade, Maryland 20755-5350**

DATE : May 29, 2009  
SUBJECT: Region III Data QA Review  
FROM : Colleen Walling *Clapelle*  
Region III ESAT RPO (3EA20)  
TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the inorganic data validation report for the Tank Car Corporation of America Site (Case #38495; SDG#: MC0651) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Joshua Cope (TTEMI)

TO File #: 0021 TDF#: 05051

**ANALYTICAL SERVICES AND QUALITY ASSURANCE BRANCH**

Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Telephone 410-305-3037 Facsimile 410-305-3597

**DATE:** May 28, 2009

**SUBJECT:** Inorganic Data Validation (IM2 Level)  
Case: 38495  
SDG: MC0651  
Site: Tank Car Corporation of America

**FROM:** Donald M. Brown <sup>DMB</sup>  
Inorganic Data Reviewer

*SM* Mahboobeh Mecanic *SM*  
Senior Oversight Chemist

**TO:** Colleen Walling  
ESAT Region 3 Project Officer

### OVERVIEW

Case 38495, Sample Delivery Group (SDG) MC0651, consisted of eight (8) soil samples analyzed for total metals and cyanide (CN<sup>-</sup>) and five (5) aqueous samples analyzed for total metals by Chemtech Consulting Group (CHEM). The sample set included one (1) field blank and one (1) rinsate blank as well as one (1) field duplicate pair for each matrix. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

### SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the laboratory, field and rinsate blanks as well as the matrix spike, laboratory duplicate and ICP serial dilution analyses. Details of these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Forms (DSFs).

## MINOR PROBLEMS

Continuing calibration (CCB), preparation (PB), field (FB) and/or rinsate (RB) blanks had reported results greater than the Method Detection Limits (MDLs) for the analytes listed below. Positive results for these analytes in affected samples which are less than or equal to five times ( $\leq 5X$ ) the blank concentrations may be biased high and have been qualified "B" on the DSFs.

<u>Blank</u>	<u>Matrix</u>	<u>Affected Analytes</u>
CCB	aqueous	thallium (Tl)
PB	aqueous	aluminum (Al), iron (Fe), zinc (Zn)
	soil	CN <sup>-</sup>
FB	soil	potassium (K), Tl
RB	soil	sodium (Na)

The PB had a negative result greater than the absolute value of the MDL for arsenic (As) in the aqueous matrix. Quantitation limits for this analyte in affected aqueous samples may be biased low and have been qualified "UL" on the DSF.

Matrix spike recoveries were low ( $<75\%$  but  $>30\%$ ) for antimony (Sb), nickel (Ni) and selenium (Se) in the soil matrix. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for these analytes in affected soil samples may be biased low. The "L" qualifier for these outliers has been superseded by "J" on the DSFs. Quantitation limits for Se in affected soil samples may be biased low and have been qualified "UL" on the DSFs.

Relative percent differences (RPDs) in the laboratory duplicate analysis were outside control limits (20% RPD,  $\pm CRQL$ ) for copper (Cu) and lead (Pb) in the aqueous matrix. Positive results and quantitation limits for these analytes in all samples are estimated and have been qualified "J" and "UJ", respectively, on the DSF.

Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit ( $>10\%$ ) for Na in both matrices as well as for chromium (Cr), cobalt (Co), Fe, Pb and Ni in the soil matrix. Positive results for these analytes in affected samples are estimated due to possible matrix interferences and have been qualified "J" on the DSFs unless superseded by "B".

## NOTES

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSFs unless superseded by "B".

The RPD in the laboratory duplicate analysis was outside contractual control limits (20% RPD,  $\pm CRQL$ ) for Cr in the soil matrix. However, the RPD for this analyte was within Region 3 established control limits (35% RPD,  $\pm 2XCRQL$ ) for soil analysis. No data were qualified for this analyte based on laboratory duplicate imprecision.

The solid laboratory control sample (LCS) result was below the MDL for K and was reported as a non-detect by the laboratory. However, the lower control limit for this analyte is zero. Therefore, no data were qualified based on this finding.

Reported results for field duplicate pair MC0653/MC0654 were within 35% RPD,  $\pm 2XCRQL$  for all analytes.

Reported results for field duplicate pair MC0661/MC0662 were within 20% RPD,  $\pm CRQL$  for all analytes except Cu, Fe and Pb.

Samples MC0653, MC0654 and MC0656 were reanalyzed at a ten-fold (10X) dilution in order to bring the concentration of Zn within the linear range of the instrument. Results for this analyte in these samples were reported from the diluted analyses and annotated with a "+" on the DSF.

The post-digestion spike recovery was low (<75% but >30%) for Se in the soil matrix. No data were qualified based on this finding.

Data for Case 38495, SDG MC0651, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modification for use within Region III.

## **ATTACHMENTS**

### **INFORMATION REGARDING REPORT CONTENT**

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY RECORDS
APPENDIX D	LABORATORY CASE NARRATIVE

DCN: 38495.MC0651IM2.doc

**TABLE 1A**  
**SUMMARY OF QUALIFIERS ON DATA SUMMARY**  
**FORM AFTER DATA VALIDATION**

Case 38495, SDG MC0651

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON-DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Al	MC0651, MC0652, MC0661	B		High	PB (16.784 J µg/L)
Sb	All Soil Samples	J			>MDL<CRQL MSL (60%)
As	MC0651, MC0652, MC0661, MC0662		UL	Low	PBN (-2.217 J µg/L)
Cr	All Soil Samples	J			ISD (16%)
Co	All Soil Samples	J			ISD (22%)
Cu	All Aqueous Samples	J	UJ		DUP (40%)
Fe	MC0651, MC0652, MC0661	B		High	PB (90.559 J µg/L)
	All Soil Samples	J			ISD (13%)
Pb	All Soil Samples	J			ISD (29%)
	All Aqueous Samples	J	UJ		DUP (26%)
Ni	All Soil Samples	J			ISD (25%) MSL (52%)
K	MC0660	B		High	FB (263 J µg/L)
Se	MC0659	J			>MDL<CRQL MSL (68%)

\* See explanation of comments in Table 1B

**TABLE 1A  
SUMMARY OF QUALIFIERS ON DATA SUMMARY  
FORM AFTER DATA VALIDATION**

Case 38495, SDG MC0651

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON-DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Se	All Soil Samples Except MC0659		UL	Low	MSL (68%)
Na	MC0655, MC0658, MC0660	B		High	RB (564 J $\mu\text{g/L}$ ) ISD (18%)
	MC0653, MC0654, MC0656, MC0657, MC0659	J			ISD (18%)
	All Aqueous Samples	J			ISD (19%)
Tl	MC0656, MC0659	B		High	FB (5.5 J $\mu\text{g/L}$ )
	MC0651, MC0652, MC0661, MC0662, MC0663	B		High	CCB (7.346 J $\mu\text{g/L}$ )
Zn	MC0651, MC0652	B		High	PB (42.997 J $\mu\text{g/L}$ )
CN <sup>-</sup>	MC0658	B		High	PB (0.053 J mg/Kg)

\* See explanation of comments in Table 1B

**TABLE 1B**  
**CODES USED IN COMMENTS COLUMN**

PB	=	Preparation blanks had results >MDLs [results are in parenthesis]. Positive results which are $\leq 5X$ the blank concentrations may be biased high.
>MDL <CRQL	=	Reported results are greater than MDLs but less than CRQLs and are considered estimated.
MSL	=	Matrix spike recoveries were low (<75% but >30%) [% recoveries are in parenthesis]. Positive results and quantitation limits may be biased low.
PBN	=	Preparation blank had a negative result with an absolute value >MDL [result is in parenthesis]. Quantitation limits may be biased low.
ISD	=	Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit (>10%) [%Ds are in parenthesis]. Positive results are estimated.
DUP	=	Relative percent differences (RPDs) in the laboratory duplicate analysis were outside control limits (20% RPD, $\pm$ CRQL) [RPDs are in parenthesis]. Positive results and quantitation limits are estimated.
FB	=	Field blank had results >MDLs [results are in parenthesis]. Positive results which are $\leq 5X$ the blank concentrations may be biased high.
RB	=	Rinsate blank had a result >MDL [result is in parenthesis]. Positive results which are $\leq 5X$ the blank concentration may be biased high.
CCB	=	Continuing calibration blank had a result >MDL [result is in parenthesis]. Positive results which are $\leq 5X$ the blank concentration may be biased high.

## **Appendix A**

### **Glossary of Data Qualifier Codes**

---



## **GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present.  
Special methods may be needed to confirm its presence or absence in future sampling efforts.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low.  
Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### **OTHER CODES**

Q = No analytical result.

## **Appendix B**

### **Data Summary Forms**

---

DATA SUMMARY FORM: INORGANIC

Case #: 38495

SDG : MC0651

Number of Soil Samples : 8

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 5

Lab. :

CHEM

Sample Number :	MC0653	MC0654	MC0655	MC0656	MC0657						
Sampling Location : (Prefix : TCCA-)	SB-16-0304	SB-16-0405	SB-18-0405	SB-22-0203	SB-26-0507						
Field QC :	Dup of MC0654	Dup of MC0653									
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg						
Date Sampled :	4/27/2009	4/27/2009	4/27/2009	4/27/2009	4/27/2009						
Time Sampled :	09:52	09:58	10:52	13:20	14:34						
%Solids :	96.5	96.5	73.7	96.8	84.1						
Dilution Factor :	1.0 / 10	1.0 / 10	1.0	1.0 / 10	1.0						
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	38400		38000		22200		28500		5920	
ANTIMONY	6	2.3	J	2.4	J	1.3	J	2.2	J	2.1	J
ARSENIC	1	42.5		57.3		51.1		4.8		1.8	
BARIUM	20	651		726		198		689		163	
BERYLLIUM	0.5	47.7		50.3		2.9		162		15.2	
CADMIUM	0.5	0.18	J	0.21	J			0.88		0.51	J
CALCIUM	500	27400		29000		1550		42200		5620	
CHROMIUM	1	106	J	97.0	J	29.2	J	17.1	J	33.3	J
COBALT	5	51.4	J	57.9	J	15.0	J	113	J	18.1	J
COPPER	2.5	2660		3040		41.9		5160		754	
IRON	10	114000	J	115000	J	27000	J	129000	J	26100	J
LEAD	1	771	J	764	J	54.2	J	1260	J	636	J
MAGNESIUM	500	5890		6130		4010		5430		1140	
MANGANESE	1.5	1750		1810		276		2660		378	
MERCURY	0.1					0.079	J	0.046	J		
NICKEL	4	201	J	202	J	21.4	J	391	J	95.2	J
POTASSIUM	500	4390		4350		821		1900		526	J
SELENIUM	3.5		UL		UL		UL		UL		UL
SILVER	1	1.1		1.3				2.0		0.25	J
SODIUM	500	3730	J	3770	J	140	B	6630	J	667	J
THALLIUM	2.5							0.54	B		
VANADIUM	5	47.8		47.8		36.5		37.3		8.4	
ZINC	6	22800+		23800+		185		40500+		4780	
CYANIDE	2.5					1.4	J				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

Revised 09/99

Prefix : All sample locations are prefixed TCCA-

+ = Result reported from diluted analysis.

DATA SUMMARY FORM: INORGANIC

Case #: 38495

SDG : MC0651

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

CHEM

Sample Number :		MC0658	MC0659	MC0660							
Sampling Location : (Prefix : TCCA-)		SB-27-0506	SB-31-0102	SB-33-0406							
Matrix :		Soil	Soil	Soil							
Units :		mg/Kg	mg/Kg	mg/Kg							
Date Sampled :		4/27/2009	4/28/2009	4/28/2009							
Time Sampled :		16:11	09:21	09:40							
%Solids :		80.0	85.5	89.0							
Dilution Factor :		1.0	1.0	1.0							
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	22800		4780		1390					
ANTIMONY	6	1.0	J	3.6	J	1.8	J				
ARSENIC	1	5.9		31.8		3.0					
BARIUM	20	57.8		117		78.7					
BERYLLIUM	0.5	0.91		8.4		2.1					
CADMIUM	0.5			0.61		0.40	J				
CALCIUM	500	906		69100		2710					
CHROMIUM	1	35.6	J	31.3	J	10.7	J				
COBALT	5	10.0	J	10.4	J	5.4	J				
COPPER	2.5	14.2		379		127					
IRON	10	26200	J	23600	J	9840	J				
LEAD	1	13.4	J	324	J	453	J				
MAGNESIUM	500	3290		42000		393	J				
MANGANESE	1.5	307		291		121					
MERCURY	0.1			0.38		0.070	J				
NICKEL	4	15.9	J	40.6	J	20.4	J				
POTASSIUM	500	1290		656		131	B				
SELENIUM	3.5		UL	1.3	J		UL				
SILVER	1			0.22	J						
SODIUM	500	165	B	505	J	194	B				
THALLIUM	2.5			0.40	B						
VANADIUM	5	50.5		17.7		3.6	J				
ZINC	6	75.0		2150		1240					
CYANIDE	2.5	0.071	B	0.36	J						

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

Revised 09/99

Prefix : All sample locations are prefixed TCCA-

DATA SUMMARY FORM: INORGANIC

Case #: 38495

SDG : MC0651

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

CHEM

Sample Number :	MC0651	MC0652	MC0661	MC0662	MC0663						
Sampling Location : (Prefix : TCCA-)	FB-042809-1	RB-042809-1	TW-13	TW-26	TW-33						
Field QC :	Field Blank	Rinsate Blank	Dup of MC0662	Dup of MC0661							
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	4/28/2009	4/28/2009	4/27/2009	4/27/2009	4/28/2009						
Time Sampled :	12:06	14:18	16:28	16:25	12:37						
Dilution Factor :	1.0	1.0	1.0	1.0	1.0						
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	15.5	B	18.9	B	64.1	B	122	J	232	
ANTIMONY	60					13.5	J	13.1	J		
*ARSENIC	10		UL		UL		UL		UL	5.3	J
BARIUM	200					117	J	124	J	174	J
BERYLLIUM	5										
CADMIUM	5					1.9	J	2.0	J	1.3	J
CALCIUM	5000	693	J	881	J	29600		30400		45600	
*CHROMIUM	10					48.2		50.2		4.7	J
COBALT	50									9.4	J
COPPER	25		UJ		UJ	99.8	J	139	J	67.7	J
IRON	100	29.2	B	39.8	B	214	B	593		5970	
*LEAD	10		UJ		UJ	47.6	J	76.4	J	571	J
MAGNESIUM	5000	52.4	J	65.8	J	3960	J	4080	J	6350	
MANGANESE	15					117		129		497	
MERCURY	0.2										
*NICKEL	40					50.1		54.2		251	
POTASSIUM	5000	263	J	201	J	3610	J	3610	J	6590	
SELENIUM	35										
SILVER	10										
SODIUM	5000	293	J	564	J	17300	J	17800	J	47200	J
THALLIUM	25	5.5	B	5.2	B	4.6	B	6.1	B	7.1	B
VANADIUM	50										
ZINC	60	10.9	B	13.3	B	468		542		1000	

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

Prefix : All sample locations are prefixed TCCA-

## **Appendix C**

### **Chain-of-Custody Records**

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**USEPA Contract Laboratory Program  
Inorganic Traffic Report & Chain of Custody Record**

Case No: 38495

DAS No:

**R**

Region: 3	Date Shipped: 4/29/2009	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
Project Code: CT4550	Carrier Name: FedEx	TAG No/ PRESERVATIVE/ Bottles			
Account Code: PAN000306553	Airbill: 854559928450				
CERCLIS ID: AGX	Shipped to: ChemTech Consulting Group (CHEM) 284 Sheffield St. Mountainside NJ 07092 (908) 789-8900				
Site Name/State: TCCA April 09 Metals/PA					
Project Leader: Jordan Vaughn					
Action: Tetra Tech					
Sampling Co:					

Chain of Custody Record		
Relinquished By	(Date / Time)	Sampler Signature
1		
2		
3		
4		

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYS/ TURNAROUND	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0651	Ground Water/ Jordan Vaughn	L/G	ICPMS-T (14)	TCCA1865 (HNO3) (1)	TCCA-FB-042809-1	S: 4/28/2009 12:06		Field blank
MC0652	Ground Water/ Jordan Vaughn	L/G	ICPMS-T (14)	TCCA1866 (HNO3) (1)	TCCA-RB-042809-1	S: 4/28/2009 14:18		Rinsate blank
MC0653	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1867 (1)	TCCA-SB-16-0304	S: 4/27/2009 9:52		
MC0654	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1868 (1)	TCCA-SB-16-0405	S: 4/27/2009 9:58		Duplicate of TCCA-SB-16-0304
MC0655	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1869 (1)	TCCA-SB-18-0405	S: 4/27/2009 10:52		
MC0656	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1870 (1)	TCCA-SB-22-0203	S: 4/27/2009 13:20		-MSMSD
MC0657	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1871 (1)	TCCA-SB-26-0507	S: 4/27/2009 14:34		
MC0658	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1872 (1)	TCCA-SB-27-0506	S: 4/27/2009 16:11		-Field Duplicate Not a duplicate per Jordan Vaughn D.V. 5/27/09
MC0659	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1873 (1)	TCCA-SB-31-0102	S: 4/28/2009 9:21		
MC0660	Soil (>12")/ Jordan Vaughn	M/G	Met+CN+Hg (14)	TCCA1874 (1)	TCCA-SB-33-0406	S: 4/28/2009 9:40		
MC0661	Ground Water/ Jordan Vaughn	M/G	ICPMS-T (14)	TCCA1875 (HNO3) (1)	TCCA-TW-13	S: 4/27/2009 16:28		Duplicate of TCCA-TW-26

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: ICPMS-T = ICP Metals & Hg - Total; Met+CN+Hg = ICP metals & CN + Hg soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Fee? _____

**TR Number: 3-023200937-042909-0002**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Atrn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax

703/818-4602

**REGION COPY**



# USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 38495

DAS No:

R

Region: 3	Date Shipped: 4/29/2009	Carrier Name: FedEx	Station Location: TCCA-TW-26
Project Code: CT4550	Airbill: 854559928450	Shipped to: ChemTech Consulting Group (CHEM) 284 Sheffield St. Mountainside NJ 07092 (908) 789-8900	Station Location: TCCA-TW-33
Account Code: PAN000306553	AGX		Station Location: TCCA1877 (HNO3), TCCA1878 (HNO3) (2)
CERCLIS ID: AGX	TCCA April 09 Metals/PA		
Spill ID: Jordan Vaughn			
Project Leader: Jordan Vaughn			
Action: Tetra Tech			
Sampling Co: Tetra Tech			

Chain of Custody Record		
Relinquished By	(Date / Time)	Sampler Signature
1		
2		
3		
4		

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0662	Ground Water/ Jordan Vaughn	M/G	ICPMS-T (14)	TCCA1876 (HNO3) (1)	TCCA-TW-26	S: 4/27/2009 16:25		
MC0663	Ground Water/ Jordan Vaughn	M/G	ICPMS-T (14)	TCCA1877 (HNO3), TCCA1878 (HNO3) (2)	TCCA-TW-33	S: 4/28/2009 12:37		MS/MSD

Shipment for Case Complete 7 N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: ICPMS-T = ICP Metals & Hg - Total, Met+CN+Hg = ICP metals & CN + Hg soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

**TR Number: 3-023200937-042909-0002**  
 PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
 Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

**REGION COPY**



# U.S. EPA Region III Analytical Request Form

Revision 10.06

38495

975 4-20-09



Date: 4/20/09		Site Activity: Removal Site Evaluations <i>Assessment</i>	
Site Name: Tank Car Corporation of America			
City: Orland		Street Address: 1725 Walnut Ave	
State: PA		Latitude:	
Program: Superfund		Longitude:	
Acct. #: 2009 T03 N 302DC6C A3GXRS00		CERCLIS #: <i>PA/00306553</i>	
Site ID: A3GX		Operable Unit:	
Site Specific QA Plan Submitted: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		Title: START3 QAPP	
EPA Project Leader: Michael Towle		Phone#: 215-814-3272	
Request Preparer: JOSHUA COPE		Cell Phone #: 215-768-8114	
Site Leader: Jordan Vaughn		Cell Phone #: 215-651-4022	
Contractor: Tetra Tech EM Inc			
EPA CO/PO: Jeff Fang/Karen Wodarczyk			
#Samples 10	Matrix: soil	Parameter: TCL VOC	<i>A4</i>
#Samples 35	Matrix: soil	Parameter: TCL SVOC	<i>30458</i>
#Samples 40	Matrix: soil	Parameter: TAL Metals & Hg	<i>30463</i>
#Samples 13	Matrix: soil	Parameter: Cyanide	<i>30464</i>
#Samples 9	Matrix: water	Parameter: TCL VOC	<i>30461</i>
#Samples 6	Matrix: water	Parameter: TCL SVOC	<i>30460</i>
#Samples 6	Matrix: water	Parameter: TAL Metals & Hg	<i>30462</i>
Ship Date From: 4/27/09		Ship Date To: 4/30/09	
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		If Yes, TAT Needed: <input checked="" type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) <i>PR's by EPA</i>	
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21 days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify)		<i>14/16</i>	
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached Required Limits and CRQL/CRDLs Needed. *Method substitution permitted.			

FORM ARF- 10/06

Revision 1.1

## **Appendix D**

### **Laboratory Case Narrative**

---

USEPA - CLP

COVER PAGE

Lab Name CHEMTECH CONSULTING GROUP Contract: EPW08065

Lab Code: CHEM Case No.: 38495 NRAS No.: \_\_\_\_\_ SDG No.: MC0651

SOW No.: ILM05.4

EPA Sample No.	Lab Sample ID
<u>MC0651</u>	<u>A2540-01</u>
<u>MC0652</u>	<u>A2540-02</u>
<u>MC0653</u>	<u>A2540-03</u>
<u>MC0654</u>	<u>A2540-04</u>
<u>MC0655</u>	<u>A2540-05</u>
<u>MC0656</u>	<u>A2540-06</u>
<u>MC0656D</u>	<u>A2540-07</u>
<u>MC0656S</u>	<u>A2540-08</u>
<u>MC0657</u>	<u>A2540-09</u>
<u>MC0658</u>	<u>A2540-10</u>
<u>MC0659</u>	<u>A2540-11</u>
<u>MC0660</u>	<u>A2540-12</u>
<u>MC0661</u>	<u>A2540-13</u>
<u>MC0662</u>	<u>A2540-14</u>
<u>MC0663</u>	<u>A2540-15</u>
<u>MC0663D</u>	<u>A2540-16</u>
<u>MC0663S</u>	<u>A2540-17</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

	ICP-AES	ICP-MS
Were ICP-AES and ICP-MS interelement corrections applied?	(Yes/No) <u>YES</u>	_____
Were ICP-AES and ICP-MS background corrections applied?	(Yes/No) <u>YES</u>	_____
If yes, were raw data generated before application of background corrections?	(Yes/No) <u>NO</u>	_____

Comments:

THE "E" QUALIFIERS ON FORM I AND VIII FOR CHROMIUM, COBALT, IRON, LEAD, NICKEL AND SODIUM INDICATE CHEMICAL OR PHYSICAL INTERFERENCE EFFECTS, WHICH WERE SUSPECTED DURING THOSE ELEMENTS' ANALYSES

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mildred Reyes  
Date: 5/14/09

Name: MILDRED V. REYES  
Title: DOCUMENT CONTROL OFFICER

**CHEMTECH**  
284 Sheffield Street  
Mountainside, NJ 07092

## SDG NARRATIVE

USEPA  
SDG # MC0651  
CASE # 38495  
CONTRACT # EPW08065  
LAB NAME: CHEMTECH CONSULTING GROUP  
LAB CODE: CHEM  
CHEMTECH PROJECT # A2540

### A. Number of Samples and Date of Receipt

8 Soil & 5 Water Samples were delivered to the laboratory intact on 05/01/2009.

### B. Parameters

Test requested for Metals CLP Full, Hg & CN.

### C. Cooler Temp

Indicator Bottle: Presence/Absence  
Cooler: 3°C

### D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):

Issue 1: The water samples are listed on the TR/COC as ICP-MS-T= ICP-Metals t3t Hg; however, per scheduling the analysis for the water samples should be ICP-AES TM and Hg.

Issue 2: The airbill number is listed as 8574-9985-9115 on the TR/COC for six of the samples; however, these samples were actually received under airbill 8574-9984-9743.

Issue 3: There are not enough samples designated for laboratory QC on the TR/COC. The laboratory would like to select the following samples for laboratory QC for the additional SDGs:

Lab QC sample MC06B8 - SDG MC0698  
Lab QC sample MC06D8 - SDG MC06B9

**CHEMTECH**  
**284 Sheffield Street**  
**Mountainside, NJ 07092**

**E. Corrective Action taken for above:**

Resolution 1: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG

Resolution 2: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the samples.

Resolution 3: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QG, and proceed with the analysis of the samples.

**F. Analytical Techniques:**

All analyses were based on CLP Methodology by method ILM05.4

**G. Calculation:**

***Calculation example for ICP-AES Soil Sample:***

Conversion of Results from mg/L or ppm to mg/kg (Dry Weight Basis):

Results reported in Mg/Kg = (Result in mg/L or ppm for ICP-AES) X 1000 X Fraction of % Solid (100/ % Solid) X Dilution Factor (if any) X Fraction of Sample Amount Taken in ICP-Soil Prep.

Example of Fraction of Sample Amount Taken in ICP-AES Soil Prep. = 1/10 (1.0 X10 or 0.50 X 20)

(if 1.0 g of sample taken during Digestion and the Final Volume was made to 100 ml or 0.5 g to Final Volume 50ml)

Or

Example of Fraction of Sample Amount Taken in ICP-AES Soil Prep = 1/10.2 (1.02 X 10 or 0.51 X 20)

(if 1.02 g of sample taken during Digestion and the Final Volume was made to 100 ml or 0.51 g to Final Volume 50ml)

Etc.

***Calculation example for ICP-AES Water Sample:***

Results reported in Ug/L = Results in ppm X 1000 X Dilution Factor (if any) X Fraction of Sample Amount Taken in ICP Water- Prep

## **CHEMTECH**

**284 Sheffield Street  
Mountainside, NJ 07092**

Fraction of Sample Amount Taken in ICP Water- Prep = 100/100 or 50/50 =1  
(if 100 ml Initial Volume taken and Final Volume was made to 100 ml or 50 ml Initial Volume and Final Volume made to 50 ml in ICP-AES Water Digestion procedure)

### ***Calculation example for Hg Soil Sample:***

Conversion of Results from ppb to mg/kg (Dry Weight Basis):

Results reported in Mg/Kg = (Result in ppb for Hg) X Fraction of % Solid (100/ % Solid) X Dilution Factor (if any) X Fraction of Sample Amount Taken in Prep.

Example of Fraction of Sample Amount Taken in Hg Soil Prep = 1/ 2 (0.2 X 10)  
(if 0.2 g of sample taken during Digestion and the Final Volume was made to 100 ml)

Or

Example of Fraction of Sample Amount Taken in Hg Soil Prep = 1 / 2.1 (0.21 X 10)  
(if 0.21 g of sample taken during Digestion and the Final Volume was made to 100 ml)

Etc.

### ***Calculation example for Hg Water Sample:***

Results reported in Ug/L = Results in ppb X Dilution Factor (if any) X Fraction of Sample Amount Taken in Water Hg-Prep.

Fraction of Sample Amount Taken in Water Hg-Prep = 100/100 =1  
(if 100 ml Initial Volume taken and made it to Final Volume as 100 ml)

### ***Calculation example for CN Soil Sample:***

Conversion of Results from Ug/L to mg/kg (Dry Weight Basis):

Results reported in Mg/Kg = (Result in Ug/L for CN) X Fraction of % Solid (100/ % Solid) X Dilution Factor (if any) X Fraction of Sample Amount Taken in Prep.

Example of Fraction of Sample Amount Taken in CN Soil Prep = 1/20 (1 X 20)  
(if 1.0 g of sample taken during Digestion and the Final Volume was made to 50 ml)

Or

Example of Fraction of Sample Amount Taken in Hg Soil Prep = 1 / 20.2 (1.01 X 20)

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**284 Sheffield Street**

**Mountainside, NJ 07092**

(if 1.01 g of sample taken during Digestion and the Final Volume was made to 50 ml)

Etc.

***Calculation example for CN Water Sample:***

Results reported in Ug/L = Results in Ug/L X Dilution Factor (if any) X Fraction of Sample Amount Taken in Water CN-Prep.

Fraction of Sample Amount Taken in Water CN-Prep =  $50/50 = 1$   
( if 50 ml Initial Volume taken and made it to Final Volume as 50 ml)

**H. QA/ QC**

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. Spike sample did meet requirements except for the Antimony, Nickel and Selenium. Duplicate sample did meet requirements except for the Copper, Chromium and Lead. Serial Dilution did meet requirements except for Sodium, Chromium, Cobalt, Iron, Lead and Nickel.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature Mildred V. Reyes

Name: Mildred V. Reyes

Date 5/14/09

Title: Document Control Officer

CHEMTECH

QC: LB4148 A2540

PERCENT SOLIDS

ANALYST: *Roby*  
DATE: 05/05/09

Lab ID	Client ID	Dish #	Dish Weight (g)	Dish Wt. Sample (g)	Dish Wt. Dry Sample (g)	% Solids
A2540-03	MC0653	1	1.18	9.08	8.8	96.5
A2540-04	MC0654	2	1.17	9.13	8.85	96.5
A2540-05	MC0655	3	1.19	9.11	7.02	73.7
A2540-06	MC0656	4	1.18	9.06	8.8	96.8
A2540-07	MC0656D	5	1.16	9.08	8.81	96.6
A2540-08	MC0656S	6	NR	NR	NR	NR
A2540-09	MC0657	7	1.17	9.08	7.82	84.1
A2540-10	MC0658	8	1.16	9.03	7.45	80.0
A2540-11	MC0659	9	1.17	9.15	7.99	85.5
A2540-12	MC0660	10	1.19	9.07	8.2	89.0
BLANK	DISH	B1	1.18	1.18	1.18	0.0

OVEN TEMP: 106°C  
 TIME IN: 05/05/09 19:32  
 TIME OUT: 05/05/09 11:00 AM





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
Environmental Sciences Center  
701 Mapes Road  
Fort Meade, Maryland 20755-5350

DATE : May 27, 2009

SUBJECT: Region III Data QA Review

FROM : Colleen Walling *Colleen Walling*  
Region III ESAT RPO (3EA20)

TO : Michael Towle  
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Tank Car Corporation of America Site (Case #38495; SDG#: C0629, C0635) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Joshua Cope (TTEMI)

TO File #: 0021 TDF#: 05041

**ANALYTICAL SERVICES AND QUALITY ASSURANCE BRANCH**

Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-530  
Telephone 410-305-3037 Facsimile 410-305-3597

**DATE:** May 21, 2009

**SUBJECT:** Organic Data Validation (M2 Level)  
Case: 38495  
SDG: C0629 and C0635  
Site: Tank Car Corporation of America

**FROM:** Habteab Ghebreyesus *HG*  
Organic Data Reviewer

Mahboobeh Mecanic *MM*  
Senior Oversight Chemist

**TO:** Colleen Walling  
ESAT Region 3 Project Officer

## OVERVIEW

Case 38495, Sample Delivery Group (SDGs) C0629 and C0635, consisted of nine (9) soil samples, three (3) aqueous samples, one (1) field blank and one (1) rinsate blank analyzed for volatile and semivolatile compounds and two (2) trip blanks analyzed for volatile compounds only. The sample set included two (2) field duplicate pairs. All samples were submitted to A4 Scientific, Inc. (A4) for analyses. Samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through Routine Analytical Services (RAS) program.

## SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of raw data and sample spectra. Areas that may impact data usability are listed below.

In SOM01.2, 1,4-dioxane is no longer a target analyte by Trace volatile and Trace volatile SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

**MAJOR PROBLEM**

- Relative Response Factors (RRFs) in the volatiles initial and/or continuing calibrations were less than 0.05 for acetone and 2-butanone. The “L” qualifier for positive results for acetone in affected samples has been superseded by “B” or “J” on the Data Summary Forms (DSFs). Quantitation limits for these compounds in affected samples were rejected and qualified “R” on the (DSFs).

**MINOR PROBLEMS**

- Volatile samples C0630, C0632 and C0634 had recoveries of Deuterated Monitoring Compound (DMC) vinyl chloride-d3 below the lower QC limits. The quantitation limit for vinyl chloride associated with this DMC in these samples was qualified “UL” on DSFs.
- Recovery of DMC 1,2-dichloropropane-d6 was outside the upper control limits in volatile sample C0631. Positive results associated with this DMC in this sample were qualified “K” on the DSF.
- Semivolatile sample C0632 had recovery of DMC 4-methylphenol-d8 below the lower QC limits. Quantitation limits for compounds associated with this DMC in this sample were qualified “UL” on DSFs.
- Semivolatile sample C0634 reported 2,4-dinitrotoluene outside the established calibration range in the initial analysis. The compound was not detected in the diluted analysis of this sample. The positive result for this compound was reported from the initial analysis and qualified “J” on the DSF.
- Based on data package provided, the twelve hour tune was expired prior to the analysis of semivolatile closing continuing calibration standard SSTD0205B analyzed on 5/2/2009. Several compounds are outside the control limits in the closing standard. Positive results reported for fluorine and benzo(k)fluoranthene in sample C0646 were qualified “J” on the DSF.
- Several compounds failed precision criteria [percent relative standard deviation (%RSD) or percent difference (%D)] in the volatile and semivolatile initial and/or continuing calibrations. Positive results reported for these compounds in affected samples were qualified “J” on the DSFs. The precision exceeded the fifty percent (50%) criteria for 1,4-dioxane in the volatile medium level continuing calibration. This compound was not reported from these analyses.

**NOTES**

- Volatile samples C0631, C0641 and C0642 (medium level) had recovery of DMC chloroethane-d5 below the lower QC limits. There were no results reported for compounds associated with this DMC in these samples. No data were qualified based on these findings.

- Tentatively identified compounds (TICs) were reviewed during data validation. TICs identified as the same compound at different retention times were changed to “unknowns” by the reviewer on the TIC Form Is. Compounds identified from another fraction or blank contaminants were crossed-off the TIC Form Is by the reviewer. TIC Form Is for samples in which TICs were identified are included in Appendix E.
- Recovery of DMC 1,4-dioxane-d8 was outside the upper control limit in volatile sample C0631. No positive result was reported for the compound associated with this DMC in this sample and no data were qualified based on this finding.
- Compounds detected below the Contract Required Quantitation Limits (CRQLs) were qualified “J” on the DSFs unless superseded by “B”.
- Concentrations of target compounds found in the volatile analyses of the storage blanks are listed below. Samples with concentrations of common laboratory contaminants (\*) less than ten times (<10X) the blank concentrations or with concentrations of other contaminants less than five times (<5X) the blank concentrations have been qualified “B” on the DSFs.

<u>Blanks</u>	<u>Compound</u>	<u>Concentration</u>	<u>Affected Samples</u>
Storage (VHBLK01)	Methylene Chloride*	1.7 J ug/kg	All soil samples
	Cis-1,2-Dichloroethene	1.3J ug/kg	C0642
	Toluene	1.2J ug/kg	C0629, C0634
	x,p-Xylene	1.7J ug/kg	C0629, C0634
Storage (VHBLK01)	Methylene Chloride	1.5J ug/L	All aqueous samples

- Results for field duplicate pair C0629/C0630 were comparable for all compounds except acetone in the volatile fraction, but results in the semivolatile fraction were not comparable for most positive results. Results for field duplicate pair C0644/C0645 were comparable for all compounds except fluoranthene and pyrene in the semivolatile fraction.
- Based on data package provided, the twelve hour tune was expired prior to the analysis of semivolatile samples C0634DL and the closing continuing calibration standard SSTD0205P analyzed on 5/9/09. The closing standard was within control limits except di-n-octylphthalate. No positive results were reported for this compound in this sample and no action was taken based on this finding.
- The concentration of several compounds in the following samples exceeded the calibration range in the initial analyses. These samples were diluted and reanalyzed to bring the concentrations of these compounds within the calibration range. Results for these compounds are reported from the diluted analysis and annotated with (+) symbol on the DSFs by the reviewer.

<u>Fraction</u>	<u>Samples</u>	<u>Dilution Factor</u>	<u>Compounds</u>
VOA	C0631	622.8X 62.3X	Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene Styrene
	C0641	608.6X 60.9X	cis-1,2-Dichloroethene, Toluene, m,p-Xylene, o-Xylene, Styrene Benzene, Ethylbenzene
	C0642	64.6X 645.7X	Benzene, Toluene, , Ethylbenzene , m,p-Xylene, o-Xylene
SVOA	C0630	10X	Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene , Indeno(1,2,3-cd)pyrene
	C0631	20X	Naphthalene, 2-Methylnaphthalene, Acenaphthene, Dibenzofuran, Fluorene, Phenanthrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene , Benzo(a)pyrene , Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene
	C0632	5X	Bis(2-ethylhexyl)phthalate
	C0633	5X	Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene , Indeno(1,2,3-cd)pyrene
	C0634	125X	Phenanthrene
	C0640	250X	Naphthalene, 2-Methylnaphthalene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene , Indeno(1,2,3-cd)pyrene,
	C0641	10700X	Naphthalene, 2-Methylnaphthalene, Dibenzofuran, Fluorene, Phenanthrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene
	C0642	500X	Naphthalene, 2-Methylnaphthalene, Acenaphthene, Dibenzofuran, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene
SVOA	C0646	50X	2,4-Dimethylphenol, Naphthalene, 2-Methylnaphthalene, Phenanthrene, Carbazole, Fluoranthene,

- Sample weights other than five (5) grams were used for volatiles soil samples and other than thirty (30) grams for the extraction of semivolatile soil samples. The dilution factors reported on the DSFs were adjusted to reflect actual sample weight used.
- Based on sample screening, sample C0641 was initially analyzed at a ten fold (10X) dilution for the semivolatile fraction. The CRQLs are elevated in this sample due to this dilution.
- Recovery of DMC 4,6-dinitro-2-methylphenol-d2 was outside the upper control limit in semivolatile samples C0644, C0645 and C0646. No positive results were reported for the compound associated with this DMC in these samples and no data were qualified based on this finding.
- Encore tubes were used for collection of volatile soil samples in this sample set. All samples were transferred and kept frozen until time of analysis.
- Twenty three (23) Tentatively identified compounds (TICs) were found in the storage blank VHBLK01. This blank was analyzed after sample C0641 which had several TICs at high concentrations.

Data for Case 38495, SDGs C0629 and C0635, were reviewed in accordance with EPA Region 3 Innovative Approaches (Level M2) for Validation of Organic Data, June 1995.

### ATTACHMENTS

- 1) Appendix A Glossary of Data Qualifier Terms
- 2) Appendix B Data Summary Forms
- 3) Appendix C Chain-of-Custody Records
- 4) Appendix D Laboratory Case Narrative
- 5) Appendix E Tentatively Identified Compounds (TICs)

DCN: 38495\_C0629 and C0635

## Appendix A

### Glossary of Data Qualifier Codes

## **GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### **OTHER CODES**

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.



## Appendix B

### Data Summary Forms

DATA SUMMARY FORM: Volatiles

Case #: 38495

SDG : C0629

Number of Soil Samples : 9

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C0629	C0630		C0631		C0632		C0633	
Sampling Location : (Prefix: TCCA)	-SB-16-0304	-SB-16-0405		-SB-18-0405		-SB-22-0203		-SB-26-0507	
Field QC:	Dup of C0630	Dup of C0629							
Matrix :	Soil	Soil		Soil		Soil		Soil	
Units :	ug/Kg	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	4/27/2009	4/27/2009		4/27/2009		4/27/2009		4/27/2009	
Time Sampled :	09:52	09:58		10:52		13:20		14:34	
%Moisture :	3.3	3.4		26.9		2.9		16.3	
Dilution Factor :	0.98	0.96		0.96/62.3/622.8		1.16		0.97	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0								
Chloromethane	5.0								
Vinyl chloride	5.0				UL			UL	
Bromomethane	5.0								
Chloroethane	5.0								
Trichlorofluoromethane	5.0								
1,1-Dichloroethene	5.0								
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0								
Acetone	10	11	J		R	110			R
Carbon Disulfide	5.0					4.4	J		
Methyl acetate	5.0								
Methylene chloride	5.0	1.9	B	2.0	B	11	B	2.7	B
trans-1,2-Dichloroethene	5.0								
Methyl tert-butyl ether	5.0								
1,1-Dichloroethane	5.0								
cis-1,2-Dichloroethene	5.0								
2-Butanone	10					17			R
Bromochloromethane	5.0								
Chloroform	5.0								
1,1,1-Trichloroethane	5.0								
Cyclohexane	5.0					14	K		
Carbon tetrachloride	5.0								
Benzene	5.0					19000 +			
1,2-Dichloroethane	5.0								
1,4-Dioxane	100								
Trichloroethene	5.0					2.1	J		
Methylcyclohexane	5.0					31	K		
1,2-Dichloropropane	5.0								
Bromodichloromethane	5.0								
cis-1,3-Dichloropropene	5.0								
4-Methyl-2-pentanone	10	6.6	J			12	J		
Toluene	5.0	2.6	B			60000 +			
trans-1,3-Dichloropropene	5.0								

+ = Results reported from dilution. See dilution table in the case narrative

DATA SUMMARY FORM: Volatiles

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0629	C0630	C0631	C0632	C0633						
Sampling Location : (Prefix: TCCA)	-SB-16-0304	-SB-16-0405	-SB-18-0405	-SB-22-0203	-SB-26-0507						
Field QC:	Dup of C0630	Dup of C0629									
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	4/27/2009	4/27/2009	4/27/2009	4/27/2009	4/27/2009						
Time Sampled :	09:52	09:58	10:52	13:20	14:34						
%Moisture :	3.3	3.4	26.9	2.9	16.3						
Dilution Factor :	0.98	0.96	0.96/62.3/622.8	1.16	0.97						
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0					8.7					
Ethylbenzene	5.0					55000 +					
o-Xylene	5.0					78000 +					
m,p-Xylene	5.0	1.3	B			37000 +					
Styrene	5.0					7100 +					
Bromoform	5.0										
Isopropylbenzene	5.0					130					
1,1,1,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

+ = Results reported from dilution. See dilution table in the case narrative

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C0634	C0640	C0641	C0642				
Sampling Location : (Prefix: TCCA)		-SB-27-0506	-SB-31-0102	-SB-32-0203	-SB-33-0406				
Matrix :		Soil	Soil	Soil	Soil				
Units :		ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Date Sampled :		4/27/2009	4/28/2009	4/28/2009	4/28/2009				
Time Sampled :		16:11	09:21	09:40	10:03				
%Moisture :		19.5	11.7	20.5	11.5				
Dilution Factor :		0.85	1.28	1.07/60.9/608.6	0.94/64.6/645.7				
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0								
Chloromethane	5.0								
Vinyl chloride	5.0		UL						
Bromomethane	5.0								
Chloroethane	5.0								
Trichlorofluoromethane	5.0								
1,1-Dichloroethene	5.0								
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0								
Acetone	10	15	J	220		74		73	
Carbon Disulfide	5.0							1.5	J
Methyl acetate	5.0								
Methylene chloride	5.0	2.0	B	9.4	B	7.6	B	3.2	B
trans-1,2-Dichloroethene	5.0								
Methyl tert-butyl ether	5.0								
1,1-Dichloroethane	5.0	1.7	J						
cis-1,2-Dichloroethene	5.0					33000 +		1.1	B
2-Butanone	10		R	21				17	
Bromochloromethane	5.0								
Chloroform	5.0								
1,1,1-Trichloroethane	5.0	1.0	J						
Cyclohexane	5.0			1.5	J	2.2	J	7.9	
Carbon tetrachloride	5.0								
Benzene	5.0	20		90		13000 +		1600 +	
1,2-Dichloroethane	5.0								
1,4-Dioxane	100								
Trichloroethene	5.0					61			
Methylcyclohexane	5.0			3.4	J	4.3	J	12	
1,2-Dichloropropane	5.0								
Bromodichloromethane	5.0								
cis-1,3-Dichloropropene	5.0								
4-Methyl-2-pentanone	10			3.9	J	14			
Toluene	5.0	2.0	B	95		46000 +		14000 +	
trans-1,3-Dichloropropene	5.0	1.4	J						

+ = Results reported from dilution. See dilution table in the case narrative

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0634	C0640	C0641	C0642							
Sampling Location : (Prefix: TCCA)	-SB-27-0506	-SB-31-0102	-SB-32-0203	-SB-33-0406							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	4/27/2009	4/28/2009	4/28/2009	4/28/2009							
Time Sampled :	16:11	09:21	09:40	10:03							
%Moisture :	19.5	11.7	20.5	11.5							
Dilution Factor :	0.85	1.28	1.07/60.9/608.6	0.94/64.6/645.7							
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
Tetrachloroethene	5.0					54					
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0										
Ethylbenzene	5.0	9.7		46		15000 +		36000 +			
o-Xylene	5.0	3.4	J	250		74000 +		54000 +			
m,p-Xylene	5.0	2.3	B	260		32000 +		23000 +			
Styrene	5.0					33000 +					
Bromoform	5.0										
Isopropylbenzene	5.0	2.0	J	38		46		130			
1,1,2,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

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+ = Results reported from dilution. See dilution table in the case narrative



Case #: 38495

SDG : C0635

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0635	C0639	C0643	C0644	C0645						
Sampling Location : (Prefix: TCCA)	-TB-042709-1	-FB-042809-1	-TB-042709-2	-TW-13	-TW-26						
Field QC:	Trip Blank	Field Blank	Trip Blank	Dup of C0645	Dup of C0644						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	4/27/2009	4/28/2009	4/27/2009	4/27/2009	4/27/2009						
Time Sampled :	12:45	12:06	16:30	16:28	16:25						
pH :	<2.0	<2.0	<2.0	<2.0	<2.0						
Dilution Factor :	1.0	1.0	1.0	1.0	1.0						
Volatil Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
*Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0										
*Ethylbenzene	5.0										
o-Xylene	5.0										
m,p-Xylene	5.0										
*Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0										
1,1,2,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0										
*1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

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Case #: 38495

SDG : C0635

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C0646	C0647								
Sampling Location : (Prefix: TCCA)		-TW-33	-RB-042809-1								
Field QC:			Rinsate Blank								
Matrix :		Water	Water								
Units :		ug/L	ug/L								
Date Sampled :		4/28/2009	4/28/2009								
Time Sampled :		12:37	14:18								
pH :		<2.0	<2.0								
Dilution Factor :		1.0	1.0								
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
*Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0										
*Ethylbenzene	5.0	62									
o-Xylene	5.0	50									
m,p-Xylene	5.0	100									
*Styrene	5.0	22									
Bromoform	5.0										
Isopropylbenzene	5.0	2.7	J								
1,1,1,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0										
*1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: BNA

Case #: 38495

SDG : C0629

Number of Soil Samples : 9

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :	C0629	C0630	C0631	C0632	C0633						
Sampling Location : (Prefix: TCCA)	-SB-16-0304	-SB-16-0405	-SB-16-0405	-SB-22-0203	-SB-26-0507						
Field QC:	Dup of C0630	Dup of C0629									
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	4/27/2009	4/27/2009	4/27/2009	4/27/2009	4/27/2009						
Time Sampled :	09:52	09:58	10:52	13:20	14:34						
%Moisture :	3.3	3.4	26.9	2.9	16.3						
Dilution Factor :	0.98	0.99/9.9	1.0/20.0	0.97/4.9	0.98/4.9						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170			49	J						
Phenol	170	230		280		120	J			41	J
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170					180	J			UL	
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170	81	J	570				53	J		
4-Methylphenol	170					440				UL	
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170					660				UL	
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	56	J	320		47000 +		58	J	110	J
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170			110	J	15000 +				46	J
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	330		170	J	2400					
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170	62	J	940		2400		96	J	510	
3-Nitroaniline	330										
Acenaphthene	170			350		11000 +				68	J

+ = Results reported from dilution

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0629	C0630	C0631	C0632	C0633						
Sampling Location : (Prefix: TCCA)	-SB-16-0304	-SB-16-0405	-SB-18-0405	-SB-22-0203	-SB-26-0507						
Field QC:	Dup of C0630	Dup of C0629									
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	4/27/2009	4/27/2009	4/27/2009	4/27/2009	4/27/2009						
Time Sampled :	09:52	09:58	10:52	13:20	14:34						
%Moisture :	3.3	3.4	26.9	2.9	16.3						
Dilution Factor :	0.98	0.99/9.9	1.0/20.0	0.97/4.9	0.98/4.9						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170			350		9200 +				59	J
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170			860		17000 +				180	J
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170					710					
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	110	J	9200 +		47000 +		240		2300	
Anthracene	170	380		2400		14000 +		64	J	350	
Carbazole	170	130	J	1800		7000 +		49	J	400	
Di-n-butylphthalate	170	150	J	170	J			61	J		
Fluoranthene	170	300	J	13000 +		32000 +		600	J	6100 +	
Pyrene	170	290		9300 +		23000 +		630		5300 +	
Butylbenzylphthalate	170							110	J		
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	230		5500 +		12000 +		390		3000 +	
Chrysene	170	260		5300 +		11000 +		460		3600 +	
Bis(2-ethylhexyl)phthalate	170	2000		1600		580		5100 +		410	
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170	370		4500 +		8000 +		880		3400 +	
Benzo(k)fluoranthene	170	270	J	2500	J	6600 +		350	J	2900	J
Benzo(a)pyrene	170	300		3700 +		8300 +		490		3100 +	
Indeno(1,2,3-cd)pyrene	170	450	J	3500 +		5900 +		820	J	2900 +	
Dibenzo(a,h)anthracene	170	140	J	1700		3200		260		1600	
Benzo(g,h,i)perylene	170	260		2700		4300 +		540		3100	
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

+ = Results reported from dilution

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C0634		C0640		C0641		C0642			
Sampling Location : (Prefix: TCCA)		-SB-27-0506		-SB-31-0102		-SB-32-0203		-SB-33-0406			
Matrix :		Soil		Soil		Soil		Soil			
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg			
Date Sampled :		4/27/2009		4/28/2009		4/28/2009		4/28/2009			
Time Sampled :		16:11		09:21		09:40		10:03			
%Moisture :		19.5		11.7		20.5		11.5			
Dilution Factor :		25.0/125		25.0/250		214/10700		25.0/500			
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170			5500		9700	J				
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170			1100	J	18000	J				
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170			4700		32000	J				
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170					64000					
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	1300	J	190000 +		14000000 +		940000 +			
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170			92000 +		2200000 +	J	190000 +			
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	3800	J	14000		310000		45000			
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170			38000		590000		23000			
3-Nitroaniline	330			3600	J						
Acenaphthene	170	49000		29000		710000		170000 +			

+ = Results reported from dilution

Case #: 38495

SDG : C0629

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0634	C0640	C0641	C0642					
Sampling Location : (Prefix: TCCA)	-SB-27-0506	-SB-31-0102	-SB-32-0203	-SB-33-0406					
Matrix :	Soil	Soil	Soil	Soil					
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg					
Date Sampled :	4/27/2009	4/28/2009	4/28/2009	4/28/2009					
Time Sampled :	16:11	09:21	09:40	10:03					
%Moisture :	19.5	11.7	20.5	11.5					
Dilution Factor :	25.0/125	25.0/250	214/10700	25.0/500					
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330								
4-Nitrophenol	330								
Dibenzofuran	170	58000		50000		1700000 +	J	140000 +	
2,4-Dinitrotoluene	170	220000	J						
Diethylphthalate	5000								
Fluorene	170	74000		83000 +		2500000 +		190000 +	
4-Chlorophenyl-phenylether	170								
4-Nitroaniline	330								
4,6-Dinitro-2-methylphenol	330								
N-Nitrosodiphenylamine	170								
1,2,4,5-Tetrachlorobenzene	170								
4-Bromophenyl-phenylether	170								
Hexachlorobenzene	170								
Atrazine	170								
Pentachlorophenol	330								
Phenanthrene	170	150000 +		270000 +		7900000 +		500000 +	
Anthracene	170	14000		89000 +		7000000 +		120000 +	
Carbazole	170	4800	J	32000		2800000 +		71000	
Di-n-butylphthalate	170								
Fluoranthene	170	73000		300000 +		4500000 +		310000 +	
Pyrene	170	41000		210000 +		3300000 +		220000 +	
Butylbenzylphthalate	170								
3,3'-Dichlorobenzidine	170								
Benzo(a)anthracene	170	13000		120000 +		1500000 +	J	100000 +	
Chrysene	170	11000		110000 +		1500000 +	J	93000 +	J
Bis(2-ethylhexyl)phthalate	170			2900	J				
Di-n-octylphthalate	170								
Benzo(b)fluoranthene	170	6000		96000 +		920000 +	J	72000 +	J
Benzo(k)fluoranthene	170	4000	J	68000		580000		68000	
Benzo(a)pyrene	170	4900	J	93000 +		970000 +	J	69000 +	J
Indeno(1,2,3-cd)pyrene	170	2600	J	77000 +		540000		65000	
Dibenzo(a,h)anthracene	170	1300	J	33000		230000		24000	
Benzo(g,h,i)perylene	170	1900	J	63000		400000		44000	
2,3,4,6-Tetrachlorophenol	170								

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

+ = Results reported from dilution



Case #: 38495

SDG : C0635

Number of Soil Samples : 0

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 5

Lab. :

A4

Sample Number :	C0639	C0644	C0645	C0646	C0647						
Sampling Location : (Prefix: TCCA)	-FB-042809-1	-TW-13	-TW-26	-TW-33	-RB-042809-1						
Field QC :	Field Blank	Dup of C0645	Dup of C0644		Rinsate Blank						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	4/28/2009	4/27/2009	4/27/2009	4/28/2009	4/28/2009						
Time Sampled :	12:06	16:28	16:25	12:37	14:18						
Dilution Factor :	1.0	1.0	1.0	1.0/50.0	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	5.0										
Phenol	5.0							23			
Bis(2-Chloroethyl)ether	5.0										
2-Chlorophenol	5.0										
2-Methylphenol	5.0							37			
2,2'-Oxybis(1-chloropropane)	5.0										
Acetophenone	5.0										
4-Methylphenol	5.0							40			
N-Nitroso-di-n-propylamine	5.0										
Hexachloroethane	5.0										
Nitrobenzene	5.0										
Isophorone	5.0										
2-Nitrophenol	5.0										
2,4-Dimethylphenol	5.0							94 +	J		
Bis(2-chloroethoxy)methane	5.0										
2,4-Dichlorophenol	5.0										
Naphthalene	5.0			1.4	J			2200 +		1.4	J
4-Chloroaniline	5.0										
Hexachlorobutadiene	5.0										
Caprolactam	5.0										
4-Chloro-3-methylphenol	5.0	2.0	J							1.8	J
2-Methylnaphthalene	5.0							110 +	J		
Hexachlorocyclopentadiene	5.0										
2,4,6-Trichlorophenol	5.0										
2,4,5-Trichlorophenol	5.0										
1,1'-Biphenyl	5.0							12			
2-Chloronaphthalene	5.0										
2-Nitroaniline	10										
Dimethylphthalate	5.0										
2,6-Dinitrotoluene	5.0										
Acenaphthylene	5.0							42			
3-Nitroaniline	10										
Acenaphthene	5.0							60			

+ = Results reported from dilution

Case #: 38495 SDG : C0635  
 Site : TANK CAR CORPORATION OF AMERICA  
 Lab. : A4

Sample Number :	C0639	C0644	C0645	C0646	C0647						
Sampling Location : (Prefix: TCCA)	-FB-042809-1	-TW-13	-TW-26	-TW-33	-RB-042809-1						
Field QC :	Field Blank	Dup of C0645	Dup of C0644		Rinsate Blank						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	4/28/2009	4/27/2009	4/27/2009	4/28/2009	4/28/2009						
Time Sampled :	12:06	16:28	16:25	12:37	14:18						
Dilution Factor :	1.0	1.0	1.0	1.0/50.0	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10										
4-Nitrophenol	10										
Dibenzofuran	5.0							58			
2,4-Dinitrotoluene	5.0							11			
Diethylphthalate	5.0										
Fluorene	5.0							72	J		
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10										
4,6-Dinitro-2-methylphenol	10										
N-Nitrosodiphenylamine	5.0										
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10										
Phenanthrene	5.0					2.0	J	120 +	J		
Anthracene	5.0							35			
Carbazole	5.0							87 +	J		
Di-n-butylphthalate	5.0										
Fluoranthene	5.0					6.2	J	100 +	J		
Pyrene	5.0					5.8		74			
Butylbenzylphthalate	5.0										
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0					3.3	J	38			
Chrysene	5.0					3.7	J	33			
Bis(2-ethylhexyl)phthalate	5.0										
Di-n-octylphthalate	5.0										
Benzo(b)fluoranthene	5.0					4.4	J	35			
Benzo(k)fluoranthene	5.0					3.5	J	17	J		
Benzo(a)pyrene	5.0					3.9	J	27			
Indeno(1,2,3-cd)pyrene	5.0					4.6	J	25	J		
Dibenzo(a,h)anthracene	5.0					1.6	J	9.2			
Benzo(g,h,i)perylene	5.0					3.2	J	15			
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit

\*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

+ = Results reported from dilution

## Appendix C

### Chain-of-Custody Records



275 4-20-09

# U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY	
RAS#	CT14550
DAS#	Analytical TAT
NSF#	14 Days

38495

Date: 4/20/09		Site Activity: Removal Site Evaluations Assessment	
Site Name: Tank Car Corporation of America		Street Address: 1725 Walnut Ave	
City: Orland	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2009 T03 N 302DC6C A3GXRS00	CERCLIS #:	PAN000306553
Site ID:	Spill ID: A3GX	Operable Unit:	
Site Specific QA Plan Submitted: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Title: START3 QAPP	Date Approved: November 2006	
EPA Project Leader: Michael Towle	Phone#: 215-814-3272	Cell Phone #:	E-mail: towle.michael@epa.gov
Request Preparer: JOSHUA COPE	Phone#: 610-364-2130	Cell Phone #:	E-mail: Joshua.cope@ttemi.com
Site Leader: Jordan Vaughn	Phone#: 610-364-2141	Cell Phone #:	E-mail: Jordan.vaughn@ttemi.com
Contractor: Tetra Tech EM Inc			
#Samples 10	Matrix: soil	Parameter: TCL VOC	Method: SOM01.2 30458
#Samples 35	Matrix: soil	Parameter: TCL SVOC	Method: SOM01.2 30459
#Samples 40	Matrix: soil	Parameter: TAL Metals & Hg + 31 metals	Method: ILM05.4 ICPAES & Hg 30463
#Samples 13	Matrix: soil	Parameter: Cyanide	Method: ILM05.4 ICPAES 30464
#Samples 9	Matrix: water	Parameter: TCL VOC	Method: SOM01.2 30461
#Samples 6	Matrix: water	Parameter: TCL SVOC	Method: SOM01.2 30460
#Samples 6	Matrix: water	Parameter: TAL Metals & Hg	Method: ILM05.4 ICPAES & Hg 30462
Ship Date From: 4/27/09	Ship Date To: 4/30/09	Org. Validation Level M2	Inorg. Validation Level IM2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If Yes, TAT Needed: <input checked="" type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) PR's by ESM			
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) 14/16			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached Required Limits and CRQL/CRDLs Needed. *Method substitution permitted.			



**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38495

DAS No:

**R**

<b>Region:</b> 3 <b>Project Code:</b> CT4550 <b>Account Code:</b> PAN000306553 <b>CERCLIS ID:</b> AGX <b>Spill ID:</b> TCCA April 09 VOC & SVOC/IPA <b>Site Name/Stats:</b> Jordan Vaughn <b>Project Leader:</b> Tetra Tech <b>Action:</b> <b>Sampling Co:</b>		<b>Date Shipped:</b> 4/27/2009 <b>Carrier Name:</b> FedEx <b>Alrbill:</b> 854559928461 <b>Shipped to:</b> A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277		<b>Chain of Custody Record</b> <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Sampler Signature</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)	1					2					3					4				
Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)																										
1																														
2																														
3																														
4																														

ORGANIC SAMPLE NO.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAGNO/ PRESERVATIVE/ Bottle	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE NO.	QC Type
C0629	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SVOC soil (14)	TCCA1776 (Not preserved), TCCA1777 (Not preserved), TCCA1778 (Not preserved), TCCA1779 (Not preserved), TCCA1780 (5)	TCCA-SB-16-0304	S: 4/27/2009 9:52		
C0630	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SVOC soil (14)	TCCA1781 (Not preserved), TCCA1782 (Not preserved), TCCA1783 (Not preserved), TCCA1784 (Not preserved), TCCA1785 (5)	TCCA-SB-16-0405	S: 4/27/2009 9:58		Duplicate of TCCA-SB-16-0304
C0631	Soil (>12")/ Jordan Vaughn	H/G	SOM01.2 (14), SVOC soil (14)	TCCA1786 (Not preserved), TCCA1787 (Not preserved), TCCA1788 (Not preserved), TCCA1789 (Not preserved), TCCA1790 (5)	TCCA-SB-18-0405	S: 4/27/2009 10:52		
C0632	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SVOC soil (14)	TCCA1791 (Not preserved), TCCA1792 (Not preserved), TCCA1793 (Not preserved), TCCA1794 (Not preserved), TCCA1795 (5)	TCCA-SB-22-0203	S: 4/27/2009 13:20		MS/MSD
C0633	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SVOC soil (14)	TCCA1796 (Not preserved), TCCA1797 (Not preserved), TCCA1798 (Not preserved), TCCA1799 (Not preserved), TCCA1800 (5)	TCCA-SB-26-0507	S: 4/27/2009 14:34		
C0634	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SVOC soil (14)	TCCA1801 (Not preserved), TCCA1802 (Not preserved), TCCA1803 (Not preserved), TCCA1804 (Not preserved), TCCA1809 (5)	TCCA-SB-27-0506	S: 4/27/2009 16:11		

<b>Shipment for Case Complete?</b> 7 N	<b>Sample(s) to be used for laboratory QC:</b> Concentration: L = Low, M = Low/Medium, H = High SOM01.2 = SOM01.2 SOIL VOA, SVOC soil = SVOC soil, VOC = Total VOC	<b>Additional Sampler Signature(s):</b> Type/Designate: Composite = C, Grab = G	<b>Chain of Custody Seal Number:</b>
<b>Analysis Key:</b> SOM01.2 = SOM01.2 SOIL VOA, SVOC soil = SVOC soil, VOC = Total VOC	<b>Shipment Iced?</b>		

**TR Number: 3-023200937-042709-0001**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
 Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

**REGION COPY**



**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38495

DAS No:

**R**

<b>Region:</b> 3		<b>Date Shipped:</b> 4/27/2009	
<b>Project Code:</b> CT4550	<b>Carrier Name:</b> FedEx	<b>Chain of Custody Record</b>	
<b>Account Code:</b> PAN000306553	<b>Airbill:</b> 854559928461	<b>Relinquished By</b>	<b>Sampler Signature:</b>
<b>Spill ID:</b> AGX	<b>Shipped to:</b> A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	<b>Received By</b>	<b>(Date / Time)</b>
<b>Site Name/State:</b> TCCA April 09 VOC & SVOC/PA		1	
<b>Project Leader:</b> Jordan Vaughn		2	
<b>Action:</b>		3	
<b>Sampling Co:</b> Tetra Tech		4	

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0635	Water/ Jordan Vaughn	L/G	VOC (14)	TCCA1794 (HCL), TCCA1796 (HCL) (3)	TCCA-TB-042709-1	S: 4/27/2009 12:45		Trip Blank

<b>Shipment for Case Complete?</b> N	<b>Sample(s) to be used for laboratory QC:</b>	<b>Additional Sampler Signature(s):</b>	<b>Chain of Custody Seal Number:</b>
<b>Analysis Key:</b> SOM01.2 = SOM01.2 SOIL VOA, SVOC soil = SVOC soil, VOC = Total VOC	<b>Concentration:</b> L = Low, M = Low/Medium, H = High	<b>Type/Designate:</b> Composite = C, Grab = G	<b>Shipment Iced?</b>

**TR Number: 3-023200937-042709-0001**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38495  
DAS No:

**R**

Region: 3		Date Shipped: 4/28/2009	Chain of Custody Record	
Project Code: CT4550	Carrier Name: FedEx	Airbill: 854559928472	Relinquished By	Sampler Signature:
CERCLIS ID: PAN000306553	Shipped to: A4 Scientific	1544 Sawdust Road	(Date / Time)	Received By
Spill ID: AGX	TCCA April 09 VOC & SVOC/IPA	Suite 505		(Date / Time)
Site Name/State: Jordan Vaughn		The Woodlands TX 77380	1	
Project Leader: Jordan Vaughn		(281) 292-5277	2	
Action:			3	
Sampling Co: Tetra Tech			4	

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0639	Water/ Jordan Vaughn	L/G	SVOC/water (14), VOC (14)	TCCA1819, TCCA1820, TCCA1821 (HCL), TCCA1822 (HCL), TCCA1823 (HCL) (5)	TCCA-FB-042809-1	S: 4/28/2009 12:06		Field Blank
C0640	Soil (>12")/ Jordan Vaughn	L/G	SOM01.2 (14), SVOC soil (14)	TCCA1824 (Not preserved), TCCA1825 (Not preserved), TCCA1826 (Not preserved), TCCA1827 (Not preserved), TCCA1828 (5)	TCCA-SB-31-0102	S: 4/28/2009 9:21		--
C0641	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SVOC soil (14)	TCCA1829 (Not preserved), TCCA1830 (Not preserved), TCCA1831 (Not preserved), TCCA1832 (Not preserved), TCCA1833 (5)	TCCA-SB-32-0203	S: 4/28/2009 9:40		--
C0642	Soil (>12")/ Jordan Vaughn	M/G	SOM01.2 (14), SVOC soil (14)	TCCA1834 (Not preserved), TCCA1835 (Not preserved), TCCA1836 (Not preserved), TCCA1837 (Not preserved), TCCA1838 (5)	TCCA-SB-33-0406	S: 4/28/2009 10:03		--
C0643	Water/ Jordan Vaughn	L/G	VOC (14)	TCCA1839 (HCL), TCCA1840 (HCL), TCCA1841 (HCL) (3)	TCCA-TB-042709-2	S: 4/27/2009 16:30		Trip Blank
C0644	Ground Water/ Jordan Vaughn	M/G	SVOC/water (14), VOC (14)	TCCA1842, TCCA1843, TCCA1844 (HCL), TCCA1845 (HCL), TCCA1846 (HCL) (5)	TCCA-TW-13	S: 4/27/2009 16:28		Duplicate of TCCA-TW-26
C0645	Ground Water/ Jordan Vaughn	M/G	SVOC/water (14), VOC (14)	TCCA1847, TCCA1848, TCCA1849 (HCL), TCCA1850 (HCL), TCCA1851 (HCL) (5)	TCCA-TW-26	S: 4/27/2009 16:25		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SOM01.2 = SOM01.2 SOIL VOA, SVOC soil = SVOC soil, SVOC/water = SVOC water, VOC = Total VOC	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

**TR Number: 3-023200937-042809-0002**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38495

DAS No:

**R**

Region: 3		Date Shipped: 4/28/2009	
Project Code: CT4550	Carrier Name: FedEx	Chain of Custody Record	
Account Code: PAN000306553	Airbill: 854559928472	Relinquished By	(Date / Time)
CERCLIS ID: AGX	Shipped to: A4 Scientific	1	(Date / Time)
Spill ID: TCCA April 09 VOC & SVOC/PA	Suite 505	2	
Site Name/State: Jordan Vaughn	The Woodlands TX 77380	3	
Project Leader: Jordan Vaughn	(281) 292-5277	4	
Action:			
Sampling Co: Tetra Tech			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0646	Ground Water/ Jordan Vaughn	M/G	SVOCwater (14), VOC (14)	TCCA1852, TCCA1853, TCCA1854 (HCL), TCCA1855 (HCL), TCCA1856 (HCL) (5)	TCCA-TW-33	4/28/2009 12:37		MS/MSD

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SOM01.2 = SOM01.2 SOIL VOA, SVOC soil = SVOC soil, SVOCwater = SVOC water, VOC = Total VOC	Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G		Shipment Iced? _____

**TR Number: 3-023200937-042809-0002**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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**USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record**

Case No: 38495

R

<b>Region:</b> Project Code: CT4550 Account Code: PAN000306553 CERCLIS ID: AGX Spill ID: TCCA April 09 VOC & SVOC/PA Project Leader: Jordan Vaughn Action: Sampling Co: Tetra Tech		<b>Date Shipped:</b> 4/28/2009 <b>Carrier Name:</b> FedEx <b>Airbill:</b> 854559928472 <b>Shipped to:</b> A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277		<b>Chain of Custody Record</b> <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Sampler Signature:</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Relinquished By	(Date / Time)	Sampler Signature:	Received By	(Date / Time)	1					2					3					4				
Relinquished By	(Date / Time)	Sampler Signature:	Received By	(Date / Time)																										
1																														
2																														
3																														
4																														

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0647	Ground Water/ Jordan Vaughn	L/G	SVOCwater (14), VOC (14)	TCCA1857, TCCA1858, TCCA1859 (HCL), TCCA1860 (HCL), TCCA1861 (HCL) (5)	TCCA-RB-042809-1	4/28/2009 14:18		Rinsate blank

<b>Shipment for Case Complete? N</b>	<b>Sample(s) to be used for laboratory QC:</b>	<b>Additional Sampler Signature(s):</b>	<b>Chain of Custody Seal Number:</b>
<b>Analysis Key:</b> SVOCwater = SVOC water, VOC = Total VOC	<b>Concentration:</b> L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G	<b>Shipment Iced?</b>	

**TR Number: 3-023200937-042809-0003**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
 Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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Judy  
Snyder/ESC/R3/USEPA/US  
05/13/2009 04:02 PM

To Dan Slizys/ESC/R3/USEPA/US, Carroll  
Harris/ESC/R3/USEPA/US,  
cc Colleen Walling/DC/USEPA/US, Victor  
Yastrop/ESC/R3/USEPA/US,  
bcc  
Subject 38495, Tank Car Corporation : samples analyzed for VOA,  
no VOAS required by COC

Dan:

RE: samples C0629, C0630, C0631, C0632, C0633, C0634, C0640, C0641, C0642 for case 38495, Tank  
Car Corporation  
START/TTEMl: Joshua Cope  
RP: Michael Towle

Case 38495, Tank Car Corportaion, was scheduled for 10 soil VOAS, 9 water VOAS, 35 soil BNAS, 6  
water BNAS. Data in SDG C0629 is for 9 soil samples. The chains of custody specify BNA analysis only  
for these samples. There are tags (made from AVERY labels without any sort of tag backing) which  
specify VOA and BNA analyses for these samples. There is no ROC concerning the VOA analysis of  
these samples in the data package and no evidence that the lab contacted the Region or SMO for  
resolution of the question as to whether to analyze the samples for VOAS and BNAS or only for BNAS.  
The laboratory did analyze the nine samples for both VOAS and BNAS. Were the samples supposed to  
have VOA and BNA analyses or only BNA analysis? Thank you for your help in resolving this issue.  
\*\*\*\*\*

Judy Snyder  
ESAT Auditor, Region 3  
Lockheed Martin Enterprise Solutions & Services  
701 Mapes Road  
Ft. Meade, MD 20755-5350  
Phone 410-305-3015  
Fax 410-305-3095

## Appendix D

### Laboratory Case Narrative



Contract #: EPW05036	Case #: 38495	SDG #: C0629
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SDG NARRATIVE

**SAMPLE RECEIPT & LOGIN**

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

Client Sample	Lab Sample	Matrix	#Cont.	Received	Analysis	Comments
C0629	0010225-01	Soil	5	04/28/09 12:04	SOM01.2 VOA LOW SOM01.2 SVOA	SDG FIRST SX
C0630	0010225-02	Soil	5	04/28/09 12:04	SOM01.2 SVOA SOM01.2 VOA LOW	
C0631	0010225-03	Soil	5	04/28/09 12:04	SOM01.2 SVOA SOM01.2 VOA LOW SOM01.2 VOA MED	
C0632	0010225-04	Soil	5	04/28/09 12:04	SOM01.2 SVOA SOM01.2 VOA LOW	
C0633	0010225-05	Soil	5	04/28/09 12:04	SOM01.2 VOA LOW SOM01.2 SVOA	
C0634	0010225-06	Soil	5	04/28/09 12:04	SOM01.2 VOA LOW SOM01.2 SVOA MED	
C0640	0010228-01	Soil	5	04/29/09 10:18	SOM01.2 SVOA MED SOM01.2 VOA LOW	
C0641	0010228-02	Soil	5	04/29/09 10:18	SOM01.2 SVOA MED SOM01.2 VOA LOW SOM01.2 VOA MED	
C0642	0010228-03	Soil	5	04/29/09 10:18	SOM01.2 VOA MED SOM01.2 SVOA MED SOM01.2 VOA LOW	SDG FINAL SX

The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)	Airbill No.
4/28/09	1	5	854559928461
4/29/09	1	5	854559928472

The following issues were noted:

**Issue:** Sample C0632 is designated on the TR/COC as laboratory QC for the organic soil samples received on 4/28/09; however, the Scheduling Notification Form lists that laboratory QC is not required.

**Resolution:** Per Region 3, the laboratory noted the issue and proceeded with the analysis of the samples. This Region only requires laboratory QC on the Pest and/or ARO fraction for Organic analysis. This resolution will be applied to all TR/COCs received for this Case that designate a sample for VOA, TVOA, and/or SVOA laboratory QC.

000000001

Contract #: EPW05036	Case #: 38495	SDG #: C0629
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Directive (email) is enclosed. No other discrepancies or issues were noted during sample receipt and login.

**VOLATILES LOW/MEDIUM**

Samples were analyzed using instrument C-5973 and H-5975.

Instrument C-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

Instrument H-5975 consisted of an Agilent 5975 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

MS/MSD was not required.

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	EPA Sample ID
Bromomethane	VSTD100BT, VSTD050BT, VSTD10063, VSTD05067, VSTD00567, VSTD200BY, VSTD100BY, VSTD010BY, VSTD050CC
Chloromethane	VSTD005BT, VSTD2.5BT, VSTD010BY, VSTD005BY, VSTD025BV
Acetone	VSTD2.567
Dichlorodifluoromethane	VSTD200BY, VSTD100BY, VSTD010BY, VSTD005BY, VSTD025BU, VSTD025BW, VSTD050BZ, VSTD050CA, VSTD050CC
Chloroethane	VSTD010BY, VSTD005BY
Vinyl Chloride-d3	VSTD025BV, VSTD025BW

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

**SEMI-VOLATILES**

**1) Extractions**

Soil samples were extracted by sonication method. GPC cleanup was performed on soil samples and the associated Blank. No problems were encountered during the extraction.

**2) Analysis**

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was not required.

Samples C0634, C0634DL, C0640, C0640DL, C0641, C0641, C0642 and C0641DL were analyzed at Medium Level.

000000002

Contract #: EPW05036	Case #: 38495	SDG #: C0629
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The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C0630	10
C0631	20
C0632	5
C0633	5
C0634	5
C0640	10
C0641	500
C0642	20

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	EPA Sample ID
Benzo (b) fluoranthene	C0629, C0630, C0630DL, C0631, C0631DL, C0632, C0632DL, C0633, C0633DL, C0634, C0634DL, C0640, C0640DL, C0641, C0641DL, C0642
Benzo (k) fluoranthene	C0629, C0630, C0630DL, C0631, C0631DL, C0632, C0632DL, C0633, C0633DL, C0634, C0634DL, C0640, C0640DL, C0641, C0641DL, C0642, SSTD0105E, SSTD0055E, SSTD0205G
Indeno (1, 2, 3-cd) pyrene	C0629, C0630, C0630DL, C0631, C0631DL, C0632, C0632DL, C0633, C0633DL, C0634, C0640, C0640DL, C0641, C0641DL, C0642, SSTD0205E, SSTD0805E, SSTD0405E, SSTD0105E, SSTD0055E, SSTD0204U, SSTD0205C, SSTD0205D, SSTD0205F, SSTD0205G, SSTD0205H, SSTD0205I, SSTD0205O, SSTD0205P
Caprolactam	SSTD0805E
Phenol-d5	SBLK2Z

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

**VOLATILES**

**Low Level Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured.

$A_{is}$  = Area of the characteristic ion (EICP) for the specific internal standard.

$I_s$  = Amount of internal standard added in nanograms (ng).

RRF = Mean relative response factor from the heated purge of the initial calibration.

$W_s$  = Weight of sample added to the purge tube, in grams (g).

000000003

Contract #: EPW05036	Case #: 38495	SDG #: C0629
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$$D = \frac{100 - \%moisture}{100}$$

DF = Dilution Factor

**Medium Level Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) = \frac{(A_x)(I_s)(AVt)1000(DF)}{(A_{is})(RRF)(V_a)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured.

$A_{is}$  = Area of the characteristic ion (EICP) for the specific internal standard.

$I_s$  = Amount of internal standard added in nanograms (ng).

$RRF$  = Mean relative response factor from the heated purge of the initial calibration.

$W_s$  = Weight of sample added to the purge tube, in grams (g).

$$D = \frac{100 - \%moisture}{100}$$

DF = Dilution Factor

AVt = Adjusted Total Volume of the Methanol Extract in milliliters (mL)

$$AVt = Vt + \{W_s - [W_s(D)]\}$$

Where Vt is the total volume of methanol extract in mL.

The Quantity derived from  $\{W_s - [W_s(D)]\}$  is the soil water volume expressed in mL.

**Semivolatiles:**

**Soil/Sediment:**

$$\text{Concentration } (\mu\text{g/Kg}) \text{ (Dry weight Basis)} = \frac{(A_x)(I_s)(V_t)(D_f)(GPC)}{(A_{is})(RRF)(V_i)(W_s)(D)}$$

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in nanograms (ng).

$V_t$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ).

$V_i$  = Volume of extracted infected in microliters ( $\mu\text{L}$ ).

$$D = \frac{100 - \%moisture}{100}$$

$W_s$  = Weight of sample extracted in grams (g).

Df = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. ( If, no GPC is performed, GPC=1).}$$

$V_{in}$  = Volume of extract loaded onto GPC column.

$V_{out}$  = Volume of extract collected after the GPC cleanup.

$RRF$  = Mean relative response factor determined from the initial calibration.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy **Sample Data Package**

A4 SCIENTIFIC, INC.  
1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW05036	Case #: 38495	SDG #: C0629
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and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

Sru. & QA specialist  
Signature and Title

05/12/09  
Date of Signature

000000005

Contract #: EPW05036	Case #: 38495	SDG #: C0635
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SDG NARRATIVE

**SAMPLE RECEIPT & LOGIN**

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
C0635	0010226-01	Water	3	04/28/09 12:04	SOM01.2 VOA LOW	
C0639	0010229-01	Water	5	04/29/09 10:18	SOM01.2 VOA LOW SOM01.2 SVOA	
C0643	0010229-02	Water	3	04/29/09 10:18	SOM01.2 VOA LOW	
C0644	0010229-03	Water	5	04/29/09 10:18	SOM01.2 VOA LOW SOM01.2 SVOA	
C0645	0010229-04	Water	5	04/29/09 10:18	SOM01.2 VOA LOW SOM01.2 SVOA	
C0646	0010229-05	Water	5	04/29/09 10:18	SOM01.2 VOA LOW SOM01.2 SVOA	SDG FINAL SX
C0647	0010229-06	Water	5	04/29/09 10:18	SOM01.2 VOA LOW SOM01.2 SVOA	NOT LISTED ON TRCOC

The cooler temperatures are listed against the coolers.

<u>DATE RECEIVED</u>	<u>COOLER NO.</u>	<u>Temp (in °C)</u>	<u>Airbill No.</u>
4/28/09	1	5	854559928461
4/29/09	1	4	854559928472

The following issues were noted:

Issue: The laboratory received a VOA/SVOA water sample on 4/29/09 that was not listed on the TR/COC. The sample information is listed below:

<u>Sample ID</u>	<u>Matrix</u>	<u>Analysis</u>	<u>Station Location</u>	<u>Sample Collection Date and Time</u>
C0647 14:18	Water	VOA/SVOA TCCA1857, -58, -59, -60, and -61	TCCA-RB-042809-1	4/28/09

Resolution: Per Region 3, the laboratory noted and proceeded with the analysis of the sample.

Directive (email) is enclosed. No other discrepancies or issues were noted during sample receipt and login.

Contract #: EPW05036	Case #: 38495	SDG #: C0635
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**VOLATILES LOW/MEDIUM**

Samples were analyzed using instrument C-5973.

Instrument C-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

All VOA samples had the pH characteristics verified. The reading is listed below.

EPA SAMPLE #	LAB SAMPLE #	pH
C0635	00010226-01	≤ 2
C0639	00010229-01	≤ 2
C0643	00010229-02	≤ 2
C0644	00010229-03	≤ 2
C0645	00010229-04	≤ 2
C0646	00010229-05	≤ 2
C0647	00010229-06	≤ 2

MS/MSD was not required.

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	EPA Sample ID
Bromomethane	VSTD20058

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

**SEMI-VOLATILES**

1) **Extractions**

Water samples and associated blanks were extracted by continuous liquid-liquid extraction method. No problems were encountered during extraction.

2) **Analysis**

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was not required.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C0646	50

Manual integrations were performed for the following samples for the compounds listed against them.

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW05036	Case #: 38495	SDG #: C0635
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Compound	EPA Sample ID
Benzo (b) fluoranthene	C0645, C0646, SSTD0104T, SSTD0054T
Benzo (k) fluoranthene	SSTD0105E, SSTD0055E, SSTD0104T, SSTD0054T, C0645, C0646
Indeno (1, 2, 3-cd) pyrene	SSTD0205E, SSTD0805E, SSTD0405E, SSTD0105E, SSTD0055E, SSTD0205F, SSTD0204U, SSTD0804T, SSTD04040T, SSTD0204T, SSTD0104T, SSTD0054T, SSTD0204Z, SSTD0204B, C0645, C0646
Caprolactam	SSTD0805E, SSTD0804T
Di-n-octylphthalate	SSTD0804T, SSTD0054T
Dibenzo (a, h) anthracene	SSTD0054T
Benzo (g, h, I) perylene	, SSTD0054T

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

**VOLATILES**

**Water (Low/Med, Trace & SIM):**

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(Df)}{(A_{is})(RRF)(V_o)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured.

$A_{is}$  = Area of the characteristic ion (EICP) for the internal standard.

$I_s$  = Amount of internal standard added in nanograms (ng).

$\overline{RRF}$  = Mean relative response factor from the initial calibration.

$V_o$  = Total volume of water purged, in milliliters (mL).

$Df$  = Dilution factor.

**Semivolatiles:**

**Water**

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(V_t)(Df)(GPC)}{(A_{is})(RRF)(V_o)(V_i)}$$

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in nanograms (ng).

$\overline{RRF}$  = Mean relative response factor determined from the initial calibration.

$V_o$  = Volume of water extracted in milliliters (mL).

$V_i$  = Volume of extracted infected in microliters ( $\mu\text{L}$ ).

$V_t$  = Volume of concentrated extract in microliters ( $\mu\text{L}$ ). ( $V_t = 1000\mu\text{L}$ ).

$Df$  = Dilution Factor.





## Appendix E

### Tentatively Identified Compounds (TICs)

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0631

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-03  
 Sample wt/vol: 5.20 (g/mL) g Lab File ID: C8102.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 04/28/2009  
 % Moisture: not dec. 26.9 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000300-57-2	Benzene, 2-propenyl-	12.86	28	JN
02	000103-65-1	Benzene, propyl-	12.86	37	JN
03	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.97	810	JN
04	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (A) <i>unknown</i>	13.58	170	JN <i>5/7/09</i>
05	000124-18-5	Decane	13.12	44	JN
06	000098-83-9	.alpha.-Methylstyrene	13.33	290	JN
07	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (A) <i>unknown</i>	13.52	810	JN
08	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	13.58	640	JN <i>5/7/09</i>
09	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	13.63	210	JN <i>5/7/09</i>
10	000271-89-6	Benzofuran	13.77	330	JN
11	000095-63-6	Benzene, 1,2,4-trimethyl-	13.33	330	JN
12	000637-50-3	Benzene, 1-propenyl-	13.58	140	JN
13	000496-11-7	Indane	14.14	760	JN
14	000095-13-6	Indene	14.35	950	JN
15	002870-04-4	Benzene, 2-ethyl-1,3-dimethyl	14.58	170	JN
16	000874-41-9	Benzene, 1-ethyl-2,4-dimethyl	14.58	210	JN
17	027831-13-6	<del>Benzene, 4-ethenyl-1,2-dimethyl-</del> <i>unknown</i>	14.62	66	JN <i>5/7/09</i>
18	000824-90-8	1-Phenyl-1-butene	14.67	170	JN
19	002039-90-9	Benzene, 2-ethenyl-1,3-dimethyl-	14.73	120	JN
20	003333-13-9	Benzene, 1-methyl-4-(2-propenyl)-	14.79	36	JN
21	017059-52-8	Benzofuran, 7-methyl-	14.88	100	JN
22	000095-93-2	Benzene, 1,2,4,5-tetramethyl	14.93	82	JN
23		UNKNOWN 13.85	14.58	290	J
24	027831-13-6	<del>Benzene, 4-ethenyl-1,2-dimethyl-</del> <i>unknown</i>	15.08	56	JN <i>5/7/09</i>
25	000767-58-8	Indane, 1-methyl-	15.19	120	JN
26		UNKNOWN 13.85	15.29	57	J
27	000824-22-6	1H-Indene, 2,3-dihydro-4-methyl-	15.33	150	JN
28	002177-47-1	<del>2-Methylindene (01)</del> <i>unknown</i>	15.33	210	JN <i>5/7/09</i>
29	002177-47-1	<del>2-Methylindene (02)</del> <i>unknown</i>	15.47	170	JN <i>5/7/09</i>
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	75	

<sup>1</sup>EPA-designated Registry Number.

000000057

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0631ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-03  
 Sample wt/vol: 5.12 (g/mL) g Lab File ID: H6148.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/28/2009  
 % Moisture: not dec. 26.9 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	11.85	13000	JN
02	000108-67-8	<del>Benzene, 1,3,5-trimethyl- (0)</del> <i>unknown</i>	11.99	14000	JN <i>5/10/09</i>
03	000611-14-3	Benzene, 1-ethyl-2-methyl-	12.26	4100	JN
04	000098-83-9	.alpha.-Methylstyrene	12.30	4500	JN
05	000108-67-8	<del>Benzene, 1,3,5-trimethyl- (0)</del> <i>unknown</i>	12.50	31000	JN <i>2/18 5/10/09</i>
06	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.59	23000	JN
07	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.64	8600	JN
08	000271-89-6	Benzofuran	12.78	5600	JN
09	000095-63-6	Benzene, 1,2,4-trimethyl-	12.99	11000	JN
10	000637-50-3	Benzene, 1-propenyl-	13.06	5600	JN
11	000496-11-7	Indane	13.19	24000	JN
12	000095-13-6	Indene	13.42	32000	JN
13	001758-88-9	Benzene, 2-ethyl-1,4-dimethy	13.60	2900	JN
14	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	13.63	3000	JN
15	000933-98-2	Benzene, 1-ethyl-2,3-dimethy	13.70	10000	JN
16	000767-58-8	Indan, 1-methyl-	13.79	5300	JN
17	000768-49-0	Benzene, (2-methyl-1-propen.	13.87	7900	JN
18	017059-52-8	Benzofuran, 7-methyl-	14.01	3400	JN
19	000095-93-2	Benzene, 1,2,4,5-tetramethyl	14.07	4300	JN
20		UNKNOWN 12.88	14.11	15000	J
21	005379-20-4	Benzene, 1-ethenyl-3,5-dime.	14.23	5400	JN
22	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.34	8000	JN
23	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.47	15000	JN
24	002177-47-1	<del>2-Methylindene (01)</del> <i>unknown</i>	14.53	25000	JN <i>2/18 5/10/09</i>
25	002177-47-1	<del>2-Methylindene (02)</del> <i>unknown</i>	14.62	26000	JN
26	000612-17-9	1,4-Dihydronaphthalene	14.69	3700	JN
27	004489-84-3	Benzene, (3-methyl-2-butenyl	14.75	2700	JN
28	000270-82-6	2-Benzothiophene #	15.07	8400	JN
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000106

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0631MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-03RE1  
 Sample wt/vol: 5.12 (g/mL) g Lab File ID: H6156.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/28/2009  
 % Moisture: not dec. 26.9 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000611-14-3	Benzene, 1-ethyl-2-methyl-	11.85	47000	JDN
02	000108-67-8	Benzene, 1,3,5-trimethyl-	11.99	48000	JDN
03	000526-73-8	Benzene, 1,2,3-trimethyl-	12.49	130000	JDN
04	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del>	12.58	87000	JDN
05	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del>	12.64	30000	JDN
06	000095-63-6	Benzene, 1,2,4-trimethyl-	12.98	41000	JDN
07	000496-11-7	Indane	13.19	100000	JDN
08	000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	13.34	27000	JDN
09	000095-13-6	Indene	13.41	480000	JDN
10	000527-84-4	Benzene, 1-methyl-2-(1-methyl-)	13.70	39000	JDN
11	000768-49-0	Benzene, (2-methyl-1-propenyl-)	13.87	31000	JDN
12		UNKNOWN 12.88	14.11	65000	JD
13	027831-13-6	Benzene, 4-ethenyl-1,2-dimethyl-	14.22	24000	JDN
14	000767-58-8	Indan, 1-methyl-	14.34	35000	JDN
15	002039-89-6	Benzene, 2-ethenyl-1,4-dimethyl-	14.47	67000	JDN
16	000612-17-9	1,4-Dihydronaphthalene	14.52	140000	JDN
17	022433-39-2	Benzene, 1-methyl-1,2-propadienyl-	14.61	150000	JDN
18	000095-15-8	Benzo[b]thiophene	15.07	73000	JDN
19		UNKNOWN 12.88	15.42	36000	JD
20	006974-97-6	1H-Indene, 4,7-dimethyl-	15.52	34000	JDN
21	000090-12-0	Naphthalene, 1-methyl-	15.94	520000	JDN
22	000092-52-4	Biphenyl	16.31	80000	JDN
23	000939-27-5	Naphthalene, 2-ethyl-	16.44	72000	JDN
24	000581-42-0	<del>Naphthalene, 2,6-dimethyl-</del>	16.52	120000	JDN
25	000582-16-1	Naphthalene, 2,7-dimethyl-	16.62	88000	JDN
26	000581-42-0	<del>Naphthalene, 2,6-dimethyl-</del>	16.64	42000	JDN
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000154

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0634

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-06  
 Sample wt/vol: 5.90 (g/mL) g Lab File ID: H6064.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 04/28/2009  
 % Moisture: not dec. 19.5 Date Analyzed: 05/02/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0) <i>w/known</i>	12.49	65	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0) <i>w/known</i>	12.99	33	JN
03	000496-11-7	Indane	13.19	430	JN
04	001758-88-9	Benzene, 2-ethyl-1,4-dimethyl	13.70	60	JN
05	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	13.79	190	JN
06		UNKNOWN 12.88	14.11	56	J
07	000824-22-6	<del>1H-Indene, 2,3-dihydro-4-me</del> <i>w/known</i>	14.34	150	JN
08	000824-22-6	<del>1H-Indene, 2,3-dihydro-4-me</del> <i>w/known</i>	14.47	160	JN
09	022433-39-2	<del>Benzene, 1-methyl-1,2-propad</del> <i>w/known</i>	14.52	97	JN
10	022433-39-2	<del>Benzene, 1-methyl-1,2-propad</del> <i>w/known</i>	14.61	110	JN
11	004489-84-3	Benzene, (3-methyl-2-butenyl	14.75	44	JN
12	000095-15-8	Benzo[b]thiophene	15.06	37	JN
13		UNKNOWN 12.88	15.13	25	J
14	006682-71-9	1H-Indene, 2,3-dihydro-4,7-	15.28	41	JN
15		UNKNOWN 12.88	15.42	43	J
16	006974-97-6	1H-Indene, 4,7-dimethyl-	15.52	30	JN
17	001075-22-5	1H-Indene, 2,3-dihydro-5,6-	15.57	25	JN
18	<del>000092-52-4</del>	<del>Biphenyl</del>	<del>16.31</del>	<del>56</del>	<del>JN</del>
19	000581-42-0	Naphthalene, 2,6-dimethyl-	16.52	150	JN
20	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>w/known</i>	16.62	180	JN
21	000582-16-1	<del>Naphthalene, 2,7-dimethyl-</del> <i>w/known</i>	16.78	52	JN
22	000575-41-7	Naphthalene, 1,3-dimethyl-	16.89	26	JN
23		UNKNOWN 12.88	17.27	59	J
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000218

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0640

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-01  
 Sample wt/vol: 3.92 (g/mL) g Lab File ID: C8116.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 04/29/2009  
 % Moisture: not dec. 11.7 Date Analyzed: 05/08/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.97	370	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>colman</i>	13.08	430	JN <i>5/10/09</i>
03	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.31	150	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.50	750	JN
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	13.57	110	JN
06	000527-84-4	Benzene, 1-methyl-2-(1-meth.	13.78	110	JN
07	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> <i>colman</i>	13.93	430	JN <i>5/10/09</i>
08	000496-11-7	Indane	14.13	880	JN
09	000095-13-6	Indene	14.34	760	JN
10	000099-87-6	Benzene, 1-methyl-4-(1-meth.	14.51	240	JN
11	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	14.58	300	JN
12	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	14.62	56	JN
13	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	14.67	370	JN
14	002039-90-9	Benzene, 2-ethenyl-1,3-dime.	14.73	54	JN
15	017851-27-3	Benzene, 1-ethyl-2,4,5-trim.	14.79	57	JN
16	000934-80-5	Benzene, 4-ethyl-1,2-dimethy	14.84	70	JN
17	017059-52-8	Benzofuran, 7-methyl-	14.88	97	JN
18	000527-53-7	Benzene, 1,2,3,5-tetramethyl	14.93	190	JN
19		UNKNOWN 13.85	14.97	440	J
20		UNKNOWN 13.85	15.07	150	J
21		UNKNOWN 13.85	15.11	61	J
22	000874-35-1	<del>1H-Indene, 2,3-dihydro-5-me</del> <i>colman</i>	15.19	370	JN <i>5/10/09</i>
23	000874-35-1	<del>1H-Indene, 2,3-dihydro-5-me</del> <i>colman</i>	15.33	690	JN <i>5/10/09</i>
24	002177-47-1	<del>2-Methylindene (01)</del> <i>colman</i>	15.39	320	JN
25	002177-47-1	<del>2-Methylindene (02)</del> <i>colman</i>	15.47	450	JN
26	000612-17-9	1,4-Dihydronaphthalene	15.55	59	JN
27	097664-19-2	Benzene, 1-methyl-2-(1-meth.	15.60	72	JN
28		UNKNOWN 13.85	15.64	54	J
29		UNKNOWN 13.85	15.68	68	J
30	000095-15-8	Benzo[b]thiophene	15.93	57	JN
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000262

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0641ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-02  
 Sample wt/vol: 4.94 (g/mL) g Lab File ID: H6150.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/29/2009  
 % Moisture: not dec. 20.5 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	11.85	22000	JN
02	000108-67-8	<del>Benzene, 1,3,5-trimethyl-</del> (0) <i>unknown</i>	11.99	28000	JN <i>5/10/09</i>
03	000611-14-3	Benzene, 1-ethyl-2-methyl-	12.26	5600	JN
04	000098-83-9	.alpha.-Methylstyrene	12.30	6600	JN
05	000108-67-8	<del>Benzene, 1,3,5-trimethyl-</del> (0) <i>unknown</i>	12.50	56000	JN
06	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.59	29000	JN <i>5/6/09</i>
07	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.64	11000	JN
08	000271-89-6	Benzofuran	12.79	13000	JN
09	000095-63-6	Benzene, 1,2,4-trimethyl-	12.59	17000	JN
10	000637-50-3	Benzene, 1-propenyl-	13.06	5600	JN
11	000496-11-7	Indane	13.19	43000	JN
12	000934-74-7	Benzene, 1-ethyl-3,5-dimethyl	13.35	12000	JN
13	000095-13-6	Indene	13.42	56000	JN
14	001758-88-9	Benzene, 2-ethyl-1,4-dimethyl	14.01	4000	JN
15	000934-74-7	Benzene, 1-ethyl-3,5-dimethyl	13.63	4300	JN
16	000933-98-2	Benzene, 1-ethyl-2,3-dimethyl	13.71	14000	JN
17	000767-58-8	Indan, 1-methyl-	13.79	12000	JN
18	000768-49-0	Benzene, (2-methyl-1-propen.	13.87	7600	JN
19	017059-52-8	<del>Benzofuran, 7-methyl-</del> (01) <i>unknown</i>	14.01	6100	JN <i>5/10/09</i>
20	000095-93-2	Benzene, 1,2,4,5-tetramethyl	14.47	5700	JN
21	017059-52-8	<del>Benzofuran, 7-methyl-</del> (02) <i>unknown</i>	14.11	19000	JN <i>5/10/09</i>
22	005379-20-4	Benzene, 1-ethenyl-3,5-dimethyl	14.23	4700	JN
23	000824-22-6	1H-Indene, 2,3-dihydro-4-methyl	14.34	12000	JN
24	002039-89-6	Benzene, 2-ethenyl-1,4-dimethyl	14.47	27000	JN
25	002177-47-1	2-Methylindene	14.53	26000	JN
26	065051-83-4	Benzene, (1-methyl-2-cyclopentyl)	14.62	27000	JN
27	000270-82-6	2-Benzothiophene #	15.07	12000	JN
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000354



1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0641MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-02RE1  
 Sample wt/vol: 4.94 (g/mL) g Lab File ID: H6157.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/29/2009  
 % Moisture: not dec. 20.5 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	11.85	55000	JDN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (01) <i>unknown</i>	11.99	74000	JDN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (02) <i>unknown</i>	12.49	170000	JDN
04	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.58	77000	JDN
05	000100-80-1	<del>Benzene, 1-ethenyl-3-methyl-</del> <i>unknown</i>	12.64	28000	JDN
06	000271-89-6	Benzofuran	12.78	38000	JDN
07	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (03) <i>unknown</i>	12.98	47000	JDN
08	000496-11-7	Indane	13.19	150000	JDN
09	001758-88-9	Benzene, 2-ethyl-1,4-dimethy	13.34	32000	JDN
10	000095-13-6	Indene	13.41	580000	JDN
11	000527-84-4	Benzene, 1-methyl-2-(1-meth.	13.70	39000	JDN
12	000767-58-8	Indan, 1-methyl-	13.79	32000	JDN
13	017059-52-8	Benzofuran, 7-methyl-	14.11	63000	JDN
14	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.34	39000	JDN
15	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.47	71000	JDN
16	002177-47-1	2-Methylindene	14.52	110000	JDN
17	000612-17-9	1,4-Dihydronaphthalene	14.61	110000	JDN
18	000095-15-8	Benzo[b]thiophene	15.07	120000	JDN
19		UNKNOWN 12.88	15.42	28000	JD
20	000090-12-0	<del>Naphthalene, 1-methyl-</del> (01) <i>unknown</i>	15.81	94000	JDN
21	000090-12-0	<del>Naphthalene, 1-methyl-</del> (02) <i>unknown</i>	15.94	540000	JDN
22	000092-52-4	Biphenyl	16.31	66000	JDN
23	000939-27-5	Naphthalene, 2-ethyl-	16.44	44000	JDN
24	000581-42-0	Naphthalene, 2,6-dimethyl-	16.52	82000	JDN
25	000581-40-8	Naphthalene, 2,3-dimethyl-	16.62	49000	JDN
26					
27					
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	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000402

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0642

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-03  
 Sample wt/vol: 5.31 (g/mL) g Lab File ID: C8119.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 04/29/2009  
 % Moisture: not dec. 11.5 Date Analyzed: 05/08/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000873-49-4	Benzene, cyclopropyl-	12.76	21	JN
02	000103-65-1	Benzene, propyl-	12.86	23	JN
03	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.97	430	JN
04	000108-67-8	Benzene, 1,3,5-trimethyl-	13.08	340	JN
05	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.31	140	JN
06	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0.100/ug) <i>not shown</i>	13.51	620	JN <i>10 5/8/09</i>
07	000100-80-1	Benzene, 1-ethenyl-3-methyl-	13.58	410	JN
08	000622-97-9	Benzene, 1-ethenyl-4-methyl-	13.63	100	JN
09		UNKNOWN 13.86	13.70	20	J
10	000271-89-6	Benzofuran	13.78	480	JN
11	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0.100/ug) <i>not shown</i>	13.95	280	JN <i>15 5/8/09</i>
12		UNKNOWN 13.86	14.02	79	J
13	000496-11-7	Indane	14.14	1000	JN
14	000095-13-6	Indene	14.35	920	JN
15	000095-93-2	<del>Benzene, 1,2,4,5-tetramethyl-</del> <i>not shown</i>	14.51	97	JN <i>10 5/8/09</i>
16	000874-41-9	Benzene, 1-ethyl-2,4-dimethyl	14.58	100	JN
17	027831-13-6	Benzene, 4-ethenyl-1,2-dime.	14.62	34	JN
18	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	14.67	110	JN
19	002039-90-9	Benzene, 2-ethenyl-1,3-dime.	14.73	59	JN
20	002234-20-0	2,4-Dimethylstyrene	14.79	25	JN
21	017059-52-8	Benzofuran, 7-methyl-	14.88	130	JN
22	000095-93-2	<del>Benzene, 1,2,4,5-tetramethyl-</del> <i>not shown</i>	14.93	68	JN <i>15 5/8/09</i>
23	004265-25-2	Benzofuran, 2-methyl-	14.98	310	JN
24	000824-22-6	<del>1H-Indene, 2,3-dihydro-4-me</del> <i>not shown</i>	15.20	74	JN <i>10 5/8/09</i>
25	000824-22-6	<del>1H-Indene, 2,3-dihydro-4-me</del> <i>not shown</i>	15.33	120	JN <i>10 5/8/09</i>
26	002177-47-1	<del>1-Methylindene (01)</del>	15.39	100	JN
27	002177-47-1	<del>2-Methylindene (02)</del>	15.47	75	JN
28	000275-51-4	Azulene	15.83	530	JN
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A	50	

<sup>1</sup>EPA-designated Registry Number.

000000445

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0642ME

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-03  
 Sample wt/vol: 4.25 (g/mL) g Lab File ID: H6152.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/29/2009  
 % Moisture: not dec. 11.5 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 100 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	11.85	13000	JN
02	000108-67-8	Benzene, 1,3,5-trimethyl-	11.99	18000	JN
03	000611-14-3	Benzene, 1-ethyl-2-methyl-	12.26	3300	JN
04	000098-83-9	.alpha.-Methylstyrene	12.30	3800	JN
05	000526-73-8	Benzene, 1,2,3-trimethyl- (0	12.50	38000	JN
06	000100-80-1	Benzene, 1-ethenyl-3-methyl-	12.58	22000	JN
07	000622-97-9	Benzene, 1-ethenyl-4-methyl-	12.64	6700	JN
08	000271-89-6	Benzofuran	12.78	9100	JN
09	000526-73-8	Benzene, 1,2,3-trimethyl- (0	12.99	13000	JN
10	000637-50-3	Benzene, 1-propenyl-	13.07	3300	JN
11	000496-11-7	Indane	13.20	57000	JN
12	000535-77-3	Benzene, 1-methyl-3-(1-meth.	13.34	8500	JN
13	000095-13-6	Indene	13.42	45000	JN
14	001758-88-9	<del>Benzene, 2-ethyl-1,4-dimethyl-</del> Unknown	13.60	3200	JN
15	000527-84-4	Benzene, 1-methyl-2-(1-meth.	13.63	3500	JN
16	001758-88-9	<del>Benzene, 2-ethyl-1,4-dimethyl-</del> Unknown	13.71	10000	JN
17	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	13.79	6200	JN
18	000768-49-0	Benzene, (2-methyl-1-propen.	13.87	6900	JN
19	017059-52-8	<del>Benzofuran, 7-methyl- (01)</del> Unknown	14.01	5800	JN
20	000095-93-2	Benzene, 1,2,4,5-tetramethyl	14.07	5700	JN
21	017059-52-8	<del>Benzofuran, 7-methyl- (02)</del> Unknown	14.11	18000	JN
22	005379-20-4	Benzene, 1-ethenyl-3,5-dime.	14.23	3900	JN
23	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.34	11000	JN
24	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.47	19000	JN
25	065051-83-4	Benzene, (1-methyl-2-cyclop.	14.53	24000	JN
26	022433-39-2	Benzene, 1-methyl-1,2-propad.	14.62	24000	JN
27	004706-90-5	Benzene, 1,3-dimethyl-5-(1-	14.81	2900	JN
28	000270-82-6	2-Benzothiophene #	15.07	17000	JN
29	004701-36-4	Benzene, (1-ethyl-1-propenyl	15.14	2700	JN
30	000090-12-0	Naphthalene, 1-methyl-	15.81	25000	JN
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000492

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0642MEDL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-03RE1  
 Sample wt/vol: 4.25 (g/mL) g Lab File ID: H6158.D  
 Level: (TRACE or LOW/MED) MED Date Received: 04/29/2009  
 % Moisture: not dec. 11.5 Date Analyzed: 05/07/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 10 (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	11.85	30000	JDN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl- (0-<i>unknown</i>)</del>	11.99	46000	JDN
03	000526-73-8	<del>Benzene, 1,2,3-trimethyl- (0-<i>unknown</i>)</del>	12.49	110000	JDN
04	000100-80-1	Benzene, 1-ethenyl-3-methyl-	12.58	53000	JDN
05	000271-89-6	Benzofuran	12.78	23000	JDN
06	000526-73-8	<del>Benzene, 1,2,3-trimethyl- (0-<i>unknown</i>)</del>	12.98	33000	JDN
07	000496-11-7	Indane	13.19	250000	JDN
08	000933-98-2	Benzene, 1-ethyl-2,3-dimethyl	13.34	21000	JDN
09	000095-13-6	Indene	13.41	390000	JDN
10	000874-41-9	Benzene, 1-ethyl-2,4-dimethyl	13.70	26000	JDN
11		UNKNOWN 12.88	14.11	52000	JD
12	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	14.34	32000	JDN
13	002039-89-6	Benzene, 2-ethenyl-1,4-dime.	14.47	57000	JDN
14	065051-83-4	Benzene, (1-methyl-2-cyclop.	14.52	77000	JDN
15	000612-17-9	1,4-Dihydronaphthalene	14.61	75000	JDN
16	000095-15-8	Benzo[b]thiophene	15.06	87000	JDN
17		UNKNOWN 12.88	15.42	20000	JD
18	000090-12-0	Naphthalene, 1-methyl-	15.94	380000	JDN
19	<del>000092-52-4</del>	<del>Biphenyl</del>	<del>16.31</del>	<del>100000</del>	<del>JDN</del>
20	000939-27-5	Naphthalene, 2-ethyl-	16.44	50000	JDN
21	000581-42-0	Naphthalene, 2,6-dimethyl-	16.52	160000	JDN
22	000582-16-1	Naphthalene, 2,7-dimethyl-	16.62	130000	JDN
23	000575-37-1	Naphthalene, 1,7-dimethyl-	16.64	68000	JDN
24	000581-40-8	Naphthalene, 2,3-dimethyl-	16.78	50000	JDN
25	000259-79-0	Biphenylene	16.96	37000	JDN
26					
27					
28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

000000540

SOM1.2 (8/2007)

1J - FORM I VOA-TIC  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0646

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0635  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-05  
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C8047.D  
 Level: (TRACE or LOW/MED) LOW Date Received: 04/29/2009  
 % Moisture: not dec. Date Analyzed: 05/01/2009  
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000620-14-4	Benzene, 1-ethyl-3-methyl-	12.96	47	JN
02	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0) <i>with out</i>	13.07	34	JN <i>5/20/09</i>
03	000611-14-3	Benzene, 1-ethyl-2-methyl-	13.29	16	JN
04	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0) <i>with out</i>	13.49	110	JN <i>5/20/09</i>
05	000100-80-1	Benzene, 1-ethenyl-3-methyl-	13.56	38	JN
06	000271-89-6	Benzofuran	13.75	50	JN
07	000526-73-8	<del>Benzene, 1,2,3-trimethyl-</del> (0) <i>with out</i>	13.92	40	JN <i>5/20/09</i>
08	000496-11-7	Indane	14.12	380	JN
09	000095-13-6	Indene	14.32	190	JN
10	000535-77-3	Benzene, 1-methyl-3-(1-meth.	14.49	8.5	JN
11	000874-41-9	Benzene, 1-ethyl-2,4-dimethy	14.56	9.8	JN
12	007525-62-4	Benzene, 1-ethenyl-3-ethyl-	14.66	14	JN
13	014371-10-9	Cinnamaldehyde, (E)-	14.87	8.7	JN
14	000104-55-2	2-Propenal, 3-phenyl-	14.97	34	JN
15	000824-22-6	1H-Indene, 2,3-dihydro-4-me.	15.19	19	JN
16	003454-07-7	Benzene, 1-ethenyl-4-ethyl-	15.32	40	JN
17	065051-83-4	Benzene, (1-methyl-2-cyclop.	15.46	9.3	JN
18	000095-15-8	Benzo[b]thiophene	15.92	97	JN
19	000090-12-0	<del>Naphthalene, 1-methyl-</del> (01) <i>with out</i>	16.66	100	JN <i>5/20/09</i>
20	000090-12-0	<del>Naphthalene, 1-methyl-</del> (02) <i>with out</i>	16.81	52	JN <i>5/20/09</i>
21					
22					
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28					
29					
30					
	E966796 <sup>1</sup>	Total Alkanes	N/A		

<sup>1</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0629

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-01  
 Sample wt/vol: 30.5 (g/mL) g Lab File ID: D0595.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 3.3 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/05/2009  
 GPC Cleanup: (Y/N) Y pH: 6.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		<del>UNKNOWN 4.17</del>	<del>1.41</del>	<del>400</del>	<del>J</del>
02	000108-10-1	Methyl Isobutyl Ketone	1.72	940	JN
03		UNKNOWN 4.17	1.82	740	J
04	000544-25-2	1,3,5-Cycloheptatriene	1.90	190	JN
05		UNKNOWN 4.17	2.26	150	J
06	000108-38-3	Benzene, 1,3-dimethyl-	2.75	170	JN
07	000095-93-2	Benzene, 1,2,4,5-tetramethyl	5.29	110	JN
08		UNKNOWN 5.92	6.64	220	J
09	000057-10-3	n-Hexadecanoic acid	12.05	1200	JN
10	002437-79-8	1,1'-Biphenyl, 2,2',4,4'-te.	12.33	150	JN
11	010544-50-0	Cyclic octaatomic sulfur	12.72	390	JN
12		UNKNOWN 10.93	12.98	130	J
13	000057-11-4	Octadecanoic acid	13.30	320	JN
14	041464-51-1	1,1'-Biphenyl, 2,2',3',4,5-	13.46	140	JN
15	031508-00-6	1,1'-Biphenyl, 2,3',4,4',5-	13.52	150	JN
16	031508-00-6	1,1'-Biphenyl, 2,3',4,4',5-	13.64	230	JN
17	001836-75-5	Benzene, 2,4-dichloro-1-(4-	13.81	540	JN
18	038380-01-7	1,1'-Biphenyl, 2,2',4,4',5-	13.96	290	JN
19	041411-62-5	1,1'-Biphenyl, 2,3,3',4,5,6.	14.23	120	JN
20	056558-18-0	1,1'-Biphenyl, 2,3',4,5',6-	14.28	140	JN
21		UNKNOWN 15.13	14.47	120	J
22	032774-16-6	1,1'-Biphenyl, 3,3',4,4',5,	14.57	190	JN
23	038380-08-4	1,1'-Biphenyl, 2,3,3',4,4',.	14.90	120	JN
24		UNKNOWN 17.22	16.44	150	J
25	000205-99-2	Benz[e]acephenanthrylene	16.86	110	JN
26		UNKNOWN 17.22	18.15	130	J
27		UNKNOWN 17.22	18.25	150	J
28	005385-75-1	Dibenz(a,e)aceanthrylene	20.03	140	JN
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	180	

<sup>2</sup>EPA-designated Registry Number.

000001066

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0630

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-02  
 Sample wt/vol: 30.3 (g/mL) g Lab File ID: D0591.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 3.4 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/05/2009  
 GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.16	1.71	1200	J
02		UNKNOWN 4.16	1.81	1300	J
03	014562-09-5	2,4,6-Cycloheptatrien-1-one.	9.87	440	JN
04	000486-25-9	9H-Fluoren-9-one	10.65	980	JN
05	000132-65-0	Dibenzothiophene	10.76	700	JN
06	000085-02-9	Benzo[f]quinoline	11.27	550	JN
07		UNKNOWN 10.93	11.49	850	J
08	000090-44-8	Anthrone	11.60	440	JN
09	000832-69-9	Phenanthrene, 1-methyl-	11.76	1500	JN
10	002531-84-2	Phenanthrene, 2-methyl-	11.80	1600	JN
11	000613-12-7	Anthracene, 2-methyl- (01)	11.85	850	JN
12	000203-64-5	4H-Cyclopenta[def]phenanthre	11.92	2400	JN
13	000613-12-7	Anthracene, 2-methyl- (02)	11.96	960	JN
14	052663-58-8	1,1'-Biphenyl, 2,3,4',6-tet.	12.06	1300	JN
15	000084-65-1	9,10-Anthracenedione	12.26	2900	JN
16	001576-67-6	Phenanthrene, 3,6-dimethyl-	12.54	430	JN
17	003674-65-5	Phenanthrene, 2,3-dimethyl-	12.67	660	JN
18	000781-43-1	9,10-Dimethylanthracene	12.71	760	JN
19		UNKNOWN 10.93	12.76	670	J
20		UNKNOWN 10.93	13.00	1100	J
21	000205-99-2	Benz[e]acephenanthrylene	16.87	1600	JN
22		UNKNOWN 17.24	17.04	940	J
23		UNKNOWN 17.24	17.82	600	J
24	000193-39-5	indeno[1,2,3-cd]fluoranthene	18.45	1500	JN
25	000215-58-7	Benzo[b]triphenylene	18.71	1300	JN
26	000191-26-4	Dibenzo[def,mno]chrysene	18.99	580	JN
27	005385-75-1	<del>Dibenz(a,c)aceanthrylene (01)</del> <i>Unknown</i>	20.05	1400	JN <i>16 5/20/09</i>
28	000848-62-4	Pregnan-20-one, (5.alpha.)-	20.13	950	JN
29	005385-75-1	<del>Dibenz(a,c)aceanthrylene (02)</del> <i>Unknown</i>	20.18	800	JN <i>16 5/20/09</i>
30	000191-07-1	Coronene	20.55	1800	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001123

IK - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0630DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-02RE1  
Sample wt/vol: 30.3 (g/mL) g Lab File ID: D0619.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
% Moisture: 3.4 Decanted: (Y/N) N Date Received: 04/28/2009  
Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000108-10-1	Methyl Isobutyl Ketone	1.70	1000	JDN
02		UNKNOWN 4.14	1.80	1400	JD
03	000486-25-9	9H-Fluoren-9-one	10.62	900	JDN
04	000132-65-0	Dibenzothiophene	10.73	970	JDN
05		UNKNOWN 10.90	11.46	710	JD
06	000832-69-9	Phenanthrene, 1-methyl-	11.72	1300	JDN
07	002531-84-2	<del>Phenanthrene, 2-methyl (01) Unknown</del>	11.76	1800	JDN
08	000610-48-0	Anthracene, 1-methyl-	11.82	1000	JDN
09	000203-64-5	4H-Cyclopenta[def]phenanthre	11.88	2700	JDN
10	002531-84-2	<del>Phenanthrene, 2-methyl (02) Unknown</del>	11.92	820	JDN
11	002437-79-8	1,1-Biphenyl, 2,2,4,4-tetrac	12.03	1100	JDN
12	000084-65-1	9,10-Anthracenedione	12.22	3200	JDN
13	000781-92-0	Anthracene, 1,4-dimethyl-	12.63	820	JDN
14		UNKNOWN 10.90	12.67	790	JD
15		UNKNOWN 10.90	12.71	990	JD
16		UNKNOWN 10.90	12.97	1200	JD
17	000243-17-4	11H-Benzo[b]fluorene	13.72	1300	JDN
18	000479-79-8	<del>11H-Benzo[a]fluoren-11-one Unknown</del>	14.54	1100	JDN
19		UNKNOWN 15.09	14.76	750	JD
20	000479-79-8	<del>11H-Benzo[a]fluoren-11-one Unknown</del>	14.86	820	JDN
21	000205-99-2	Benz[e]acephenanthrylene	16.83	1300	JDN
22		UNKNOWN 17.19	18.41	1100	JD
23		UNKNOWN 17.19	18.67	1100	JD
24	000189-64-0	3,4:8,9-Dibenzopyrene	20.00	1100	JDN
25		UNKNOWN 17.19	20.49	1300	JD
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001181



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0631

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-03  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D0592.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 26.9 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/05/2009  
 GPC Cleanup: (Y/N) Y pH: 5.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	4.52	340	JN
02	000090-12-0	Naphthalene, 1-methyl-	7.16	230	JN
03	000582-16-1	Naphthalene, 2,7-dimethyl-	7.99	340	JN
04	000571-61-9	Naphthalene, 1,5-dimethyl-	8.12	390	JN
05	000575-43-9	Naphthalene, 1,6-dimethyl-	8.15	190	JN
06		UNKNOWN 8.63	9.64	280	J
07	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.93	280	JN
08	010544-50-0	Cyclic octaatomic sulfur	12.75	280	JN
09	000238-84-6	11H-Benzo[a]fluorene	13.60	190	JN
10	000243-17-4	<del>11H-Benzo[b]fluorene (01)</del> <i>Unknown</i>	13.78	580	JN
11	000243-17-4	<del>11H-Benzo[b]fluorene (02)</del> <i>Unknown</i>	13.88	430	JN
12	064401-21-4	<del>Pyrene, 1,3-dimethyl (01)</del> <i>Unknown</i>	14.47	430	JN
13	064401-21-4	<del>Pyrene, 1,3-dimethyl (02)</del> <i>Unknown</i>	14.58	280	JN
14	000243-46-9	Benzo[b]naphtho[2,3-d]thiop.	14.74	200	JN
15		UNKNOWN 15.14	14.80	250	J
16	001705-84-6	Triphenylene, 2-methyl-	15.78	280	JN
17	000205-82-3	Benzo[j]fluoranthene	16.87	2600	JN
18		UNKNOWN 17.24	17.04	1500	J
19	000220-97-3	11H-Indeno[2,1-a]phenanthrene	17.48	2300	JN
20	003343-10-0	Benz[j]aceanthrylene, 3-met.	17.73	1100	JN
21		UNKNOWN 17.24	17.82	1500	J
22		UNKNOWN 17.24	18.35	1500	J
23	000191-24-2	indeno[1,2,3-cd]fluoranthene	18.45	1500	JN
24	000215-58-7	Benzo[b]triphenylene	18.71	1900	JN
25	000213-46-7	1,2:7,8-Dibenzophenanthrene	18.74	580	JN
26	000191-26-4	Dibenzo[def,mno]chrysene	18.35	2600	JN
27	000192-65-4	1,2:4,5-Dibenzopyrene	20.05	1500	JN
28	000189-64-0	3,4:8,9-Dibenzopyrene	20.13	1500	JN
29	000848-62-4	<del>Pregnane-20-one, (5.alpha.)</del> <i>Unknown</i>	20.18	1100	JN
30	000848-62-4	<del>Pregnane-20-one, (5.alpha.)</del> <i>Unknown</i>	20.56	1400	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001233

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0631DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-03RE1  
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D0620.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 26.9 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 5.3 Dilution Factor: 20.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	4.50	4100	JDN
02	000090-12-0	Naphthalene, 1-methyl-	7.13	2700	JDN
03	000582-16-1	Naphthalene, 2,7-dimethyl-	7.96	5300	JDN
04	000581-40-8	Naphthalene, 2,3-dimethyl-	8.08	6300	JDN
05	000581-42-0	Naphthalene, 2,6-dimethyl-	8.12	2700	JDN
06	000571-58-4	Naphthalene, 1,4-dimethyl-	8.26	2500	JDN
07		UNKNOWN 8.60	9.30	2800	JD
08		UNKNOWN 8.60	9.61	3500	JD
09	007320-53-8	<del>Dibenzofuran, 4-methyl (01)</del> <i>not known</i>	9.73	3600	JDN
10	007320-53-8	<del>Dibenzofuran, 4-methyl (02)</del> <i>not known</i>	9.83	3400	JDN
11	001430-97-3	9H-Fluorene, 2-methyl-	10.33	3500	JDN
12	001730-37-6	9H-Fluorene, 1-methyl-	10.38	2200	JDN
13	000132-65-0	Dibenzothiophene	10.73	5500	JDN
14		UNKNOWN 10.90	11.44	3200	JD
15	002531-84-2	Phenanthrene, 2-methyl-	11.72	6900	JDN
16	000613-12-7	Anthracene, 2-methyl-	11.76	7900	JDN
17	000779-02-2	Anthracene, 9-methyl-	11.82	4200	JDN
18	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.88	13000	JDN
19	000610-48-0	Anthracene, 1-methyl-	11.92	3800	JDN
20	035465-71-5	2-Phenylnaphthalene	12.21	4400	JDN
21		UNKNOWN 10.90	12.51	4700	JD
22	003674-66-6	Phenanthrene, 2,5-dimethyl-	12.63	3400	JDN
23	010544-50-0	Cyclic octaatomic sulfur	12.69	15000	JDN
24		UNKNOWN 10.90	12.97	4600	JD
25	000238-84-6	11H-Benzo[a]fluorene	13.73	5000	JDN
26	000243-17-4	11H-Benzo[b]fluorene	13.83	3500	JDN
27		UNKNOWN 15.09	14.53	2000	JD
28	002498-77-3	Benz[a]anthracene, 1-methyl-	15.74	2300	JDN
29	<del>000207-08-9</del>	<del>Benzo[k]fluoranthene</del>	<del>16.83</del>	<del>2700</del>	<del>JDN</del>
30	000220-97-3	11H-Indeno[2,1-a]phenanthrene	17.44	2700	JDN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001293

SOM01.2 (8/2007)

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0632

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-04  
 Sample wt/vol: 30.9 (g/mL) g Lab File ID: D0594.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 2.9 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/05/2009  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		<del>UNKNOWN 4.16</del>	<del>1.41</del>	<del>830</del>	<del>J</del>
02		UNKNOWN 4.16	1.82	700	J
03		UNKNOWN 4.16	2.03	100	J
04		UNKNOWN 4.16	2.27	170	J
05		UNKNOWN 4.16	2.57	100	J
06	000120-61-6	1,4-Benzenedicarboxylic aci.	8.76	140	JN
07		UNKNOWN 10.93	11.49	110	J
08	038444-85-8	1,1'-Biphenyl, 2,3,4'-Trich.	11.58	150	JN
09	033948-22-0	5H-Dibenz[b,f]azepine-5-car.	11.75	210	JN
10	002531-84-2	Phenanthrene, 2-methyl-	11.79	97	JN
11		UNKNOWN 10.93	11.91	170	J
12	000057-10-3	n-Hexadecanoic acid	12.05	1100	JN
13	032598-13-3	1,1'-Biphenyl, 3,3',4,4'-te.	12.16	140	JN
14	000084-65-1	9,10-Anthracenedione	12.25	190	JN
15	002437-79-8	1,1'-Biphenyl, 2,2',4,4'-te.	12.33	260	JN
16	035693-99-3	1,1'-Biphenyl, 2,2',5,5'-te.	12.38	120	JN
17	032598-13-3	1,1'-Biphenyl, 3,3',4,4'-te.	12.49	250	JN
18	041464-42-0	1,1'-Biphenyl, 2,3',5,5'-te.	12.78	110	JN
19		UNKNOWN 10.93	12.99	210	J
20	000057-11-4	Octadecanoic acid	13.30	190	JN
21	003442-78-2	Pyrene, 2-methyl-	13.76	97	JN
22	000479-79-8	11H-Benzo[a]fluoren-11-one	14.57	96	JN
23	000205-99-2	Benz[e]acephenanthrylene	16.86	220	JN
24	002425-85-6	2-Naphthalenol, 1-[(4-methy.	18.31	1200	JN
25		UNKNOWN 17.22	18.44	290	J
26	000192-65-4	1,2:4,5-Dibenzopyrene	20.03	270	JN
27		UNKNOWN 17.22	20.53	170	J
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	190	

<sup>2</sup>EPA-designated Registry Number.

000001350

SOM01.2 (8/2007)

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0632DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:            SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-04RE1  
 Sample wt/vol: 30.9 (g/mL) g Lab File ID: D0618.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 2.9 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 5.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.14	1.80	890	JD
02	052663-58-8	1,1-Biphenyl, 2,3,4,6-tetrac	12.02	660	JDN
03	002425-85-6	2-Naphthalenol, 1-[(4-methyl	18.27	1100	JDN
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001407

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0633

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-05  
 Sample wt/vol: 30.7 (g/mL) g Lab File ID: D0593.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
 % Moisture: 16.3 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/05/2009  
 GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.17	1.41	460	J
02		UNKNOWN 4.17	1.82	1000	J
03	002444-68-0	Anthracene, 9-ethenyl-	11.49	450	JN
04	002531-84-2	Phenanthrene, 2-methyl-	11.75	530	JN
05	000610-48-0	<del>Anthracene, 1-methyl-</del> (01) <i>Unknown</i>	11.79	640	JN <i>W 5/2/09</i>
06	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.91	1200	JN
07	000610-48-0	<del>Anthracene, 1-methyl-</del> (02) <i>Unknown</i>	11.95	450	JN <i>W 5/2/09</i>
08	000057-10-3	n-Hexadecanoic acid	12.05	330	JN
09	000084-65-1	9,10-Anthracenedione	12.25	1300	JN
10	003674-66-6	Phenanthrene, 2,5-dimethyl-	12.66	390	JN
11		UNKNOWN 10.93	12.70	460	J
12	005737-13-3	Cyclopenta(def)phenanthrenon	12.75	450	JN
13		UNKNOWN 10.93	13.00	590	J
14	000243-17-4	11H-Benzo[b]fluorene	13.77	300	JN
15	001090-13-7	5,12-Naphthacenedione	16.26	530	JN
16	000205-99-2	Benz[e]acephenanthrylene	16.87	1100	JN
17		UNKNOWN 17.23	17.04	870	J
18	000220-97-3	11H-Indeno[2,1-a]phenanthren	17.48	450	JN
19		UNKNOWN 17.23	17.73	380	J
20		UNKNOWN 17.23	17.81	520	J
21	000193-39-5	indeno[1,2,3-cd]fluoranthene	18.45	1200	JN
22	000213-46-7	1,2:7,8-Dibenzophenanthrene	18.70	740	JN
23	000215-58-7	Benzo[b]triphenylene	18.74	520	JN
24	000191-24-2	Dibenzo[def,mno]chrysene	18.99	610	JN
25		UNKNOWN 17.23	19.32	290	J
26	000189-55-9	3,4:9,10-Dibenzopyrene	20.05	1300	JN
27	000192-65-4	1,2:4,5-Dibenzopyrene	20.13	950	JN
28	1000110-40-2	1-(2-Aminobenzylidene)-1,2,.	20.17	900	JN
29	000191-07-1	<del>Coronene (01)</del> <i>Unknown</i>	20.26	580	JN <i>W 5/2/09</i>
30	000191-07-1	<del>Coronene (02)</del> <i>Unknown</i>	20.55	980	JN <i>W 5/2/09</i>
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001435

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0633DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-05RE1  
Sample wt/vol: 30.7 (g/mL) g Lab File ID: D0617.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC  
% Moisture: 16.3 Decanted: (Y/N) N Date Received: 04/28/2009  
Concentrated Extract Volume: 500 (uL) Date Extracted: 04/29/2009  
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 5.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	001569-50-2	3-Penten-2-ol	1.39	3000	JDN
02		UNKNOWN 4.14	1.80	1100	JD
03	002531-84-2	Phenanthrene, 2-methyl-	11.72	490	JDN
04	000610-48-0	Anthracene, 1-methyl-	11.76	570	JDN
05		UNKNOWN 10.90	11.88	1200	JD
06	000084-65-1	9,10-Anthracenedione	12.22	1200	JDN
07	003674-66-6	Phenanthrene, 2,5-dimethyl-	12.63	460	JDN
08	005737-13-3	Cyclopenta(def)phenanthrenon	12.71	420	JDN
09		UNKNOWN 10.90	12.97	590	JD
10	033543-31-6	Fluoranthene, 2-methyl-	13.72	850	JDN
11	000479-79-8	11H-Benzo[a]fluoren-11-one	14.54	580	JDN
12	000243-46-9	Benzo[b]naphtho[2,3-d]thioph	14.70	440	JDN
13		UNKNOWN 15.09	14.76	540	JD
14	001705-84-6	Triphenylene, 2-methyl-	15.74	540	JDN
15		UNKNOWN 17.19	16.23	410	JD
16	000050-32-8	Benzo[a]pyrene	16.83	1100	JDN
17		UNKNOWN 17.19	17.00	880	JD
18		UNKNOWN 17.19	17.44	490	JD
19		UNKNOWN 17.19	17.77	560	JD
20		UNKNOWN 17.19	18.41	940	JD
21		UNKNOWN 17.19	18.66	490	JD
22		UNKNOWN 17.19	18.70	490	JD
23	000193-39-5	Indeno[1,2,3-cd]pyrene (02)	18.94	410	JDN
24	000192-65-4	1,2:4,5-Dibenzopyrene	19.99	1100	JDN
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001493

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0634

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-06  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0732.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 19.5 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 05/02/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/09/2009  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.06	2.01	6000	J
02		UNKNOWN 4.06	2.27	5300	J
03	000090-12-0	Naphthalene, 1-methyl-	7.04	13000	JN
04	000575-43-9	Naphthalene, 1,6-dimethyl-	7.87	9500	JN
05	000575-37-1	Naphthalene, 1,7-dimethyl-	8.00	12000	JN
06	000582-16-1	Naphthalene, 2,7-dimethyl-	8.02	5700	JN
07	002245-38-7	Naphthalene, 1,6,7-trimethyl	9.06	5600	JN
08	000829-26-5	Naphthalene, 2,3,6-trimethyl	9.19	8000	JN
09	001855-47-6	1-Isopropenyl-naphthalene	9.46	6600	JN
10	002523-37-7	9H-Fluorene, 9-methyl-	9.51	28000	JN
11	007320-53-8	<del>Dibenzofuran, 4-methyl- (01)</del> <i>unknown</i>	9.65	21000	JN
12	007320-53-8	<del>Dibenzofuran, 4-methyl- (02)</del> <i>unknown</i>	9.75	29000	JN
13	003218-36-8	[1,1'-Biphenyl]-4-carboxald.	9.83	8400	JN
14	019540-84-2	4a,9a-Methano-9H-fluorene	10.07	12000	JN
15	001430-97-3	<del>9H-Fluorene, 2-methyl- (01)</del> <i>unknown</i>	10.24	17000	JN
16	001730-37-6	9H-Fluorene, 1-methyl-	10.29	7200	JN
17	001430-97-3	<del>9H-Fluorene, 2-methyl- (02)</del> <i>unknown</i>	10.37	6200	JN
18		UNKNOWN 10.81	10.48	6900	J
19		UNKNOWN 10.81	10.53	9000	J
20	000132-65-0	Dibenzothiophene	10.64	28000	JN
21	002444-68-0	Anthracene, 9-ethenyl-	11.36	10000	JN
22	002531-84-2	<del>Phenanthrene, 2-methyl- (01)</del> <i>unknown</i>	11.62	19000	JN
23	002531-84-2	<del>Phenanthrene, 2-methyl- (02)</del> <i>unknown</i>	11.66	23000	JN
24	002531-84-2	<del>Phenanthrene, 2-methyl- (03)</del> <i>unknown</i>	11.73	8900	JN
25	000203-64-5	4H-Cyclopenta[def]phenanthre	11.79	31000	JN
26	000610-48-0	Anthracene, 1-methyl-	11.83	6700	JN
27	000612-94-2	Naphthalene, 2-phenyl-	12.12	14000	JN
28	010544-50-0	Cyclic octaatomic sulfur	12.59	8400	JN
29	000243-17-4	<del>11H-Benzo[b]fluorene (01)</del> <i>unknown</i>	13.63	8600	JN
30	000243-17-4	<del>11H-Benzo[b]fluorene (02)</del> <i>unknown</i>	13.73	5300	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001542

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0634DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010225-06RE1  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0737.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 19.5 Decanted: (Y/N) N Date Received: 04/28/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 05/02/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/09/2009  
 GPC Cleanup: (Y/N) Y pH: 6.4 Dilution Factor: 5.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000581-40-8	Naphthalene, 2,3-dimethyl-	7.99	12000	JDN
02		UNKNOWN 8.51	9.50	26000	JD
03	007320-53-8	<del>Dibenzofuran, 4-methyl- (01)</del> <i>Unknown</i>	9.64	26000	JDN <i>9/16 5/20/09</i>
04	007320-53-8	<del>Dibenzofuran, 4-methyl- (02)</del> <i>Unknown</i>	9.74	26000	JDN <i>9/16 5/20/09</i>
05	001730-37-6	9H-Fluorene, 1-methyl-	10.24	16000	JDN
06	000132-65-0	Dibenzothiophene	10.64	25000	JDN
07	000610-48-0	<del>Anthracene, 1-methyl- (01)</del> <i>Unknown</i>	11.62	16000	JDN <i>9/16 5/20/09</i>
08	000610-48-0	<del>Anthracene, 1-methyl- (02)</del> <i>Unknown</i>	11.66	26000	JDN <i>9/16 5/20/09</i>
09	000203-64-5	4H-Cyclopenta[def]phenanthre	11.79	30000	JDN
10	003442-78-2	Pyrene, 2-methyl-	13.63	13000	JDN
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001601



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0640

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-01  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0613.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 11.7 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 6.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.14	1.39	25000	J
02		UNKNOWN 4.14	1.79	20000	J
03	000090-12-0	Naphthalene, 1-methyl-	7.13	58000	JN
04	000581-42-0	Naphthalene, 2,6-dimethyl-	7.95	31000	JN
05	000581-40-8	Naphthalene, 2,3-dimethyl-	8.08	36000	JN
06	007320-53-8	Dibenzofuran, 4-methyl-	9.83	20000	JN
07	000132-65-0	Dibenzothiophene	10.73	32000	JN
08	002444-68-0	Anthracene, 9-ethenyl-	11.46	22000	JN
09	000613-12-7	Anthracene, 2-methyl-	11.72	39000	JN
10	002531-84-2	<del>Phenanthrene, 2-methyl- (01)</del> <i>unknown</i>	11.76	50000	JN
11	002531-84-2	<del>Phenanthrene, 2-methyl- (02)</del> <i>unknown</i>	11.82	23000	JN
12		UNKNOWN 10.90	11.88	79000	J
13	000832-69-9	Phenanthrene, 1-methyl-	11.92	23000	JN
14		UNKNOWN 10.90	12.22	44000	J
15	003674-66-6	Phenanthrene, 2,5-dimethyl-	12.63	18000	JN
16		UNKNOWN 10.90	12.67	23000	J
17		UNKNOWN 10.90	12.97	31000	J
18	000192-97-2	Benzo[e]pyrene	16.84	43000	JN
19	033770-34-2	1,2,3,4-Tetrahydroisoquinoli	17.00	30000	JN
20		UNKNOWN 17.20	17.59	20000	J
21		UNKNOWN 17.20	17.78	18000	J
22	1000294-14-8	Benzoxazole, 2-[2-(4-piperid	18.32	29000	JN
23		UNKNOWN 17.20	18.41	38000	J
24	000215-58-7	Benzo[b]triphenylene	18.67	24000	JN
25	000213-46-7	1,2:7,8-Dibenzophenanthrene	18.71	22000	JN
26	000191-26-4	Dibenzo[def,mno]chrysene (02	18.95	25000	JN
27	000189-64-0	3,4:8,9-Dibenzopyrene	20.01	41000	JN
28	000192-65-4	1,2:4,5-Dibenzopyrene	20.09	25000	JN
29	1000110-40-2	1-(2-Aminobenzylidene)-1,2,3	20.14	23000	JN
30	000191-07-1	Coronene	20.50	50000	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001634

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0640DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-01RE1  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0616.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 11.7 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 6.3 Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.14	1.39	270000	JD
02		UNKNOWN 4.14	1.80	37000	JD
03		UNKNOWN 4.14	2.07	38000	JD
04		UNKNOWN 4.14	2.33	36000	JD
05	000090-12-0	Napthalene, 1-methyl-	7.13	65000	JDN
06	000581-42-0	Napthalene, 2,6-dimethyl-	7.96	28000	JDN
07	000575-41-7	Napthalene, 1,3-dimethyl-	8.08	33000	JDN
08	001689-64-1	9H-Fluoren-9-ol	9.83	21000	JDN
09	000132-65-0	Dibenzothiophene	10.73	27000	JDN
10	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl- (01)</del>	11.72	36000	JDN
11	<del>002531-84-2</del>	<del>Phenanthrene, 2-methyl- (02)</del>	11.76	48000	JDN
12	000613-12-7	Anthracene, 2-methyl-	11.82	22000	JDN
13	000203-64-5	4H-Cyclopenta[def]phenanthre	11.88	79000	JDN
14	000779-02-2	Anthracene, 9-methyl-	11.92	21000	JDN
15		UNKNOWN 10.90	12.00	340000000	JD
16		UNKNOWN 10.90	12.21	41000	JD
17	000781-43-1	9,10-Dimethylanthracene	12.63	20000	JDN
18	000238-84-6	11H-Benzo[a]fluorene	13.73	35000	JDN
19	002498-77-3	Benz[a]anthracene, 1-methyl-	15.74	23000	JDN
20	<del>000207-08-9</del>	<del>Benzo[k]fluoranthene</del>	<del>16.83</del>	<del>33000</del>	JDN
21		UNKNOWN 17.19	16.99	26000	JD
22		UNKNOWN 17.19	18.31	20000	JD
23		UNKNOWN 17.19	18.41	32000	JD
24	000189-55-9	3,4:9,10-Dibenzopyrene	20.00	26000	JDN
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001694

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0641

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-02  
 Sample wt/vol: 1.40 (g/mL) g Lab File ID: D0614.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 20.5 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000095-13-6	Indene	4.50	180000	JN
02	000581-42-0	Naphthalene, 2,6-dimethyl-	7.95	440000	JN
03	000575-41-7	Naphthalene, 1,3-dimethyl-	8.08	480000	JN
04	000582-16-1	Naphthalene, 2,7-dimethyl-	8.12	190000	JN
05	000581-40-8	Naphthalene, 2,3-dimethyl-	8.26	210000	JN
06		UNKNOWN 8.60	9.29	180000	J
07		UNKNOWN 8.60	9.61	250000	J
08		UNKNOWN 8.60	9.65	120000	J
09	007320-53-8	Dibenzofuran, 4-methyl-	9.73	290000	JN
10	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.88	33000	JN
11	000243-17-4	11H-Benzo[b]fluorene	13.74	68000	JN
12	033543-31-6	Fluoranthene, 2-methyl-	13.84	63000	JN
13	000239-01-0	11H-Benzo[a]carbazole	15.41	65000	JN
14	001705-84-6	Triphenylene, 2-methyl-	15.74	35000	JN
15	000205-99-2	Benz[e]acephenanthrylene	16.83	260000	JN
16		UNKNOWN 17.20	17.00	190000	J
17	000192-97-2	Benzo[e]pyrene	17.06	490000	JN
18	000239-85-0	13H-Dibenzo[a,h]fluorene	17.44	240000	JN
19	003343-10-0	Benz[j]aceanthrylene, 3-meth	17.70	78000	JN
20		UNKNOWN 17.20	17.78	110000	J
21		UNKNOWN 17.20	18.31	110000	J
22		UNKNOWN 17.20	18.41	190000	J
23	000213-46-7	1,2:7,8-Dibenzophenanthrene	18.67	150000	JN
24	000215-58-7	Benzo[b]triphenylene	18.70	100000	JN
25	<del>000191-24-2</del>	<del>Benzo[ghi]perylene</del>	<del>18.95</del>	<del>230000</del>	<del>JN</del>
26	005385-75-1	Dibenz(a,e)aceanthrylene (01)	20.00	190000	JN
27	000189-64-0	3,4:8,9-Dibenzopyrene	20.09	140000	JN
28	005385-75-1	Dibenz(a,e)aceanthrylene (02)	20.13	110000	JN
29	000192-65-4	<del>1,2:4,5-Dibenzopyrene (01)</del>	20.49	130000	JN
30	000192-65-4	<del>1,2:4,5-Dibenzopyrene (02)</del>	20.61	76000	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001746

SOM01.2 (8/2007)

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0641DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-02RE1  
 Sample wt/vol: 1.40 (g/mL) g Lab File ID: D0647.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 20.5 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/07/2009  
 GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 500.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000091-57-6	Napthalene, 1-methyl-	7.13	1500000	JDN
02		UNKNOWN 5.89	11.88	1400000	JD
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001805

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0642

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-03  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0629.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 11.5 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 5.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	001569-50-2	3-Penten-2-ol	1.39	14000	JN
02	000496-11-7	Indane	4.41	19000	JN
03	000095-13-6	Indene	4.50	9300	JN
04	001127-76-0	Naphthalene, 1-ethyl-	7.86	19000	JN
05	000582-16-1	Naphthalene, 2,7-dimethyl-	7.96	73000	JN
06	000581-40-8	Naphthalene, 2,3-dimethyl-	8.08	87000	JN
07	000581-42-0	Naphthalene, 2,6-dimethyl-	8.11	34000	JN
08	000575-41-7	Naphthalene, 1,3-dimethyl-	8.26	32000	JN
09	002131-42-2	Naphthalene, 1,4,6-trimethyl	9.14	17000	JN
10		UNKNOWN 8.60	9.29	27000	J
11		UNKNOWN 8.60	9.60	36000	J
12	007320-53-8	Dibenzofuran, 4-methyl-	9.73	40000	JN
13	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.88	3800	JN
14	000243-17-4	11H-Benzo[b]fluorene	13.74	9800	JN
15	033543-31-6	Fluoranthene, 2-methyl-	13.84	7800	JN
16		UNKNOWN 15.10	14.76	3800	J
17		UNKNOWN 17.20	16.23	12000	J
18	000205-82-3	Benzo[j]fluoranthene	16.83	28000	JN
19		UNKNOWN 17.20	17.00	19000	J
20	000239-85-0	13H-Dibenzo[a,h]fluorene	17.44	24000	JN
21		UNKNOWN 17.20	17.69	12000	J
22		UNKNOWN 17.20	17.78	13000	J
23		UNKNOWN 17.20	18.31	12000	J
24	<del>000193-39-5</del>	<del>Indeno[1,2,3-cd]pyrene</del>	<del>18.41</del>	<del>20000</del>	<del>JN</del>
25	000213-46-7	1,2:7,8-Dibenzophenanthrene	18.67	21000	JN
26	000191-26-4	Dibenzo[def,mno]chrysene	18.95	21000	JN
27	000192-65-4	1,2:4,5-Dibenzopyrene	20.00	20000	JN
28	000189-64-0	<del>3,4:8,9-Dibenzopyrene (01)</del> <i>UNKNOWN</i>	20.08	14000	JN
29	000189-64-0	<del>3,4:8,9-Dibenzopyrene (02)</del> <i>UNKNOWN</i>	20.13	10000	JN
30	000191-07-1	Coronene	20.49	31000	JN
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001830

SOM01.2 (8/2007)

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0642DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0629  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010228-03RE1  
 Sample wt/vol: 1.20 (g/mL) g Lab File ID: D0630.D  
 Level: (TRACE or LOW/MED) MED Extraction: (Type) SONC  
 % Moisture: 11.5 Decanted: (Y/N) N Date Received: 04/29/2009  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) Y pH: 5.3 Dilution Factor: 20.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.14	4.41	63000	JD
02	000090-12-0	Naphthalene, 1-methyl-	7.13	170000	JDN
03	000581-42-0	Naphthalene, 2,6-dimethyl-	7.95	65000	JDN
04	000581-40-8	Naphthalene, 2,3-dimethyl-	8.08	76000	JDN
05	000132-65-0	Dibenzothiophene	10.73	51000	JDN
06	000610-48-0	Anthracene, 1-methyl-	11.72	49000	JDN
07	002531-84-2	Phenanthrene, 2-methyl-	11.76	58000	JDN
08	000203-64-5	4H-Cyclopenta[def]phenanthre	11.88	100000	JDN
09	000243-17-4	11H-Benzo[b]fluorene	13.72	54000	JDN
10	000238-84-6	11H-Benzo[a]fluorene	13.83	46000	JDN
11					
12					
13					
14					
15					
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17					
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19					
20					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

000001887

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0639 *Field blank*

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0635  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-01  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D0580.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 04/29/2009  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/02/2009  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		<del>UNKNOWN 4.17</del>	<del>1.41</del>	<del>12</del>	<del>J</del>
02		<del>UNKNOWN 4.17</del>	<del>1.96</del>	<del>3.8</del>	<del>J</del>
03		<del>UNKNOWN 4.17</del>	<del>2.09</del>	<del>8.7</del>	<del>J</del>
04		UNKNOWN 4.17	2.23	14	J
05		UNKNOWN 4.17	2.26	29	J
06		<del>UNKNOWN 4.17</del>	<del>2.35</del>	<del>6.4</del>	<del>J</del>
07	082304-66-3	7,9-Di-tert-butyl-1-oxaspir.	11.85	3.7	JN
08		UNKNOWN 10.93	12.05	2.5	J
09		UNKNOWN 15.13	13.30	3.3	J
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

*15 MB 5/10/09*  
*15 MB 5/10/09*

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0644

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0635  
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-03  
Sample wt/vol: 1000 (g/mL) mL Lab File ID: D0579.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
% Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 04/29/2009  
Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/02/2009  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.17	1.41	18	J
02		UNKNOWN 4.17	1.96	4.6	J
03		UNKNOWN 4.17	2.09	20	J
04		UNKNOWN 4.17	2.27	5.5	J
05		UNKNOWN 4.17	2.35	17	J
06	000057-10-3	n-Hexadecanoic acid	12.04	2.2	JN
07	000057-11-4	Octadecanoic acid	13.30	2.4	JN
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

*J* 5/20/09  
*W* 5/20/09

<sup>2</sup>EPA-designated Registry Number.



1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
C0645

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0635  
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-04  
Sample wt/vol: 1000 (g/mL) mL Lab File ID: D0578.D  
Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
% Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 04/29/2009  
Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/02/2009  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0  
CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>UNKNOWN 4.17</del>	<del>1.41</del>	<del>19</del>	<del>J</del>
02	<del>UNKNOWN 4.17</del>	<del>1.96</del>	<del>4.7</del>	<del>J</del>
03	<del>UNKNOWN 4.17</del>	<del>2.09</del>	<del>53</del>	<del>J</del>
04	UNKNOWN 4.17	2.27	8.4	J
05	000057-10-3 n-Hexadecanoic acid	12.05	2.9	JN
06	UNKNOWN 10.93	12.72	2.1	J
07	000057-11-4 Octadecanoic acid	13.30	3.3	JN
08	UNKNOWN 17.22	16.86	2.2	J
09				
10				
11				
12				
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27				
28				
29				
30				
E966796 <sup>2</sup>	Total Alkanes	N/A	51	

*Handwritten:* S/S 5/10/09

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0646

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.: \_\_\_\_\_ SDG No.: C0635  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-05  
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D0577.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture: \_\_\_\_\_ Decanted: (Y/N) \_\_\_\_\_ Date Received: 04/29/2009  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/02/2009  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.17	2.09	45	J
02		UNKNOWN 4.17	2.35	45	J
03		UNKNOWN	4.00	21	J
04	000271-89-6	Benzofuran	4.03	20	JN
05	000496-11-7	Indane	4.44	44	JN
06	000095-13-6	Indene	4.53	160	JN
07	000575-43-9	Naphthalene, 1,6-dimethyl-	7.99	15	JN
08	000581-40-8	Naphthalene, 2,3-dimethyl-	8.11	20	JN
09	000086-53-3	1-Naphthalenecarbonitrile	8.77	14	JN
10	000090-15-3	1-Naphthalenol	8.84	29	JN
11	001914-58-5	trans-4-Phenyl-3-butenic ac	9.16	13	JN
12		UNKNOWN 8.63	9.74	15	J
13	000059-31-4	2(lH)-Quinolinone	10.30	4.6	JN
14		UNKNOWN 10.93	10.34	4.6	J
15	000606-41-7	1-Naphthalenol, 2-amino-	10.62	4.1	JN
16		UNKNOWN 10.93	11.47	4.2	J
17		UNKNOWN 10.93	11.79	4.7	J
18		UNKNOWN 10.93	11.92	8.1	J
19	010544-50-0	Cyclic octaatomic sulfur	12.73	7.0	JN
20	1000143-61-3	N-(4-Methoxyphenyl)-2-hydro.	13.30	4.4	JN
21	001210-12-4	9-Anthracenecarbonitrile	13.46	4.7	JN
22	004269-15-2	4-Amino-9-fluorenone	13.75	16	JN
23		UNKNOWN 15.13	13.86	4.7	J
24		UNKNOWN 15.13	14.46	3.9	J
25		UNKNOWN 15.13	14.79	3.9	J
26	064884-40-8	5(4H)-Thebenidinone	15.66	5.6	JN
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0646DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0635  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-05RE1  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D0622.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 04/29/2009  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/06/2009  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 50.0  
 CONCENTRATION UNITS: (ug/L or ug/kg)          ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 4.14	2.07	220	JD
02		UNKNOWN 4.14	2.33	160	JD
03	000496-11-7	Indane	4.41	130	JDN
04	000095-13-6	Indene	4.50	510	JDN
05					
06					
07					
08					
09					
10					
11					
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24					
25					
26					
27					
28					
29					
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

1K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0647 *Disinfectant*

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036  
 Lab Code: A4 Case No.: 38495 Mod. Ref No.:          SDG No.: C0635  
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010229-06  
 Sample wt/vol: 1000 (g/mL)          mL Lab File ID: D0581.D  
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT  
 % Moisture:          Decanted: (Y/N)          Date Received: 04/29/2009  
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 04/30/2009  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 05/02/2009  
 GPC Cleanup: (Y/N) N pH:          Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	<del>UNKNOWN 4.17</del>	<del>1.41</del>	<del>3.9</del>	<del>N</del>
02	UNKNOWN 4.17	1.94	3.1	J
03	<del>UNKNOWN 4.17</del>	<del>2.09</del>	<del>8.1</del>	<del>J</del>
04	UNKNOWN 4.17	2.24	9.5	J
05	UNKNOWN 4.17	2.26	18	J
06	<del>UNKNOWN 4.17</del>	<del>2.35</del>	<del>6.5</del>	<del>J</del>
07	UNKNOWN 10.93	11.85	3.5	J
08	UNKNOWN 10.93	12.04	2.8	J
09	UNKNOWN 15.13	13.30	2.7	J
10				
11				
12				
13				
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19				
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21				
22				
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24				
25				
26				
27				
28				
29				
30				
E966796 <sup>2</sup>	Total Alkanes	N/A		

*Handwritten notes:*  
 5/30/09  
 5/30/09  
 5/30/09

<sup>2</sup>EPA-designated Registry Number.

## **APPENDIX E**

### Laboratory Reports – 2017 Interior Soil Samples

October 11, 2017

Mr. John Thatcher  
BL Companies  
4242 Carlisle Pike  
Camp Hill, PA 17011

RE: Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Dear Mr. Thatcher:

Enclosed are the analytical results for sample(s) received by the laboratory on September 20, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Mr. Mike Beardsley, BL Companies  
Kellen Bullock, BL Companies  
Mr. Rob Good, BL Companies  
Mr. Joseph Kempf, BL Companies  
Mr. Randy Shick, BL Companies  
Mr. Ken Yoder, BL Companies



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

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### Pennsylvania Certification IDs

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

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana 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 #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

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

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

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 Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-1@6"      **Lab ID:** 30230600001      Collected: 09/19/17 09:15      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>10100</b>	mg/kg	10.6	1	09/25/17 08:37	09/26/17 08:25	7429-90-5	
Antimony	<b>13.9</b>	mg/kg	0.64	1	09/25/17 08:37	09/26/17 08:25	7440-36-0	
Arsenic	<b>15.4</b>	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:25	7440-38-2	
Barium	<b>735</b>	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:25	7440-39-3	
Beryllium	<b>11.3</b>	mg/kg	0.21	1	09/25/17 08:37	09/26/17 08:25	7440-41-7	
Boron	<b>215</b>	mg/kg	5.3	1	09/25/17 08:37	09/26/17 08:25	7440-42-8	
Cadmium	<b>6.3</b>	mg/kg	0.32	1	09/25/17 08:37	09/26/17 08:25	7440-43-9	
Calcium	<b>26000</b>	mg/kg	213	1	09/25/17 08:37	09/26/17 08:25	7440-70-2	
Chromium	<b>190</b>	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:25	7440-47-3	
Cobalt	<b>50.5</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:25	7440-48-4	
Copper	<b>910</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:25	7440-50-8	
Iron	<b>38500</b>	mg/kg	10.6	1	09/25/17 08:37	09/26/17 08:25	7439-89-6	
Lead	<b>2230</b>	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:25	7439-92-1	
Magnesium	<b>11700</b>	mg/kg	53.2	1	09/25/17 08:37	09/26/17 08:25	7439-95-4	
Manganese	<b>628</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:25	7439-96-5	
Molybdenum	<b>29.8</b>	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:25	7439-98-7	
Nickel	<b>98.3</b>	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:25	7440-02-0	
Potassium	<b>1180</b>	mg/kg	53.2	1	09/25/17 08:37	09/26/17 08:25	7440-09-7	
Selenium	<b>3.2</b>	mg/kg	0.85	1	09/25/17 08:37	09/26/17 08:25	7782-49-2	
Silver	<b>0.90</b>	mg/kg	0.64	1	09/25/17 08:37	09/26/17 08:25	7440-22-4	
Sodium	<b>734</b>	mg/kg	532	1	09/25/17 08:37	09/26/17 08:25	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:25	7440-28-0	
Vanadium	<b>42.8</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:25	7440-62-2	
Zinc	<b>4070</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:25	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	<b>0.89</b>	mg/kg	0.11	1	09/25/17 10:13	09/25/17 18:36	7439-97-6	MH
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	83-32-9	
Acenaphthylene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	208-96-8	
Anthracene	<b>1.7</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	120-12-7	M1, ML
Benzo(a)anthracene	<b>2.7</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	56-55-3	
Benzo(a)pyrene	<b>3.0</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	50-32-8	IS
Benzo(b)fluoranthene	<b>3.8</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	205-99-2	IS
Benzo(g,h,i)perylene	<b>1.8</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	191-24-2	M1, ML
Benzo(k)fluoranthene	<b>4.5</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	100-51-6	R1
4-Bromophenylphenyl ether	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	101-55-3	
Butylbenzylphthalate	<b>2.1</b>	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	59-50-7	
4-Chloroaniline	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Sample: IB-1 @6" Lab ID: 30230600001 Collected: 09/19/17 09:15 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	91-58-7	
2-Chlorophenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	7005-72-3	
Chrysene	3.5	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	218-01-9	M1,ML
Dibenz(a,h)anthracene	0.78	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	120-83-2	
Diethylphthalate	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	105-67-9	
Dimethylphthalate	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	84-74-2	M1,ML, R1
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	117-84-0	IS,M1, MH,R1
bis(2-Ethylhexyl)phthalate	2.2	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	117-81-7	
Fluoranthene	4.3	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	206-44-0	
Fluorene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	77-47-4	
Hexachloroethane	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	67-72-1	
Indeno(1,2,3-cd)pyrene	1.9	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	193-39-5	IS
Isophorone	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	78-59-1	
2-Methylnaphthalene	0.42	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.74	1	09/26/17 23:38	10/04/17 00:21		
Naphthalene	0.84	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	91-20-3	
2-Nitroaniline	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	88-74-4	
3-Nitroaniline	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	99-09-2	
4-Nitroaniline	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	98-95-3	
2-Nitrophenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	88-75-5	
4-Nitrophenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	86-30-6	
Pentachlorophenol	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	87-86-5	
Phenanthrene	2.5	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	85-01-8	M1,ML
Phenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	108-95-2	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-1 @6" Lab ID: 30230600001 Collected: 09/19/17 09:15 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Pyrene	5.4	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	120-82-1	
2,4,5-Trichlorophenol	ND	mg/kg	0.93	1	09/26/17 23:38	10/04/17 00:21	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.37	1	09/26/17 23:38	10/04/17 00:21	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	58	%	10-175	1	09/26/17 23:38	10/04/17 00:21	4165-60-0	
2-Fluorobiphenyl (S)	56	%	10-151	1	09/26/17 23:38	10/04/17 00:21	321-60-8	
Terphenyl-d14 (S)	83	%	10-172	1	09/26/17 23:38	10/04/17 00:21	1718-51-0	
Phenol-d6 (S)	59	%	10-142	1	09/26/17 23:38	10/04/17 00:21	13127-88-3	
2-Fluorophenol (S)	61	%	10-138	1	09/26/17 23:38	10/04/17 00:21	367-12-4	
2,4,6-Tribromophenol (S)	56	%	10-144	1	09/26/17 23:38	10/04/17 00:21	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
Acetone	0.25	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	67-64-1	1c
Benzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-27-4	1c
Bromoform	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-25-2	1c
Bromomethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	74-83-9	1c
TOTAL BTEX	ND	mg/kg	0.050	1	09/27/17 13:56	09/27/17 18:19		
2-Butanone (MEK)	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	78-93-3	1c
Carbon disulfide	0.012	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	108-90-7	1c
Chloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-00-3	1c
Chloroform	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	67-66-3	1c
Chloromethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	10061-02-6	1c
Ethylbenzene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	100-41-4	1c
2-Hexanone	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	1634-04-4	1c
Styrene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	79-34-5	1c

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-1@6"      **Lab ID:** 30230600001      Collected: 09/19/17 09:15      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
Tetrachloroethene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	127-18-4	1c
Toluene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	108-88-3	1c
1,1,1-Trichloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	79-00-5	1c
Trichloroethene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	75-01-4	1c
Xylene (Total)	ND	mg/kg	0.025	1	09/27/17 13:56	09/27/17 18:19	1330-20-7	
m&p-Xylene	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 18:19	179601-23-1	1c
o-Xylene	ND	mg/kg	0.0083	1	09/27/17 13:56	09/27/17 18:19	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	100	%	76-124	1	09/27/17 13:56	09/27/17 18:19	2037-26-5	
4-Bromofluorobenzene (S)	108	%	70-133	1	09/27/17 13:56	09/27/17 18:19	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	74-131	1	09/27/17 13:56	09/27/17 18:19	17060-07-0	
Dibromofluoromethane (S)	104	%	71-130	1	09/27/17 13:56	09/27/17 18:19	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>12.9</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-1@6' Lab ID: 30230600002 Collected: 09/19/17 09:50 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010B Preparation Method: EPA 3050B								
Aluminum	10700	mg/kg	26.8	2	09/25/17 08:37	09/26/17 09:44	7429-90-5	
Antimony	ND	mg/kg	1.6	2	09/25/17 08:37	09/26/17 09:44	7440-36-0	
Arsenic	4.8	mg/kg	1.3	2	09/25/17 08:37	09/26/17 09:44	7440-38-2	
Barium	221	mg/kg	5.4	2	09/25/17 08:37	09/26/17 09:44	7440-39-3	
Beryllium	6.5	mg/kg	0.54	2	09/25/17 08:37	09/26/17 09:44	7440-41-7	
Boron	ND	mg/kg	13.4	2	09/25/17 08:37	09/26/17 09:44	7440-42-8	
Cadmium	ND	mg/kg	0.80	2	09/25/17 08:37	09/26/17 09:44	7440-43-9	
Calcium	847	mg/kg	535	2	09/25/17 08:37	09/26/17 09:44	7440-70-2	
Chromium	11.5	mg/kg	1.3	2	09/25/17 08:37	09/26/17 09:44	7440-47-3	
Cobalt	35.1	mg/kg	1.3	1	09/25/17 08:37	09/26/17 08:27	7440-48-4	
Copper	83.5	mg/kg	2.7	2	09/25/17 08:37	09/26/17 09:44	7440-50-8	
Iron	76400	mg/kg	26.8	2	09/25/17 08:37	09/26/17 09:44	7439-89-6	
Lead	42.3	mg/kg	0.67	1	09/25/17 08:37	09/26/17 08:27	7439-92-1	
Magnesium	1370	mg/kg	134	2	09/25/17 08:37	09/26/17 09:44	7439-95-4	
Manganese	7180	mg/kg	2.7	2	09/25/17 08:37	09/26/17 09:44	7439-96-5	
Molybdenum	ND	mg/kg	2.7	1	09/25/17 08:37	09/26/17 08:27	7439-98-7	
Nickel	30.4	mg/kg	5.4	2	09/25/17 08:37	09/26/17 09:44	7440-02-0	
Potassium	607	mg/kg	134	2	09/25/17 08:37	09/26/17 09:44	7440-09-7	
Selenium	ND	mg/kg	2.1	2	09/25/17 08:37	09/26/17 09:44	7782-49-2	
Silver	2.2	mg/kg	1.6	2	09/25/17 08:37	09/26/17 09:44	7440-22-4	
Sodium	ND	mg/kg	1340	2	09/25/17 08:37	09/26/17 09:44	7440-23-5	
Thallium	ND	mg/kg	2.7	1	09/25/17 08:37	09/26/17 08:27	7440-28-0	
Vanadium	34.8	mg/kg	2.7	2	09/25/17 08:37	09/26/17 09:44	7440-62-2	
Zinc	138	mg/kg	2.7	2	09/25/17 08:37	09/26/17 09:44	7440-66-6	
<b>7471 Mercury</b> Analytical Method: EPA 7471A Preparation Method: EPA 7471A								
Mercury	ND	mg/kg	0.14	1	09/25/17 10:13	09/25/17 18:41	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Acenaphthene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	83-32-9	
Acenaphthylene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	208-96-8	
Anthracene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	50-32-8	IS
Benzo(b)fluoranthene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	191-24-2	IS
Benzo(k)fluoranthene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	59-50-7	
4-Chloroaniline	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	108-60-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-1 @6' Lab ID: 30230600002 Collected: 09/19/17 09:50 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	91-58-7	
2-Chlorophenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	7005-72-3	
Chrysene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	120-83-2	
Diethylphthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	105-67-9	
Dimethylphthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	117-81-7	
Fluoranthene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	206-44-0	
Fluorene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	77-47-4	
Hexachloroethane	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	193-39-5	IS
Isophorone	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.92	1	09/26/17 23:38	10/04/17 01:25		
Naphthalene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	91-20-3	
2-Nitroaniline	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	88-74-4	
3-Nitroaniline	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	99-09-2	
4-Nitroaniline	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	98-95-3	
2-Nitrophenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	88-75-5	
4-Nitrophenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	86-30-6	
Pentachlorophenol	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	87-86-5	
Phenanthrene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	85-01-8	
Phenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	108-95-2	
Pyrene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	120-82-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-1 @6'      **Lab ID:** 30230600002      Collected: 09/19/17 09:50      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
2,4,5-Trichlorophenol	ND	mg/kg	1.2	1	09/26/17 23:38	10/04/17 01:25	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.46	1	09/26/17 23:38	10/04/17 01:25	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	75	%	10-175	1	09/26/17 23:38	10/04/17 01:25	4165-60-0	
2-Fluorobiphenyl (S)	78	%	10-151	1	09/26/17 23:38	10/04/17 01:25	321-60-8	
Terphenyl-d14 (S)	115	%	10-172	1	09/26/17 23:38	10/04/17 01:25	1718-51-0	
Phenol-d6 (S)	71	%	10-142	1	09/26/17 23:38	10/04/17 01:25	13127-88-3	
2-Fluorophenol (S)	68	%	10-138	1	09/26/17 23:38	10/04/17 01:25	367-12-4	
2,4,6-Tribromophenol (S)	60	%	10-144	1	09/26/17 23:38	10/04/17 01:25	118-79-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>29.5</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-2@4"      **Lab ID:** 30230600003      Collected: 09/19/17 10:15      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010B      Preparation Method: EPA 3050B								
Aluminum	5870	mg/kg	10.3	1	09/25/17 08:37	09/26/17 08:30	7429-90-5	
Antimony	18.1	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:30	7440-36-0	
Arsenic	20.4	mg/kg	0.51	1	09/25/17 08:37	09/26/17 08:30	7440-38-2	
Barium	597	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:30	7440-39-3	
Beryllium	4.8	mg/kg	0.21	1	09/25/17 08:37	09/26/17 08:30	7440-41-7	
Boron	87.3	mg/kg	5.1	1	09/25/17 08:37	09/26/17 08:30	7440-42-8	
Cadmium	16.2	mg/kg	0.31	1	09/25/17 08:37	09/26/17 08:30	7440-43-9	
Calcium	15700	mg/kg	206	1	09/25/17 08:37	09/26/17 08:30	7440-70-2	
Chromium	282	mg/kg	0.51	1	09/25/17 08:37	09/26/17 08:30	7440-47-3	
Cobalt	67.9	mg/kg	1.0	1	09/25/17 08:37	09/26/17 08:30	7440-48-4	
Copper	368	mg/kg	1.0	1	09/25/17 08:37	09/26/17 08:30	7440-50-8	
Iron	26600	mg/kg	10.3	1	09/25/17 08:37	09/26/17 08:30	7439-89-6	
Lead	3290	mg/kg	0.51	1	09/25/17 08:37	09/26/17 08:30	7439-92-1	
Magnesium	4880	mg/kg	51.4	1	09/25/17 08:37	09/26/17 08:30	7439-95-4	
Manganese	393	mg/kg	1.0	1	09/25/17 08:37	09/26/17 08:30	7439-96-5	
Molybdenum	15.9	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:30	7439-98-7	
Nickel	36.9	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:30	7440-02-0	
Potassium	658	mg/kg	51.4	1	09/25/17 08:37	09/26/17 08:30	7440-09-7	
Selenium	7.1	mg/kg	0.82	1	09/25/17 08:37	09/26/17 08:30	7782-49-2	
Silver	ND	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:30	7440-22-4	
Sodium	ND	mg/kg	514	1	09/25/17 08:37	09/26/17 08:30	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:30	7440-28-0	
Vanadium	28.4	mg/kg	1.0	1	09/25/17 08:37	09/26/17 08:30	7440-62-2	
Zinc	2310	mg/kg	1.0	1	09/25/17 08:37	09/26/17 08:30	7440-66-6	

**7471 Mercury**

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

Mercury	0.99	mg/kg	0.097	1	09/25/17 10:13	09/25/17 18:43	7439-97-6	
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**8270 MSSV FULL LIST MICROWAVE**

Analytical Method: EPA 8270C      Preparation Method: EPA 3546

Acenaphthene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	83-32-9	ED
Acenaphthylene	5.3	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	208-96-8	ED
Anthracene	5.0	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	120-12-7	ED
Benzo(a)anthracene	20.2	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	56-55-3	ED
Benzo(a)pyrene	21.8	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	50-32-8	ED,IS
Benzo(b)fluoranthene	28.1	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	205-99-2	ED,IS
Benzo(g,h,i)perylene	9.1	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	191-24-2	ED,IS
Benzo(k)fluoranthene	25.1	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	207-08-9	ED,IS
Benzyl alcohol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	100-51-6	ED
4-Bromophenylphenyl ether	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	101-55-3	ED
Butylbenzylphthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	85-68-7	ED
4-Chloro-3-methylphenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	59-50-7	ED
4-Chloroaniline	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	106-47-8	2c,ED
bis(2-Chloroethoxy)methane	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	111-91-1	ED
bis(2-Chloroethyl) ether	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	111-44-4	ED
bis(2-Chloroisopropyl) ether	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	108-60-1	ED

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-2@4"      **Lab ID:** 30230600003      Collected: 09/19/17 10:15      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	91-58-7	ED
2-Chlorophenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	95-57-8	ED
4-Chlorophenylphenyl ether	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	7005-72-3	ED
Chrysene	<b>22.1</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	218-01-9	ED
Dibenz(a,h)anthracene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	53-70-3	ED, IS
Dibenzofuran	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	132-64-9	ED
1,2-Dichlorobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	95-50-1	ED
1,3-Dichlorobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	541-73-1	ED
1,4-Dichlorobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	106-46-7	ED
3,3'-Dichlorobenzidine	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	91-94-1	2c, ED
2,4-Dichlorophenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	120-83-2	ED
Diethylphthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	84-66-2	ED
2,4-Dimethylphenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	105-67-9	ED
Dimethylphthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	131-11-3	ED
Di-n-butylphthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	84-74-2	ED
4,6-Dinitro-2-methylphenol	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	534-52-1	ED
2,4-Dinitrophenol	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	51-28-5	ED
2,4-Dinitrotoluene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	121-14-2	ED
2,6-Dinitrotoluene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	606-20-2	ED
Di-n-octylphthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	117-84-0	ED, IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	117-81-7	ED
Fluoranthene	<b>37.3</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	206-44-0	ED
Fluorene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	86-73-7	ED
Hexachloro-1,3-butadiene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	87-68-3	ED
Hexachlorobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	118-74-1	ED
Hexachlorocyclopentadiene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	77-47-4	ED
Hexachloroethane	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	67-72-1	ED
Indeno(1,2,3-cd)pyrene	<b>8.4</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	193-39-5	ED, IS
Isophorone	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	78-59-1	ED
2-Methylnaphthalene	<b>7.3</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	91-57-6	ED
2-Methylphenol(o-Cresol)	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	95-48-7	ED
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	7.2	10	09/26/17 23:38	10/04/17 01:46		ED
Naphthalene	<b>24.7</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	91-20-3	ED
2-Nitroaniline	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	88-74-4	ED
3-Nitroaniline	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	99-09-2	ED
4-Nitroaniline	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	100-01-6	3c, ED
Nitrobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	98-95-3	ED
2-Nitrophenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	88-75-5	ED
4-Nitrophenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	100-02-7	ED
N-Nitroso-di-n-propylamine	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	621-64-7	ED
N-Nitrosodiphenylamine	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	86-30-6	ED
Pentachlorophenol	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	87-86-5	ED
Phenanthrene	<b>21.3</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	85-01-8	ED
Phenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	108-95-2	ED
Pyrene	<b>56.1</b>	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	129-00-0	ED
1,2,4-Trichlorobenzene	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	120-82-1	ED

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-2@4"      **Lab ID:** 30230600003      Collected: 09/19/17 10:15      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	9.0	10	09/26/17 23:38	10/04/17 01:46	95-95-4	ED
2,4,6-Trichlorophenol	ND	mg/kg	3.6	10	09/26/17 23:38	10/04/17 01:46	88-06-2	ED
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	84	%	10-175	10	09/26/17 23:38	10/04/17 01:46	4165-60-0	
2-Fluorobiphenyl (S)	78	%	10-151	10	09/26/17 23:38	10/04/17 01:46	321-60-8	
Terphenyl-d14 (S)	130	%	10-172	10	09/26/17 23:38	10/04/17 01:46	1718-51-0	
Phenol-d6 (S)	82	%	10-142	10	09/26/17 23:38	10/04/17 01:46	13127-88-3	
2-Fluorophenol (S)	83	%	10-138	10	09/26/17 23:38	10/04/17 01:46	367-12-4	
2,4,6-Tribromophenol (S)	70	%	10-144	10	09/26/17 23:38	10/04/17 01:46	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	ND	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	67-64-1	1c
Benzene	6.0	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	71-43-2	1c
Bromodichloromethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-27-4	1c
Bromoform	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-25-2	1c
Bromomethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	74-83-9	1c
TOTAL BTEX	137	mg/kg	20.5	500	09/27/17 13:57	10/02/17 14:37		
2-Butanone (MEK)	ND	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	78-93-3	1c
Carbon disulfide	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	56-23-5	1c
Chlorobenzene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	108-90-7	1c
Chloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-00-3	1c
Chloroform	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	67-66-3	1c
Chloromethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	74-87-3	1c
Dibromochloromethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	540-59-0	
1,1-Dichloroethene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	10061-02-6	1c
Ethylbenzene	8.1	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	100-41-4	1c
2-Hexanone	ND	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	591-78-6	1c
Methylene Chloride	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	1634-04-4	1c
Styrene	22.2	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	79-34-5	1c
Tetrachloroethene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	127-18-4	1c
Toluene	22.6	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	108-88-3	1c

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample: IB-2@4"      Lab ID: 30230600003      Collected: 09/19/17 10:15      Received: 09/20/17 23:30      Matrix: Solid**

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	79-00-5	1c
Trichloroethene	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	79-01-6	1c
Vinyl chloride	ND	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	75-01-4	1c
Xylene (Total)	<b>100</b>	mg/kg	10.3	500	09/27/17 13:57	10/02/17 14:37	1330-20-7	
m&p-Xylene	<b>65.7</b>	mg/kg	6.8	500	09/27/17 13:57	10/02/17 14:37	179601-23-1	1c
o-Xylene	<b>34.7</b>	mg/kg	3.4	500	09/27/17 13:57	10/02/17 14:37	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	93	%	76-124	500	09/27/17 13:57	10/02/17 14:37	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-133	500	09/27/17 13:57	10/02/17 14:37	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	74-131	500	09/27/17 13:57	10/02/17 14:37	17060-07-0	
Dibromofluoromethane (S)	114	%	71-130	500	09/27/17 13:57	10/02/17 14:37	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>8.3</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: **IB-2@4.5'** Lab ID: **30230600004** Collected: 09/19/17 10:25 Received: 09/20/17 23:30 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010B Preparation Method: EPA 3050B								
Aluminum	9830	mg/kg	23.3	2	09/25/17 08:37	09/26/17 09:46	7429-90-5	
Antimony	ND	mg/kg	1.4	2	09/25/17 08:37	09/26/17 09:46	7440-36-0	
Arsenic	2.8	mg/kg	1.2	2	09/25/17 08:37	09/26/17 09:46	7440-38-2	
Barium	217	mg/kg	4.7	2	09/25/17 08:37	09/26/17 09:46	7440-39-3	
Beryllium	3.6	mg/kg	0.47	2	09/25/17 08:37	09/26/17 09:46	7440-41-7	
Boron	27.6	mg/kg	11.6	2	09/25/17 08:37	09/26/17 09:46	7440-42-8	
Cadmium	3.2	mg/kg	0.70	2	09/25/17 08:37	09/26/17 09:46	7440-43-9	
Calcium	2110	mg/kg	465	2	09/25/17 08:37	09/26/17 09:46	7440-70-2	
Chromium	70.0	mg/kg	1.2	2	09/25/17 08:37	09/26/17 09:46	7440-47-3	
Cobalt	35.1	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:32	7440-48-4	
Copper	149	mg/kg	2.3	2	09/25/17 08:37	09/26/17 09:46	7440-50-8	
Iron	30300	mg/kg	23.3	2	09/25/17 08:37	09/26/17 09:46	7439-89-6	
Lead	378	mg/kg	0.58	1	09/25/17 08:37	09/26/17 08:32	7439-92-1	
Magnesium	1270	mg/kg	116	2	09/25/17 08:37	09/26/17 09:46	7439-95-4	
Manganese	1590	mg/kg	2.3	2	09/25/17 08:37	09/26/17 09:46	7439-96-5	
Molybdenum	5.3	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:32	7439-98-7	
Nickel	29.4	mg/kg	4.7	2	09/25/17 08:37	09/26/17 09:46	7440-02-0	
Potassium	712	mg/kg	116	2	09/25/17 08:37	09/26/17 09:46	7440-09-7	
Selenium	ND	mg/kg	1.9	2	09/25/17 08:37	09/26/17 09:46	7782-49-2	
Silver	ND	mg/kg	1.4	2	09/25/17 08:37	09/26/17 09:46	7440-22-4	
Sodium	ND	mg/kg	1160	2	09/25/17 08:37	09/26/17 09:46	7440-23-5	
Thallium	ND	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:32	7440-28-0	
Vanadium	24.6	mg/kg	2.3	2	09/25/17 08:37	09/26/17 09:46	7440-62-2	
Zinc	658	mg/kg	2.3	2	09/25/17 08:37	09/26/17 09:46	7440-66-6	
<b>7471 Mercury</b> Analytical Method: EPA 7471A Preparation Method: EPA 7471A								
Mercury	0.20	mg/kg	0.13	1	09/25/17 10:13	09/25/17 18:45	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
Acenaphthene	0.81	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	83-32-9	
Acenaphthylene	2.1	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	208-96-8	
Anthracene	2.6	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	120-12-7	
Benzo(a)anthracene	4.6	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	56-55-3	
Benzo(a)pyrene	4.2	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	50-32-8	IS
Benzo(b)fluoranthene	5.1	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	205-99-2	IS
Benzo(g,h,i)perylene	0.91	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	191-24-2	IS
Benzo(k)fluoranthene	5.9	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	101-55-3	
Butylbenzylphthalate	1.1	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	59-50-7	
4-Chloroaniline	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: **IB-2@4.5'** Lab ID: **30230600004** Collected: 09/19/17 10:25 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	91-58-7	
2-Chlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	7005-72-3	
Chrysene	<b>4.7</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	53-70-3	IS
Dibenzofuran	<b>2.1</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	120-83-2	
Diethylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	105-67-9	
Dimethylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	117-84-0	IS
bis(2-Ethylhexyl)phthalate	<b>4.0</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	117-81-7	
Fluoranthene	<b>10.4</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	206-44-0	E
Fluorene	<b>3.6</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	77-47-4	
Hexachloroethane	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	67-72-1	
Indeno(1,2,3-cd)pyrene	<b>1.2</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	193-39-5	IS
Isophorone	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	78-59-1	
2-Methylnaphthalene	<b>5.1</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.84	1	09/26/17 23:38	10/04/17 02:07		
Naphthalene	<b>11.8</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	91-20-3	E
2-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	88-74-4	
3-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	99-09-2	
4-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	98-95-3	
2-Nitrophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	88-75-5	
4-Nitrophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	86-30-6	
Pentachlorophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	87-86-5	
Phenanthrene	<b>13.6</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	85-01-8	E
Phenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	108-95-2	
Pyrene	<b>16.4</b>	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	129-00-0	E
1,2,4-Trichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	120-82-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-2@4.5'      **Lab ID:** 30230600004      Collected: 09/19/17 10:25      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**8270 MSSV FULL LIST MICROWAVE**      Analytical Method: EPA 8270C      Preparation Method: EPA 3546

2,4,5-Trichlorophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 02:07	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:07	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	72	%	10-175	1	09/26/17 23:38	10/04/17 02:07	4165-60-0	
2-Fluorobiphenyl (S)	67	%	10-151	1	09/26/17 23:38	10/04/17 02:07	321-60-8	
Terphenyl-d14 (S)	130	%	10-172	1	09/26/17 23:38	10/04/17 02:07	1718-51-0	
Phenol-d6 (S)	63	%	10-142	1	09/26/17 23:38	10/04/17 02:07	13127-88-3	
2-Fluorophenol (S)	64	%	10-138	1	09/26/17 23:38	10/04/17 02:07	367-12-4	
2,4,6-Tribromophenol (S)	58	%	10-144	1	09/26/17 23:38	10/04/17 02:07	118-79-6	

Analytical Method: EPA 8260B      Preparation Method: EPA 5035A

Acetone	<b>0.13</b>	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	67-64-1	1c
Benzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-27-4	1c
Bromoform	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-25-2	1c
Bromomethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	74-83-9	1c
TOTAL BTEX	ND	mg/kg	0.032	1	09/27/17 13:56	09/27/17 19:12		
2-Butanone (MEK)	<b>0.021</b>	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	78-93-3	1c
Carbon disulfide	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	108-90-7	1c
Chloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-00-3	1c
Chloroform	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	67-66-3	1c
Chloromethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	10061-02-6	1c
Ethylbenzene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	100-41-4	1c
2-Hexanone	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	1634-04-4	1c
Styrene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	79-34-5	1c
Tetrachloroethene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	127-18-4	1c
Toluene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	108-88-3	1c

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample: IB-2@4.5'**      **Lab ID: 30230600004**      Collected: 09/19/17 10:25      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: EPA 8260B    Preparation Method: EPA 5035A								
1,1,1-Trichloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	79-00-5	1c
Trichloroethene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	75-01-4	1c
Xylene (Total)	ND	mg/kg	0.016	1	09/27/17 13:56	09/27/17 19:12	1330-20-7	
m&p-Xylene	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 19:12	179601-23-1	1c
o-Xylene	ND	mg/kg	0.0053	1	09/27/17 13:56	09/27/17 19:12	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	95	%	76-124	1	09/27/17 13:56	09/27/17 19:12	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-133	1	09/27/17 13:56	09/27/17 19:12	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	74-131	1	09/27/17 13:56	09/27/17 19:12	17060-07-0	
Dibromofluoromethane (S)	103	%	71-130	1	09/27/17 13:56	09/27/17 19:12	1868-53-7	
<b>Percent Moisture</b>								
Analytical Method: ASTM D2974-87								
Percent Moisture	<b>23.2</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-3@1.5' Lab ID: 30230600005 Collected: 09/19/17 10:50 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3050B						
Aluminum	13200	mg/kg	11.5	1	09/25/17 08:37	09/26/17 08:34	7429-90-5	
Antimony	ND	mg/kg	0.69	1	09/25/17 08:37	09/26/17 08:34	7440-36-0	
Arsenic	6.1	mg/kg	0.58	1	09/25/17 08:37	09/26/17 08:34	7440-38-2	
Barium	92.8	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:34	7440-39-3	
Beryllium	1.8	mg/kg	0.23	1	09/25/17 08:37	09/26/17 08:34	7440-41-7	
Boron	ND	mg/kg	5.8	1	09/25/17 08:37	09/26/17 08:34	7440-42-8	
Cadmium	ND	mg/kg	0.35	1	09/25/17 08:37	09/26/17 08:34	7440-43-9	
Calcium	890	mg/kg	230	1	09/25/17 08:37	09/26/17 08:34	7440-70-2	
Chromium	20.3	mg/kg	0.58	1	09/25/17 08:37	09/26/17 08:34	7440-47-3	
Cobalt	21.1	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:34	7440-48-4	
Copper	45.2	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:34	7440-50-8	
Iron	28800	mg/kg	11.5	1	09/25/17 08:37	09/26/17 08:34	7439-89-6	
Lead	74.0	mg/kg	0.58	1	09/25/17 08:37	09/26/17 08:34	7439-92-1	
Magnesium	1720	mg/kg	57.5	1	09/25/17 08:37	09/26/17 08:34	7439-95-4	
Manganese	1460	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:34	7439-96-5	
Molybdenum	ND	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:34	7439-98-7	
Nickel	17.5	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:34	7440-02-0	
Potassium	700	mg/kg	57.5	1	09/25/17 08:37	09/26/17 08:34	7440-09-7	
Selenium	0.98	mg/kg	0.92	1	09/25/17 08:37	09/26/17 08:34	7782-49-2	
Silver	ND	mg/kg	0.69	1	09/25/17 08:37	09/26/17 08:34	7440-22-4	
Sodium	ND	mg/kg	575	1	09/25/17 08:37	09/26/17 08:34	7440-23-5	
Thallium	ND	mg/kg	2.3	1	09/25/17 08:37	09/26/17 08:34	7440-28-0	
Vanadium	33.0	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:34	7440-62-2	
Zinc	109	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:34	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	09/25/17 10:13	09/25/17 18:46	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	83-32-9	
Acenaphthylene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	208-96-8	
Anthracene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	56-55-3	
Benzo(a)pyrene	0.45	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	50-32-8	IS
Benzo(b)fluoranthene	0.63	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	191-24-2	IS
Benzo(k)fluoranthene	0.65	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	59-50-7	
4-Chloroaniline	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Sample: IB-3@1.5' Lab ID: 30230600005 Collected: 09/19/17 10:50 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	91-58-7	
2-Chlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	7005-72-3	
Chrysene	0.48	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	120-83-2	
Diethylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	105-67-9	
Dimethylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	117-81-7	
Fluoranthene	0.87	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	206-44-0	
Fluorene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	77-47-4	
Hexachloroethane	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	193-39-5	IS
Isophorone	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.84	1	09/26/17 23:38	10/04/17 02:28		
Naphthalene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	91-20-3	
2-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	88-74-4	
3-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	99-09-2	
4-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	98-95-3	
2-Nitrophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	88-75-5	
4-Nitrophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	86-30-6	
Pentachlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	87-86-5	
Phenanthrene	0.62	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	85-01-8	
Phenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	108-95-2	
Pyrene	1.1	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-3@1.5'      **Lab ID:** 30230600005      Collected: 09/19/17 10:50      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 02:28	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.42	1	09/26/17 23:38	10/04/17 02:28	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	83	%	10-175	1	09/26/17 23:38	10/04/17 02:28	4165-60-0	
2-Fluorobiphenyl (S)	80	%	10-151	1	09/26/17 23:38	10/04/17 02:28	321-60-8	
Terphenyl-d14 (S)	131	%	10-172	1	09/26/17 23:38	10/04/17 02:28	1718-51-0	
Phenol-d6 (S)	77	%	10-142	1	09/26/17 23:38	10/04/17 02:28	13127-88-3	
2-Fluorophenol (S)	80	%	10-138	1	09/26/17 23:38	10/04/17 02:28	367-12-4	
2,4,6-Tribromophenol (S)	86	%	10-144	1	09/26/17 23:38	10/04/17 02:28	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.23</b>	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	67-64-1	1c
Benzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-27-4	1c
Bromoform	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-25-2	1c
Bromomethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	74-83-9	1c
TOTAL BTEX	ND	mg/kg	0.035	1	09/27/17 13:56	09/27/17 19:38		
2-Butanone (MEK)	<b>0.012</b>	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	78-93-3	1c
Carbon disulfide	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	108-90-7	1c
Chloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-00-3	1c
Chloroform	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	67-66-3	1c
Chloromethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	10061-02-6	1c
Ethylbenzene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	100-41-4	1c
2-Hexanone	ND	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	1634-04-4	1c
Styrene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	79-34-5	1c
Tetrachloroethene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	127-18-4	1c
Toluene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	108-88-3	1c

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-3@1.5'      **Lab ID:** 30230600005      Collected: 09/19/17 10:50      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	79-00-5	1c
Trichloroethene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	75-01-4	1c
Xylene (Total)	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 19:38	1330-20-7	
m&p-Xylene	ND	mg/kg	0.012	1	09/27/17 13:56	09/27/17 19:38	179601-23-1	1c
o-Xylene	ND	mg/kg	0.0058	1	09/27/17 13:56	09/27/17 19:38	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	95	%	76-124	1	09/27/17 13:56	09/27/17 19:38	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-133	1	09/27/17 13:56	09/27/17 19:38	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	74-131	1	09/27/17 13:56	09/27/17 19:38	17060-07-0	
Dibromofluoromethane (S)	104	%	71-130	1	09/27/17 13:56	09/27/17 19:38	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>21.0</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-3@5.5'      **Lab ID:** 30230600006      Collected: 09/19/17 11:20      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>5250</b>	mg/kg	12.4	1	09/25/17 08:37	09/26/17 08:36	7429-90-5	
Antimony	<b>10.8</b>	mg/kg	0.74	1	09/25/17 08:37	09/26/17 08:36	7440-36-0	
Arsenic	<b>5.2</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:36	7440-38-2	
Barium	<b>217</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:36	7440-39-3	
Beryllium	<b>7.8</b>	mg/kg	0.25	1	09/25/17 08:37	09/26/17 08:36	7440-41-7	
Boron	<b>90.1</b>	mg/kg	6.2	1	09/25/17 08:37	09/26/17 08:36	7440-42-8	
Cadmium	<b>2.3</b>	mg/kg	0.37	1	09/25/17 08:37	09/26/17 08:36	7440-43-9	
Calcium	<b>4310</b>	mg/kg	248	1	09/25/17 08:37	09/26/17 08:36	7440-70-2	
Chromium	<b>135</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:36	7440-47-3	
Cobalt	<b>68.3</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:36	7440-48-4	
Copper	<b>500</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:36	7440-50-8	
Iron	<b>63100</b>	mg/kg	12.4	1	09/25/17 08:37	09/26/17 08:36	7439-89-6	
Lead	<b>1220</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:36	7439-92-1	
Magnesium	<b>1960</b>	mg/kg	62.0	1	09/25/17 08:37	09/26/17 08:36	7439-95-4	
Manganese	<b>6320</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:36	7439-96-5	
Molybdenum	<b>18.4</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:36	7439-98-7	
Nickel	<b>29.5</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:36	7440-02-0	
Potassium	<b>375</b>	mg/kg	62.0	1	09/25/17 08:37	09/26/17 08:36	7440-09-7	
Selenium	ND	mg/kg	0.99	1	09/25/17 08:37	09/26/17 08:36	7782-49-2	
Silver	<b>2.3</b>	mg/kg	0.74	1	09/25/17 08:37	09/26/17 08:36	7440-22-4	
Sodium	ND	mg/kg	620	1	09/25/17 08:37	09/26/17 08:36	7440-23-5	
Thallium	ND	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:36	7440-28-0	
Vanadium	<b>30.3</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:36	7440-62-2	
Zinc	<b>1680</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:36	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 10:13	09/25/17 18:48	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>25.3</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-4@2' Lab ID: 30230600007 Collected: 09/19/17 11:45 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3050B						
Aluminum	11700	mg/kg	10.6	1	09/25/17 08:37	09/26/17 08:38	7429-90-5	
Antimony	2.9	mg/kg	0.63	1	09/25/17 08:37	09/26/17 08:38	7440-36-0	
Arsenic	5.7	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:38	7440-38-2	
Barium	242	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:38	7440-39-3	
Beryllium	6.2	mg/kg	0.21	1	09/25/17 08:37	09/26/17 08:38	7440-41-7	
Boron	139	mg/kg	5.3	1	09/25/17 08:37	09/26/17 08:38	7440-42-8	
Cadmium	4.1	mg/kg	0.32	1	09/25/17 08:37	09/26/17 08:38	7440-43-9	
Calcium	4440	mg/kg	211	1	09/25/17 08:37	09/26/17 08:38	7440-70-2	
Chromium	126	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:38	7440-47-3	
Cobalt	28.3	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:38	7440-48-4	
Copper	254	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:38	7440-50-8	
Iron	26700	mg/kg	10.6	1	09/25/17 08:37	09/26/17 08:38	7439-89-6	
Lead	1230	mg/kg	0.53	1	09/25/17 08:37	09/26/17 08:38	7439-92-1	
Magnesium	2290	mg/kg	52.8	1	09/25/17 08:37	09/26/17 08:38	7439-95-4	
Manganese	1160	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:38	7439-96-5	
Molybdenum	17.5	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:38	7439-98-7	
Nickel	22.2	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:38	7440-02-0	
Potassium	667	mg/kg	52.8	1	09/25/17 08:37	09/26/17 08:38	7440-09-7	
Selenium	0.89	mg/kg	0.84	1	09/25/17 08:37	09/26/17 08:38	7782-49-2	
Silver	ND	mg/kg	0.63	1	09/25/17 08:37	09/26/17 08:38	7440-22-4	
Sodium	ND	mg/kg	528	1	09/25/17 08:37	09/26/17 08:38	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 08:37	09/26/17 08:38	7440-28-0	
Vanadium	28.0	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:38	7440-62-2	
Zinc	1880	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:38	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 10:13	09/25/17 18:53	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	83-32-9	
Acenaphthylene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	208-96-8	
Anthracene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	50-32-8	IS
Benzo(b)fluoranthene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	191-24-2	IS
Benzo(k)fluoranthene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	59-50-7	
4-Chloroaniline	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-4@2' Lab ID: 30230600007 Collected: 09/19/17 11:45 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	91-58-7	
2-Chlorophenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	7005-72-3	
Chrysene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	120-83-2	
Diethylphthalate	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	105-67-9	
Dimethylphthalate	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	117-84-0	IS
bis(2-Ethylhexyl)phthalate	0.63	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	117-81-7	
Fluoranthene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	206-44-0	
Fluorene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	77-47-4	
Hexachloroethane	0.70	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	193-39-5	IS
Isophorone	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.78	1	09/26/17 23:38	10/04/17 03:10		
Naphthalene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	91-20-3	
2-Nitroaniline	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	88-74-4	
3-Nitroaniline	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	99-09-2	
4-Nitroaniline	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	98-95-3	
2-Nitrophenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	88-75-5	
4-Nitrophenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	86-30-6	
Pentachlorophenol	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	87-86-5	
Phenanthrene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	85-01-8	
Phenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	108-95-2	
Pyrene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	120-82-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-4@2'      **Lab ID:** 30230600007      Collected: 09/19/17 11:45      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.98	1	09/26/17 23:38	10/04/17 03:10	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.39	1	09/26/17 23:38	10/04/17 03:10	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	100	%	10-175	1	09/26/17 23:38	10/04/17 03:10	4165-60-0	
2-Fluorobiphenyl (S)	84	%	10-151	1	09/26/17 23:38	10/04/17 03:10	321-60-8	
Terphenyl-d14 (S)	150	%	10-172	1	09/26/17 23:38	10/04/17 03:10	1718-51-0	
Phenol-d6 (S)	91	%	10-142	1	09/26/17 23:38	10/04/17 03:10	13127-88-3	
2-Fluorophenol (S)	84	%	10-138	1	09/26/17 23:38	10/04/17 03:10	367-12-4	
2,4,6-Tribromophenol (S)	100	%	10-144	1	09/26/17 23:38	10/04/17 03:10	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	ND	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	67-64-1	1c
Benzene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-27-4	1c
Bromoform	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-25-2	1c
Bromomethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	74-83-9	1c
TOTAL BTEX	13.2	mg/kg	1.4	50	09/27/17 13:57	09/27/17 22:44		
2-Butanone (MEK)	ND	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	78-93-3	1c
Carbon disulfide	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	108-90-7	1c
Chloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-00-3	1c
Chloroform	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	67-66-3	1c
Chloromethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	10061-02-6	1c
Ethylbenzene	4.0	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	100-41-4	1c
2-Hexanone	ND	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	1634-04-4	1c
Styrene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	79-34-5	1c
Tetrachloroethene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	127-18-4	1c
Toluene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	108-88-3	1c

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample: IB-4@2'      Lab ID: 30230600007      Collected: 09/19/17 11:45      Received: 09/20/17 23:30      Matrix: Solid**

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	79-00-5	1c
Trichloroethene	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	75-01-4	1c
Xylene (Total)	<b>9.2</b>	mg/kg	0.70	50	09/27/17 13:57	09/27/17 22:44	1330-20-7	
m&p-Xylene	<b>8.7</b>	mg/kg	0.47	50	09/27/17 13:57	09/27/17 22:44	179601-23-1	1c
o-Xylene	<b>0.53</b>	mg/kg	0.23	50	09/27/17 13:57	09/27/17 22:44	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	142	%	76-124	50	09/27/17 13:57	09/27/17 22:44	2037-26-5	ST
4-Bromofluorobenzene (S)	91	%	70-133	50	09/27/17 13:57	09/27/17 22:44	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	74-131	50	09/27/17 13:57	09/27/17 22:44	17060-07-0	
Dibromofluoromethane (S)	104	%	71-130	50	09/27/17 13:57	09/27/17 22:44	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>16.9</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-4@6'      **Lab ID:** 30230600008      Collected: 09/19/17 12:20      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>11600</b>	mg/kg	109	10	09/25/17 08:37	09/26/17 09:48	7429-90-5	
Antimony	ND	mg/kg	6.5	10	09/25/17 08:37	09/26/17 09:48	7440-36-0	
Arsenic	<b>6.0</b>	mg/kg	5.5	10	09/25/17 08:37	09/26/17 09:48	7440-38-2	
Barium	<b>332</b>	mg/kg	21.8	10	09/25/17 08:37	09/26/17 09:48	7440-39-3	
Beryllium	<b>4.7</b>	mg/kg	2.2	10	09/25/17 08:37	09/26/17 09:48	7440-41-7	
Boron	ND	mg/kg	54.6	10	09/25/17 08:37	09/26/17 09:48	7440-42-8	
Cadmium	ND	mg/kg	3.3	10	09/25/17 08:37	09/26/17 09:48	7440-43-9	
Calcium	<b>19100</b>	mg/kg	2180	10	09/25/17 08:37	09/26/17 09:48	7440-70-2	
Chromium	<b>12.8</b>	mg/kg	5.5	10	09/25/17 08:37	09/26/17 09:48	7440-47-3	
Cobalt	<b>9.5</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:40	7440-48-4	
Copper	<b>22.4</b>	mg/kg	10.9	10	09/25/17 08:37	09/26/17 09:48	7440-50-8	
Iron	<b>30000</b>	mg/kg	109	10	09/25/17 08:37	09/26/17 09:48	7439-89-6	
Lead	<b>40.9</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 08:40	7439-92-1	
Magnesium	<b>896</b>	mg/kg	546	10	09/25/17 08:37	09/26/17 09:48	7439-95-4	
Manganese	<b>2150</b>	mg/kg	10.9	10	09/25/17 08:37	09/26/17 09:48	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:40	7439-98-7	
Nickel	ND	mg/kg	21.8	10	09/25/17 08:37	09/26/17 09:48	7440-02-0	
Potassium	<b>674</b>	mg/kg	546	10	09/25/17 08:37	09/26/17 09:48	7440-09-7	
Selenium	ND	mg/kg	8.7	10	09/25/17 08:37	09/26/17 09:48	7782-49-2	
Silver	ND	mg/kg	6.5	10	09/25/17 08:37	09/26/17 09:48	7440-22-4	
Sodium	ND	mg/kg	5460	10	09/25/17 08:37	09/26/17 09:48	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:40	7440-28-0	
Vanadium	<b>24.0</b>	mg/kg	10.9	10	09/25/17 08:37	09/26/17 09:48	7440-62-2	
Zinc	<b>92.4</b>	mg/kg	10.9	10	09/25/17 08:37	09/26/17 09:48	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 10:13	09/25/17 18:55	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	208-96-8	
Anthracene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	50-32-8	IS
Benzo(b)fluoranthene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	191-24-2	IS
Benzo(k)fluoranthene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	59-50-7	
4-Chloroaniline	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Sample: IB-4@6' Lab ID: 30230600008 Collected: 09/19/17 12:20 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	7005-72-3	
Chrysene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	105-67-9	
Dimethylphthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	117-81-7	
Fluoranthene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	206-44-0	
Fluorene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	193-39-5	IS
Isophorone	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.80	1	09/26/17 23:38	10/04/17 03:32		
Naphthalene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	91-20-3	
2-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	88-74-4	
3-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	99-09-2	
4-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	98-95-3	
2-Nitrophenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	88-75-5	
4-Nitrophenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	86-30-6	
Pentachlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	87-86-5	
Phenanthrene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	85-01-8	
Phenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	108-95-2	
Pyrene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	120-82-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-4@6'      **Lab ID:** 30230600008      Collected: 09/19/17 12:20      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 03:32	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	09/26/17 23:38	10/04/17 03:32	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	69	%	10-175	1	09/26/17 23:38	10/04/17 03:32	4165-60-0	
2-Fluorobiphenyl (S)	67	%	10-151	1	09/26/17 23:38	10/04/17 03:32	321-60-8	
Terphenyl-d14 (S)	117	%	10-172	1	09/26/17 23:38	10/04/17 03:32	1718-51-0	
Phenol-d6 (S)	60	%	10-142	1	09/26/17 23:38	10/04/17 03:32	13127-88-3	
2-Fluorophenol (S)	59	%	10-138	1	09/26/17 23:38	10/04/17 03:32	367-12-4	
2,4,6-Tribromophenol (S)	56	%	10-144	1	09/26/17 23:38	10/04/17 03:32	118-79-6	
<b>Percent Moisture</b> Analytical Method: ASTM D2974-87								
Percent Moisture	<b>18.2</b>	%	0.10	1		09/23/17 10:29		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample: IB-5@1.5'**      **Lab ID: 3023060009**      Collected: 09/19/17 12:35      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>4650</b>	mg/kg	12.4	1	09/25/17 08:37	09/26/17 08:42	7429-90-5	
Antimony	<b>20.0</b>	mg/kg	0.74	1	09/25/17 08:37	09/26/17 08:42	7440-36-0	
Arsenic	<b>13.7</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:42	7440-38-2	
Barium	<b>268</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:42	7440-39-3	
Beryllium	<b>9.4</b>	mg/kg	0.25	1	09/25/17 08:37	09/26/17 08:42	7440-41-7	
Boron	<b>107</b>	mg/kg	6.2	1	09/25/17 08:37	09/26/17 08:42	7440-42-8	
Cadmium	<b>3.4</b>	mg/kg	0.37	1	09/25/17 08:37	09/26/17 08:42	7440-43-9	
Calcium	<b>5760</b>	mg/kg	248	1	09/25/17 08:37	09/26/17 08:42	7440-70-2	
Chromium	<b>154</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:42	7440-47-3	
Cobalt	<b>143</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:42	7440-48-4	
Copper	<b>392</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:42	7440-50-8	
Iron	<b>23100</b>	mg/kg	12.4	1	09/25/17 08:37	09/26/17 08:42	7439-89-6	
Lead	<b>942</b>	mg/kg	0.62	1	09/25/17 08:37	09/26/17 08:42	7439-92-1	
Magnesium	<b>1090</b>	mg/kg	62.0	1	09/25/17 08:37	09/26/17 08:42	7439-95-4	
Manganese	<b>1280</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:42	7439-96-5	
Molybdenum	<b>17.0</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:42	7439-98-7	
Nickel	<b>31.6</b>	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:42	7440-02-0	
Potassium	<b>409</b>	mg/kg	62.0	1	09/25/17 08:37	09/26/17 08:42	7440-09-7	
Selenium	ND	mg/kg	0.99	1	09/25/17 08:37	09/26/17 08:42	7782-49-2	
Silver	ND	mg/kg	0.74	1	09/25/17 08:37	09/26/17 08:42	7440-22-4	
Sodium	ND	mg/kg	620	1	09/25/17 08:37	09/26/17 08:42	7440-23-5	
Thallium	ND	mg/kg	2.5	1	09/25/17 08:37	09/26/17 08:42	7440-28-0	
Vanadium	<b>32.1</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:42	7440-62-2	
Zinc	<b>2770</b>	mg/kg	1.2	1	09/25/17 08:37	09/26/17 08:42	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	<b>5.8</b>	mg/kg	0.59	5	09/25/17 10:13	09/25/17 19:19	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	83-32-9	
Acenaphthylene	<b>1.1</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	208-96-8	
Anthracene	<b>1.1</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	120-12-7	
Benzo(a)anthracene	<b>1.7</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	56-55-3	
Benzo(a)pyrene	<b>2.3</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	50-32-8	IS
Benzo(b)fluoranthene	<b>4.6</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	205-99-2	IS
Benzo(g,h,i)perylene	<b>1.8</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	191-24-2	IS
Benzo(k)fluoranthene	<b>2.6</b>	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	59-50-7	
4-Chloroaniline	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	108-60-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-5@1.5' Lab ID: 30230600009 Collected: 09/19/17 12:35 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	91-58-7	
2-Chlorophenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	7005-72-3	
Chrysene	2.8	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	218-01-9	
Dibenz(a,h)anthracene	0.73	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	120-83-2	
Diethylphthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	105-67-9	
Dimethylphthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	117-81-7	
Fluoranthene	1.4	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	206-44-0	
Fluorene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	77-47-4	
Hexachloroethane	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	67-72-1	
Indeno(1,2,3-cd)pyrene	1.5	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	193-39-5	IS
Isophorone	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.88	1	09/26/17 23:38	10/04/17 03:53		
Naphthalene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	91-20-3	
2-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	88-74-4	
3-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	99-09-2	
4-Nitroaniline	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	98-95-3	
2-Nitrophenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	88-75-5	
4-Nitrophenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	86-30-6	
Pentachlorophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	87-86-5	
Phenanthrene	0.70	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	85-01-8	
Phenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	108-95-2	
Pyrene	8.1	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-5@1.5' Lab ID: 30230600009 Collected: 09/19/17 12:35 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.1	1	09/26/17 23:38	10/04/17 03:53	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.44	1	09/26/17 23:38	10/04/17 03:53	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	81	%	10-175	1	09/26/17 23:38	10/04/17 03:53	4165-60-0	
2-Fluorobiphenyl (S)	78	%	10-151	1	09/26/17 23:38	10/04/17 03:53	321-60-8	
Terphenyl-d14 (S)	189	%	10-172	1	09/26/17 23:38	10/04/17 03:53	1718-51-0	S0,ST
Phenol-d6 (S)	80	%	10-142	1	09/26/17 23:38	10/04/17 03:53	13127-88-3	
2-Fluorophenol (S)	86	%	10-138	1	09/26/17 23:38	10/04/17 03:53	367-12-4	
2,4,6-Tribromophenol (S)	90	%	10-144	1	09/26/17 23:38	10/04/17 03:53	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
Acetone	<b>0.027</b>	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	67-64-1	1c
Benzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-27-4	1c
Bromoform	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-25-2	1c
Bromomethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	74-83-9	1c
TOTAL BTEX	ND	mg/kg	0.034	1	09/27/17 13:56	09/27/17 20:58		
2-Butanone (MEK)	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	78-93-3	1c
Carbon disulfide	<b>0.018</b>	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	108-90-7	1c
Chloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-00-3	1c
Chloroform	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	67-66-3	1c
Chloromethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	10061-02-6	1c
Ethylbenzene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	100-41-4	1c
2-Hexanone	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	1634-04-4	1c
Styrene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	79-34-5	1c
Tetrachloroethene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	127-18-4	1c
Toluene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	108-88-3	1c

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample: IB-5@1.5'**      **Lab ID: 30230600009**      Collected: 09/19/17 12:35      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	79-00-5	1c
Trichloroethene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	75-01-4	1c
Xylene (Total)	ND	mg/kg	0.017	1	09/27/17 13:56	09/27/17 20:58	1330-20-7	
m&p-Xylene	ND	mg/kg	0.011	1	09/27/17 13:56	09/27/17 20:58	179601-23-1	1c
o-Xylene	ND	mg/kg	0.0057	1	09/27/17 13:56	09/27/17 20:58	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	94	%	76-124	1	09/27/17 13:56	09/27/17 20:58	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-133	1	09/27/17 13:56	09/27/17 20:58	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	74-131	1	09/27/17 13:56	09/27/17 20:58	17060-07-0	
Dibromofluoromethane (S)	104	%	71-130	1	09/27/17 13:56	09/27/17 20:58	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>25.3</b>	%	0.10	1		09/23/17 10:29		

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### ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-5@5' **Lab ID:** 30230600010 **Collected:** 09/19/17 13:00 **Received:** 09/20/17 23:30 **Matrix:** Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3050B						
Aluminum	<b>11000</b>	mg/kg	11.0	1	09/25/17 08:37	09/26/17 08:44	7429-90-5	
Antimony	ND	mg/kg	0.66	1	09/25/17 08:37	09/26/17 08:44	7440-36-0	
Arsenic	<b>6.7</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 08:44	7440-38-2	
Barium	<b>405</b>	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:44	7440-39-3	
Beryllium	<b>2.5</b>	mg/kg	0.22	1	09/25/17 08:37	09/26/17 08:44	7440-41-7	
Boron	ND	mg/kg	5.5	1	09/25/17 08:37	09/26/17 08:44	7440-42-8	
Cadmium	ND	mg/kg	0.33	1	09/25/17 08:37	09/26/17 08:44	7440-43-9	
Calcium	<b>2440</b>	mg/kg	220	1	09/25/17 08:37	09/26/17 08:44	7440-70-2	
Chromium	<b>11.7</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 08:44	7440-47-3	
Cobalt	<b>37.4</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:44	7440-48-4	
Copper	<b>56.0</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:44	7440-50-8	
Iron	<b>40600</b>	mg/kg	11.0	1	09/25/17 08:37	09/26/17 08:44	7439-89-6	
Lead	<b>29.7</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 08:44	7439-92-1	
Magnesium	<b>3880</b>	mg/kg	55.0	1	09/25/17 08:37	09/26/17 08:44	7439-95-4	
Manganese	<b>3040</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:44	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:44	7439-98-7	
Nickel	<b>20.5</b>	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:44	7440-02-0	
Potassium	<b>1650</b>	mg/kg	55.0	1	09/25/17 08:37	09/26/17 08:44	7440-09-7	
Selenium	ND	mg/kg	0.88	1	09/25/17 08:37	09/26/17 08:44	7782-49-2	
Silver	<b>0.87</b>	mg/kg	0.66	1	09/25/17 08:37	09/26/17 08:44	7440-22-4	
Sodium	ND	mg/kg	550	1	09/25/17 08:37	09/26/17 08:44	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 08:44	7440-28-0	
Vanadium	<b>29.8</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:44	7440-62-2	
Zinc	<b>231</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 08:44	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A Preparation Method: EPA 7471A						
Mercury	<b>0.11</b>	mg/kg	0.11	1	09/25/17 10:13	09/25/17 18:59	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	83-32-9	
Acenaphthylene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	208-96-8	
Anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	56-55-3	
Benzo(a)pyrene	<b>0.46</b>	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	50-32-8	IS
Benzo(b)fluoranthene	<b>0.51</b>	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	191-24-2	IS
Benzo(k)fluoranthene	<b>0.61</b>	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	59-50-7	
4-Chloroaniline	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	108-60-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-5@5' Lab ID: 30230600010 Collected: 09/19/17 13:00 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	91-58-7	
2-Chlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	7005-72-3	
Chrysene	0.44	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	120-83-2	
Diethylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	105-67-9	
Dimethylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	117-81-7	
Fluoranthene	0.53	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	206-44-0	
Fluorene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	77-47-4	
Hexachloroethane	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	193-39-5	IS
Isophorone	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.82	1	09/26/17 23:38	10/04/17 04:14		
Naphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	91-20-3	
2-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	88-74-4	
3-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	99-09-2	
4-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	98-95-3	
2-Nitrophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	88-75-5	
4-Nitrophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	86-30-6	
Pentachlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	87-86-5	
Phenanthrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	85-01-8	
Phenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	108-95-2	
Pyrene	0.91	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-5@5'      **Lab ID:** 30230600010      Collected: 09/19/17 13:00      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:14	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:14	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	78	%	10-175	1	09/26/17 23:38	10/04/17 04:14	4165-60-0	
2-Fluorobiphenyl (S)	80	%	10-151	1	09/26/17 23:38	10/04/17 04:14	321-60-8	
Terphenyl-d14 (S)	142	%	10-172	1	09/26/17 23:38	10/04/17 04:14	1718-51-0	
Phenol-d6 (S)	78	%	10-142	1	09/26/17 23:38	10/04/17 04:14	13127-88-3	
2-Fluorophenol (S)	81	%	10-138	1	09/26/17 23:38	10/04/17 04:14	367-12-4	
2,4,6-Tribromophenol (S)	83	%	10-144	1	09/26/17 23:38	10/04/17 04:14	118-79-6	
<b>Percent Moisture</b> Analytical Method: ASTM D2974-87								
Percent Moisture	<b>18.8</b>	%	0.10	1		09/23/17 10:29		

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

**Sample:** IB-6@1'      **Lab ID:** 30230600011      Collected: 09/19/17 13:10      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010B      Preparation Method: EPA 3050B								
Aluminum	4660	mg/kg	10.5	1	09/25/17 08:37	09/26/17 09:40	7429-90-5	
Antimony	167	mg/kg	0.63	1	09/25/17 08:37	09/26/17 09:40	7440-36-0	
Arsenic	16.1	mg/kg	0.52	1	09/25/17 08:37	09/26/17 09:40	7440-38-2	
Barium	464	mg/kg	2.1	1	09/25/17 08:37	09/26/17 09:40	7440-39-3	
Beryllium	0.57	mg/kg	0.21	1	09/25/17 08:37	09/26/17 09:40	7440-41-7	
Boron	6.5	mg/kg	5.2	1	09/25/17 08:37	09/26/17 09:40	7440-42-8	
Cadmium	1.5	mg/kg	0.31	1	09/25/17 08:37	09/26/17 09:40	7440-43-9	
Calcium	8570	mg/kg	210	1	09/25/17 08:37	09/26/17 09:40	7440-70-2	
Chromium	30.7	mg/kg	0.52	1	09/25/17 08:37	09/26/17 09:40	7440-47-3	
Cobalt	8.0	mg/kg	1.0	1	09/25/17 08:37	09/26/17 09:40	7440-48-4	
Copper	358	mg/kg	1.0	1	09/25/17 08:37	09/26/17 09:40	7440-50-8	
Iron	35900	mg/kg	10.5	1	09/25/17 08:37	09/26/17 09:40	7439-89-6	
Lead	8940	mg/kg	0.52	1	09/25/17 08:37	09/26/17 09:40	7439-92-1	
Magnesium	855	mg/kg	52.4	1	09/25/17 08:37	09/26/17 09:40	7439-95-4	
Manganese	164	mg/kg	1.0	1	09/25/17 08:37	09/26/17 09:40	7439-96-5	
Molybdenum	3.7	mg/kg	2.1	1	09/25/17 08:37	09/26/17 09:40	7439-98-7	
Nickel	17.2	mg/kg	2.1	1	09/25/17 08:37	09/26/17 09:40	7440-02-0	
Potassium	566	mg/kg	52.4	1	09/25/17 08:37	09/26/17 09:40	7440-09-7	
Selenium	1.4	mg/kg	0.84	1	09/25/17 08:37	09/26/17 09:40	7782-49-2	
Silver	ND	mg/kg	0.63	1	09/25/17 08:37	09/26/17 09:40	7440-22-4	
Sodium	ND	mg/kg	524	1	09/25/17 08:37	09/26/17 09:40	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 08:37	09/26/17 09:40	7440-28-0	
Vanadium	16.0	mg/kg	1.0	1	09/25/17 08:37	09/26/17 09:40	7440-62-2	
Zinc	446	mg/kg	1.0	1	09/25/17 08:37	09/26/17 09:40	7440-66-6	
<b>7471 Mercury</b> Analytical Method: EPA 7471A      Preparation Method: EPA 7471A								
Mercury	2.2	mg/kg	0.11	1	09/25/17 10:13	09/25/17 19:01	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
Acenaphthene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	83-32-9	ED
Acenaphthylene	8.4	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	208-96-8	ED
Anthracene	204	mg/kg	19.9	50	09/26/17 23:38	10/05/17 13:10	120-12-7	ED
Benzo(a)anthracene	44.7	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	56-55-3	ED
Benzo(a)pyrene	43.9	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	50-32-8	ED,IS
Benzo(b)fluoranthene	60.1	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	205-99-2	ED,IS
Benzo(g,h,i)perylene	12.2	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	191-24-2	ED,IS
Benzo(k)fluoranthene	68.5	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	207-08-9	ED,IS
Benzyl alcohol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	100-51-6	ED
4-Bromophenylphenyl ether	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	101-55-3	ED
Butylbenzylphthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	85-68-7	ED
4-Chloro-3-methylphenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	59-50-7	ED
4-Chloroaniline	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	106-47-8	2c,ED
bis(2-Chloroethoxy)methane	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	111-91-1	ED
bis(2-Chloroethyl) ether	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	111-44-4	ED
bis(2-Chloroisopropyl) ether	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	108-60-1	ED

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### ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Sample: IB-6@1' Lab ID: 30230600011 Collected: 09/19/17 13:10 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	91-58-7	ED
2-Chlorophenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	95-57-8	ED
4-Chlorophenylphenyl ether	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	7005-72-3	ED
Chrysene	49.8	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	218-01-9	ED
Dibenz(a,h)anthracene	5.4	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	53-70-3	ED, IS
Dibenzofuran	6.0	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	132-64-9	ED
1,2-Dichlorobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	95-50-1	ED
1,3-Dichlorobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	541-73-1	ED
1,4-Dichlorobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	106-46-7	ED
3,3'-Dichlorobenzidine	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	91-94-1	2c, ED
2,4-Dichlorophenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	120-83-2	ED
Diethylphthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	84-66-2	ED
2,4-Dimethylphenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	105-67-9	ED
Dimethylphthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	131-11-3	ED
Di-n-butylphthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	84-74-2	ED
4,6-Dinitro-2-methylphenol	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	534-52-1	ED
2,4-Dinitrophenol	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	51-28-5	ED
2,4-Dinitrotoluene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	121-14-2	ED
2,6-Dinitrotoluene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	606-20-2	ED
Di-n-octylphthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	117-84-0	ED, IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	117-81-7	ED
Fluoranthene	111	mg/kg	19.9	50	09/26/17 23:38	10/05/17 13:10	206-44-0	ED
Fluorene	13.5	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	86-73-7	ED
Hexachloro-1,3-butadiene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	87-68-3	ED
Hexachlorobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	118-74-1	ED
Hexachlorocyclopentadiene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	77-47-4	ED
Hexachloroethane	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	67-72-1	ED
Indeno(1,2,3-cd)pyrene	14.9	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	193-39-5	ED, IS
Isophorone	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	78-59-1	ED
2-Methylnaphthalene	7.3	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	91-57-6	ED
2-Methylphenol(o-Cresol)	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	95-48-7	ED
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	8.0	10	09/26/17 23:38	10/04/17 04:36		ED
Naphthalene	8.1	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	91-20-3	ED
2-Nitroaniline	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	88-74-4	ED
3-Nitroaniline	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	99-09-2	ED
4-Nitroaniline	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	100-01-6	3c, ED
Nitrobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	98-95-3	ED
2-Nitrophenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	88-75-5	ED
4-Nitrophenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	100-02-7	ED
N-Nitroso-di-n-propylamine	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	621-64-7	ED
N-Nitrosodiphenylamine	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	86-30-6	ED
Pentachlorophenol	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	87-86-5	ED
Phenanthrene	100	mg/kg	19.9	50	09/26/17 23:38	10/05/17 13:10	85-01-8	ED
Phenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	108-95-2	ED
Pyrene	79.2	mg/kg	19.9	50	09/26/17 23:38	10/05/17 13:10	129-00-0	ED
1,2,4-Trichlorobenzene	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	120-82-1	ED

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-6@1'      **Lab ID:** 30230600011      Collected: 09/19/17 13:10      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**8270 MSSV FULL LIST MICROWAVE**      Analytical Method: EPA 8270C      Preparation Method: EPA 3546

2,4,5-Trichlorophenol	ND	mg/kg	10	10	09/26/17 23:38	10/04/17 04:36	95-95-4	ED
2,4,6-Trichlorophenol	ND	mg/kg	4.0	10	09/26/17 23:38	10/04/17 04:36	88-06-2	ED
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	74	%	10-175	10	09/26/17 23:38	10/04/17 04:36	4165-60-0	
2-Fluorobiphenyl (S)	71	%	10-151	10	09/26/17 23:38	10/04/17 04:36	321-60-8	
Terphenyl-d14 (S)	151	%	10-172	10	09/26/17 23:38	10/04/17 04:36	1718-51-0	
Phenol-d6 (S)	69	%	10-142	10	09/26/17 23:38	10/04/17 04:36	13127-88-3	
2-Fluorophenol (S)	75	%	10-138	10	09/26/17 23:38	10/04/17 04:36	367-12-4	
2,4,6-Tribromophenol (S)	61	%	10-144	10	09/26/17 23:38	10/04/17 04:36	118-79-6	

**8260B MSV 5035 Low Level**      Analytical Method: EPA 8260B      Preparation Method: EPA 5035A

Acetone	<b>0.19</b>	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	67-64-1	1c
Benzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	71-43-2	1c
Bromodichloromethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-27-4	1c
Bromoform	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-25-2	1c
Bromomethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	74-83-9	1c
TOTAL BTEX	ND	mg/kg	0.038	1	09/27/17 13:56	09/27/17 21:51		
2-Butanone (MEK)	<b>0.017</b>	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	78-93-3	1c
Carbon disulfide	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-15-0	1c
Carbon tetrachloride	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	56-23-5	1c
Chlorobenzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	108-90-7	1c
Chloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-00-3	1c
Chloroform	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	67-66-3	1c
Chloromethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	74-87-3	1c
Dibromochloromethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	124-48-1	1c
1,2-Dichlorobenzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	95-50-1	1c
1,3-Dichlorobenzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	541-73-1	1c
1,4-Dichlorobenzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	106-46-7	1c
1,1-Dichloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-34-3	1c
1,2-Dichloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	107-06-2	1c
1,2-Dichloroethene (Total)	ND	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-35-4	1c
cis-1,2-Dichloroethene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	156-59-2	1c
trans-1,2-Dichloroethene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	156-60-5	1c
1,2-Dichloropropane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	78-87-5	1c
cis-1,3-Dichloropropene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	10061-01-5	1c
trans-1,3-Dichloropropene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	10061-02-6	1c
Ethylbenzene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	100-41-4	1c
2-Hexanone	ND	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	591-78-6	1c
Methylene Chloride	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-09-2	1c
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	108-10-1	1c
Methyl-tert-butyl ether	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	1634-04-4	1c
Styrene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	100-42-5	1c
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	79-34-5	1c
Tetrachloroethene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	127-18-4	1c
Toluene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	108-88-3	1c

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-6@1'      **Lab ID:** 30230600011      Collected: 09/19/17 13:10      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	71-55-6	1c
1,1,2-Trichloroethane	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	79-00-5	1c
Trichloroethene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	79-01-6	1c
Vinyl chloride	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	75-01-4	1c
Xylene (Total)	ND	mg/kg	0.019	1	09/27/17 13:56	09/27/17 21:51	1330-20-7	
m&p-Xylene	ND	mg/kg	0.013	1	09/27/17 13:56	09/27/17 21:51	179601-23-1	1c
o-Xylene	ND	mg/kg	0.0063	1	09/27/17 13:56	09/27/17 21:51	95-47-6	1c
<b>Surrogates</b>								
Toluene-d8 (S)	97	%	76-124	1	09/27/17 13:56	09/27/17 21:51	2037-26-5	
4-Bromofluorobenzene (S)	112	%	70-133	1	09/27/17 13:56	09/27/17 21:51	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	74-131	1	09/27/17 13:56	09/27/17 21:51	17060-07-0	
Dibromofluoromethane (S)	106	%	71-130	1	09/27/17 13:56	09/27/17 21:51	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>17.7</b>	%	0.10	1		09/23/17 10:29		

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample: IB-6@5'**      **Lab ID: 30230600012**      Collected: 09/19/17 13:30      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>15200</b>	mg/kg	10.9	1	09/25/17 08:37	09/26/17 09:42	7429-90-5	
Antimony	ND	mg/kg	0.66	1	09/25/17 08:37	09/26/17 09:42	7440-36-0	
Arsenic	<b>7.7</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 09:42	7440-38-2	
Barium	<b>56.3</b>	mg/kg	2.2	1	09/25/17 08:37	09/26/17 09:42	7440-39-3	
Beryllium	<b>1.5</b>	mg/kg	0.22	1	09/25/17 08:37	09/26/17 09:42	7440-41-7	
Boron	ND	mg/kg	5.5	1	09/25/17 08:37	09/26/17 09:42	7440-42-8	
Cadmium	ND	mg/kg	0.33	1	09/25/17 08:37	09/26/17 09:42	7440-43-9	
Calcium	<b>942</b>	mg/kg	219	1	09/25/17 08:37	09/26/17 09:42	7440-70-2	
Chromium	<b>24.6</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 09:42	7440-47-3	
Cobalt	<b>14.2</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 09:42	7440-48-4	
Copper	<b>20.2</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 09:42	7440-50-8	
Iron	<b>32700</b>	mg/kg	10.9	1	09/25/17 08:37	09/26/17 09:42	7439-89-6	
Lead	<b>12.8</b>	mg/kg	0.55	1	09/25/17 08:37	09/26/17 09:42	7439-92-1	
Magnesium	<b>2580</b>	mg/kg	54.7	1	09/25/17 08:37	09/26/17 09:42	7439-95-4	
Manganese	<b>656</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 09:42	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 09:42	7439-98-7	
Nickel	<b>17.8</b>	mg/kg	2.2	1	09/25/17 08:37	09/26/17 09:42	7440-02-0	
Potassium	<b>1170</b>	mg/kg	54.7	1	09/25/17 08:37	09/26/17 09:42	7440-09-7	
Selenium	ND	mg/kg	0.87	1	09/25/17 08:37	09/26/17 09:42	7782-49-2	
Silver	ND	mg/kg	0.66	1	09/25/17 08:37	09/26/17 09:42	7440-22-4	
Sodium	ND	mg/kg	547	1	09/25/17 08:37	09/26/17 09:42	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 08:37	09/26/17 09:42	7440-28-0	
Vanadium	<b>42.8</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 09:42	7440-62-2	
Zinc	<b>54.5</b>	mg/kg	1.1	1	09/25/17 08:37	09/26/17 09:42	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	09/25/17 10:13	09/25/17 19:03	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	83-32-9	
Acenaphthylene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	208-96-8	
Anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	50-32-8	IS
Benzo(b)fluoranthene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	205-99-2	IS
Benzo(g,h,i)perylene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	191-24-2	IS
Benzo(k)fluoranthene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	207-08-9	IS
Benzyl alcohol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	59-50-7	
4-Chloroaniline	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	106-47-8	2c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

Sample: IB-6@5' Lab ID: 30230600012 Collected: 09/19/17 13:30 Received: 09/20/17 23:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	91-58-7	
2-Chlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	7005-72-3	
Chrysene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	53-70-3	IS
Dibenzofuran	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	91-94-1	2c
2,4-Dichlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	120-83-2	
Diethylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	105-67-9	
Dimethylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	117-84-0	IS
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	117-81-7	
Fluoranthene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	206-44-0	
Fluorene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	77-47-4	
Hexachloroethane	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	193-39-5	IS
Isophorone	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.81	1	09/26/17 23:38	10/04/17 04:57		
Naphthalene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	91-20-3	
2-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	88-74-4	
3-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	99-09-2	
4-Nitroaniline	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	100-01-6	3c
Nitrobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	98-95-3	
2-Nitrophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	88-75-5	
4-Nitrophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	86-30-6	
Pentachlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	87-86-5	
Phenanthrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	85-01-8	
Phenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	108-95-2	
Pyrene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

**Sample:** IB-6@5'      **Lab ID:** 30230600012      Collected: 09/19/17 13:30      Received: 09/20/17 23:30      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.0	1	09/26/17 23:38	10/04/17 04:57	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.41	1	09/26/17 23:38	10/04/17 04:57	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	78	%	10-175	1	09/26/17 23:38	10/04/17 04:57	4165-60-0	
2-Fluorobiphenyl (S)	77	%	10-151	1	09/26/17 23:38	10/04/17 04:57	321-60-8	
Terphenyl-d14 (S)	149	%	10-172	1	09/26/17 23:38	10/04/17 04:57	1718-51-0	
Phenol-d6 (S)	81	%	10-142	1	09/26/17 23:38	10/04/17 04:57	13127-88-3	
2-Fluorophenol (S)	82	%	10-138	1	09/26/17 23:38	10/04/17 04:57	367-12-4	
2,4,6-Tribromophenol (S)	72	%	10-144	1	09/26/17 23:38	10/04/17 04:57	118-79-6	
<b>Percent Moisture</b> Analytical Method: ASTM D2974-87								
Percent Moisture	<b>18.4</b>	%	0.10	1		09/23/17 10:29		

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

QC Batch: 272886 Analysis Method: EPA 6010B  
 QC Batch Method: EPA 3050B Analysis Description: 6010 MET  
 Associated Lab Samples: 30230600001, 30230600002, 30230600003, 30230600004, 30230600005, 30230600006, 30230600007, 30230600008, 30230600009, 30230600010, 30230600011, 30230600012

METHOD BLANK: 1342853 Matrix: Solid  
 Associated Lab Samples: 30230600001, 30230600002, 30230600003, 30230600004, 30230600005, 30230600006, 30230600007, 30230600008, 30230600009, 30230600010, 30230600011, 30230600012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	9.8	09/26/17 07:59	
Antimony	mg/kg	ND	0.59	09/26/17 07:59	
Arsenic	mg/kg	ND	0.49	09/26/17 07:59	
Barium	mg/kg	ND	2.0	09/26/17 07:59	
Beryllium	mg/kg	ND	0.20	09/26/17 07:59	
Boron	mg/kg	ND	4.9	09/26/17 07:59	
Cadmium	mg/kg	ND	0.29	09/26/17 07:59	
Calcium	mg/kg	ND	196	09/26/17 07:59	
Chromium	mg/kg	ND	0.49	09/26/17 07:59	
Cobalt	mg/kg	ND	0.98	09/26/17 07:59	
Copper	mg/kg	ND	0.98	09/26/17 07:59	
Iron	mg/kg	ND	9.8	09/26/17 07:59	
Lead	mg/kg	ND	0.49	09/26/17 07:59	
Magnesium	mg/kg	ND	49.0	09/26/17 07:59	
Manganese	mg/kg	ND	0.98	09/26/17 07:59	
Molybdenum	mg/kg	ND	2.0	09/26/17 07:59	
Nickel	mg/kg	ND	2.0	09/26/17 07:59	
Potassium	mg/kg	ND	49.0	09/26/17 07:59	
Selenium	mg/kg	ND	0.78	09/26/17 07:59	
Silver	mg/kg	ND	0.59	09/26/17 07:59	
Sodium	mg/kg	ND	490	09/26/17 07:59	
Thallium	mg/kg	ND	2.0	09/26/17 07:59	
Vanadium	mg/kg	ND	0.98	09/26/17 07:59	
Zinc	mg/kg	ND	0.98	09/26/17 07:59	

LABORATORY CONTROL SAMPLE: 1342854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	490	472	96	80-120	
Antimony	mg/kg	49	51.5	105	80-120	
Arsenic	mg/kg	49	49.0	100	80-120	
Barium	mg/kg	49	48.6	99	80-120	
Beryllium	mg/kg	49	49.7	101	80-120	
Boron	mg/kg	49	50.5	103	80-120	
Cadmium	mg/kg	49	51.4	105	80-120	
Calcium	mg/kg	490	495	101	80-120	
Chromium	mg/kg	49	51.7	105	80-120	
Cobalt	mg/kg	49	48.8	100	80-120	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

LABORATORY CONTROL SAMPLE: 1342854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/kg	49	50.6	103	80-120	
Iron	mg/kg	490	498	102	80-120	
Lead	mg/kg	49	47.7	97	80-120	
Magnesium	mg/kg	490	484	99	80-120	
Manganese	mg/kg	49	48.9	100	80-120	
Molybdenum	mg/kg	49	52.4	107	80-120	
Nickel	mg/kg	49	53.5	109	80-120	
Potassium	mg/kg	490	485	99	80-120	
Selenium	mg/kg	49	49.3	101	80-120	
Silver	mg/kg	24.5	25.4	103	80-120	
Sodium	mg/kg	490	ND	100	80-120	
Thallium	mg/kg	49	48.3	98	80-120	
Vanadium	mg/kg	49	53.7	109	80-120	
Zinc	mg/kg	49	52.1	106	80-120	

MATRIX SPIKE SAMPLE: 1342856

Parameter	Units	30230712001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	10600	877	11900	151	75-125	MH
Antimony	mg/kg	ND	87.7	82.8J	77	75-125	
Arsenic	mg/kg	ND	87.7	168	152	75-125	MH
Barium	mg/kg	ND	87.7	97.7J	101	75-125	
Beryllium	mg/kg	ND	87.7	91.7	100	75-125	
Boron	mg/kg	ND	87.7	113J	107	75-125	
Cadmium	mg/kg	ND	87.7	121	120	75-125	
Calcium	mg/kg	ND	877	6700J	58	75-125	ML
Chromium	mg/kg	ND	87.7	114	113	75-125	
Cobalt	mg/kg	ND	87.7	96.2J	104	75-125	
Copper	mg/kg	ND	87.7	61.6J	70	75-125	ML
Iron	mg/kg	10400	877	11000	73	75-125	ML
Lead	mg/kg	ND	87.7	62.5J	36	75-125	ML
Magnesium	mg/kg	ND	877	1590J	173	75-125	MH
Manganese	mg/kg	ND	87.7	115J	103	75-125	
Molybdenum	mg/kg	ND	87.7	77.5J	70	75-125	ML
Nickel	mg/kg	ND	87.7	135J	147	75-125	MH
Potassium	mg/kg	ND	877	846J	97	75-125	
Selenium	mg/kg	83500	87.7	83500	-46	75-125	ML
Silver	mg/kg	ND	43.7	55.6J	107	75-125	
Sodium	mg/kg	ND	877	ND	171	75-125	MH
Thallium	mg/kg	ND	87.7	ND	66	75-125	ML
Vanadium	mg/kg	ND	87.7	101J	112	75-125	
Zinc	mg/kg	173000	87.7	171000	-2390	75-125	ML

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

SAMPLE DUPLICATE: 1342855

Parameter	Units	30230712001 Result	Dup Result	RPD	Qualifiers
Aluminum	mg/kg	10600	10300	3	
Antimony	mg/kg	ND	ND		
Arsenic	mg/kg	ND	ND		
Barium	mg/kg	ND	ND		
Beryllium	mg/kg	ND	ND		
Boron	mg/kg	ND	22J		
Cadmium	mg/kg	ND	17.1J		
Calcium	mg/kg	ND	5900J		
Chromium	mg/kg	ND	ND		
Cobalt	mg/kg	ND	ND		
Copper	mg/kg	ND	ND		
Iron	mg/kg	10400	9940	4	
Lead	mg/kg	ND	ND		
Magnesium	mg/kg	ND	ND		
Manganese	mg/kg	ND	ND		
Molybdenum	mg/kg	ND	ND		
Nickel	mg/kg	ND	ND		
Potassium	mg/kg	ND	ND		
Selenium	mg/kg	83500	82600	1	
Silver	mg/kg	ND	ND		
Sodium	mg/kg	ND	ND		
Thallium	mg/kg	ND	ND		
Vanadium	mg/kg	ND	ND		
Zinc	mg/kg	173000	170000	1	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

QC Batch: 273321

Analysis Method: EPA 8260B

QC Batch Method: EPA 5035A

Analysis Description: 8260B MSV 5035 Low

Associated Lab Samples: 30230600001, 30230600004, 30230600005, 30230600009, 30230600011

METHOD BLANK: 1344437

Matrix: Solid

Associated Lab Samples: 30230600001, 30230600004, 30230600005, 30230600009, 30230600011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
1,1,2-Trichloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
1,1-Dichloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
1,1-Dichloroethene	mg/kg	ND	0.0050	09/27/17 14:21	
1,2-Dichlorobenzene	mg/kg	ND	0.0050	09/27/17 14:21	
1,2-Dichloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
1,2-Dichloroethene (Total)	mg/kg	ND	0.010	09/27/17 14:21	
1,2-Dichloropropane	mg/kg	ND	0.0050	09/27/17 14:21	
1,3-Dichlorobenzene	mg/kg	ND	0.0050	09/27/17 14:21	
1,4-Dichlorobenzene	mg/kg	ND	0.0050	09/27/17 14:21	
2-Butanone (MEK)	mg/kg	ND	0.010	09/27/17 14:21	
2-Hexanone	mg/kg	ND	0.010	09/27/17 14:21	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.010	09/27/17 14:21	
Acetone	mg/kg	ND	0.010	09/27/17 14:21	
Benzene	mg/kg	ND	0.0050	09/27/17 14:21	
Bromodichloromethane	mg/kg	ND	0.0050	09/27/17 14:21	
Bromoform	mg/kg	ND	0.0050	09/27/17 14:21	
Bromomethane	mg/kg	ND	0.0050	09/27/17 14:21	
Carbon disulfide	mg/kg	ND	0.0050	09/27/17 14:21	
Carbon tetrachloride	mg/kg	ND	0.0050	09/27/17 14:21	
Chlorobenzene	mg/kg	ND	0.0050	09/27/17 14:21	
Chloroethane	mg/kg	ND	0.0050	09/27/17 14:21	
Chloroform	mg/kg	ND	0.0050	09/27/17 14:21	
Chloromethane	mg/kg	ND	0.0050	09/27/17 14:21	
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	09/27/17 14:21	
cis-1,3-Dichloropropene	mg/kg	ND	0.0050	09/27/17 14:21	
Dibromochloromethane	mg/kg	ND	0.0050	09/27/17 14:21	
Ethylbenzene	mg/kg	ND	0.0050	09/27/17 14:21	
m&p-Xylene	mg/kg	ND	0.010	09/27/17 14:21	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	09/27/17 14:21	
Methylene Chloride	mg/kg	ND	0.0050	09/27/17 14:21	
o-Xylene	mg/kg	ND	0.0050	09/27/17 14:21	
Styrene	mg/kg	ND	0.0050	09/27/17 14:21	
Tetrachloroethene	mg/kg	ND	0.0050	09/27/17 14:21	
Toluene	mg/kg	ND	0.0050	09/27/17 14:21	
TOTAL BTEX	mg/kg	ND	0.030	09/27/17 14:21	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	09/27/17 14:21	
trans-1,3-Dichloropropene	mg/kg	ND	0.0050	09/27/17 14:21	
Trichloroethene	mg/kg	ND	0.0050	09/27/17 14:21	
Vinyl chloride	mg/kg	ND	0.0050	09/27/17 14:21	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

METHOD BLANK: 1344437

Matrix: Solid

Associated Lab Samples: 30230600001, 30230600004, 30230600005, 30230600009, 30230600011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Xylene (Total)	mg/kg	ND	0.015	09/27/17 14:21	
1,2-Dichloroethane-d4 (S)	%	99	74-131	09/27/17 14:21	
4-Bromofluorobenzene (S)	%	98	70-133	09/27/17 14:21	
Dibromofluoromethane (S)	%	101	71-130	09/27/17 14:21	
Toluene-d8 (S)	%	96	76-124	09/27/17 14:21	

LABORATORY CONTROL SAMPLE: 1344438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg		0.017			
1,1,2,2-Tetrachloroethane	mg/kg		0.017			
1,1,2-Trichloroethane	mg/kg		0.017			
1,1-Dichloroethane	mg/kg		0.018			
1,1-Dichloroethene	mg/kg		0.018			
1,2-Dichlorobenzene	mg/kg		0.017			
1,2-Dichloroethane	mg/kg		0.018			
1,2-Dichloroethene (Total)	mg/kg		0.035			
1,2-Dichloropropane	mg/kg		0.018			
1,3-Dichlorobenzene	mg/kg		0.017			
1,4-Dichlorobenzene	mg/kg		0.016			
2-Butanone (MEK)	mg/kg		0.025			
2-Hexanone	mg/kg		0.020			
4-Methyl-2-pentanone (MIBK)	mg/kg		0.021			
Acetone	mg/kg		0.020			
Benzene	mg/kg		0.018			
Bromodichloromethane	mg/kg		0.018			
Bromoform	mg/kg		0.016			
Bromomethane	mg/kg		0.018			
Carbon disulfide	mg/kg		0.019			
Carbon tetrachloride	mg/kg		0.017			
Chlorobenzene	mg/kg		0.018			
Chloroethane	mg/kg		0.016			
Chloroform	mg/kg		0.017			
Chloromethane	mg/kg		0.016			
cis-1,2-Dichloroethene	mg/kg		0.018			
cis-1,3-Dichloropropene	mg/kg		0.018			
Dibromochloromethane	mg/kg		0.018			
Ethylbenzene	mg/kg		0.018			
m&p-Xylene	mg/kg		0.035			
Methyl-tert-butyl ether	mg/kg		0.020			
Methylene Chloride	mg/kg		0.019			
o-Xylene	mg/kg		0.017			
Styrene	mg/kg		0.018			
Tetrachloroethene	mg/kg		0.017			

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

LABORATORY CONTROL SAMPLE: 1344438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	mg/kg		0.017			
TOTAL BTEX	mg/kg		0.11			
trans-1,2-Dichloroethene	mg/kg		0.017			
trans-1,3-Dichloropropene	mg/kg		0.017			
Trichloroethene	mg/kg		0.016			
Vinyl chloride	mg/kg		0.016			
Xylene (Total)	mg/kg		0.053			
1,2-Dichloroethane-d4 (S)	%			99	74-131	
4-Bromofluorobenzene (S)	%			96	70-133	
Dibromofluoromethane (S)	%			102	71-130	
Toluene-d8 (S)	%			97	76-124	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

QC Batch: 273322

Analysis Method: EPA 8260B

QC Batch Method: EPA 5035A

Analysis Description: 8260B MSV 5035 Low

Associated Lab Samples: 30230600003, 30230600007

METHOD BLANK: 1344441

Matrix: Solid

Associated Lab Samples: 30230600003, 30230600007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	0.25	09/27/17 13:55	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.25	09/27/17 13:55	
1,1,2-Trichloroethane	mg/kg	ND	0.25	09/27/17 13:55	
1,1-Dichloroethane	mg/kg	ND	0.25	09/27/17 13:55	
1,1-Dichloroethene	mg/kg	ND	0.25	09/27/17 13:55	
1,2-Dichlorobenzene	mg/kg	ND	0.25	09/27/17 13:55	
1,2-Dichloroethane	mg/kg	ND	0.25	09/27/17 13:55	
1,2-Dichloroethene (Total)	mg/kg	ND	0.50	09/27/17 13:55	
1,2-Dichloropropane	mg/kg	ND	0.25	09/27/17 13:55	
1,3-Dichlorobenzene	mg/kg	ND	0.25	09/27/17 13:55	
1,4-Dichlorobenzene	mg/kg	ND	0.25	09/27/17 13:55	
2-Butanone (MEK)	mg/kg	ND	0.50	09/27/17 13:55	
2-Hexanone	mg/kg	ND	0.50	09/27/17 13:55	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.50	09/27/17 13:55	
Acetone	mg/kg	ND	0.50	09/27/17 13:55	
Benzene	mg/kg	ND	0.25	09/27/17 13:55	
Bromodichloromethane	mg/kg	ND	0.25	09/27/17 13:55	
Bromoform	mg/kg	ND	0.25	09/27/17 13:55	
Bromomethane	mg/kg	ND	0.25	09/27/17 13:55	
Carbon disulfide	mg/kg	ND	0.25	09/27/17 13:55	
Carbon tetrachloride	mg/kg	ND	0.25	09/27/17 13:55	
Chlorobenzene	mg/kg	ND	0.25	09/27/17 13:55	
Chloroethane	mg/kg	ND	0.25	09/27/17 13:55	
Chloroform	mg/kg	ND	0.25	09/27/17 13:55	
Chloromethane	mg/kg	ND	0.25	09/27/17 13:55	
cis-1,2-Dichloroethene	mg/kg	ND	0.25	09/27/17 13:55	
cis-1,3-Dichloropropene	mg/kg	ND	0.25	09/27/17 13:55	
Dibromochloromethane	mg/kg	ND	0.25	09/27/17 13:55	
Ethylbenzene	mg/kg	ND	0.25	09/27/17 13:55	
m&p-Xylene	mg/kg	ND	0.50	09/27/17 13:55	
Methyl-tert-butyl ether	mg/kg	ND	0.25	09/27/17 13:55	
Methylene Chloride	mg/kg	ND	0.25	09/27/17 13:55	
o-Xylene	mg/kg	ND	0.25	09/27/17 13:55	
Styrene	mg/kg	ND	0.25	09/27/17 13:55	
Tetrachloroethene	mg/kg	ND	0.25	09/27/17 13:55	
Toluene	mg/kg	ND	0.25	09/27/17 13:55	
TOTAL BTEX	mg/kg	ND	1.5	09/27/17 13:55	
trans-1,2-Dichloroethene	mg/kg	ND	0.25	09/27/17 13:55	
trans-1,3-Dichloropropene	mg/kg	ND	0.25	09/27/17 13:55	
Trichloroethene	mg/kg	ND	0.25	09/27/17 13:55	
Vinyl chloride	mg/kg	ND	0.25	09/27/17 13:55	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

METHOD BLANK: 1344441

Matrix: Solid

Associated Lab Samples: 30230600003, 30230600007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Xylene (Total)	mg/kg	ND	0.75	09/27/17 13:55	
1,2-Dichloroethane-d4 (S)	%	98	74-131	09/27/17 13:55	
4-Bromofluorobenzene (S)	%	94	70-133	09/27/17 13:55	
Dibromofluoromethane (S)	%	99	71-130	09/27/17 13:55	
Toluene-d8 (S)	%	94	76-124	09/27/17 13:55	

LABORATORY CONTROL SAMPLE: 1344442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	.02	0.017	86	70-130	
1,1,2,2-Tetrachloroethane	mg/kg	.02	0.017	86	70-130	
1,1,2-Trichloroethane	mg/kg	.02	0.017	87	70-130	
1,1-Dichloroethane	mg/kg	.02	0.018	90	70-130	
1,1-Dichloroethene	mg/kg	.02	0.018	90	70-130	
1,2-Dichlorobenzene	mg/kg	.02	0.017	84	70-130	
1,2-Dichloroethane	mg/kg	.02	0.018	91	70-130	
1,2-Dichloroethene (Total)	mg/kg	.04	0.035	87	70-130	
1,2-Dichloropropane	mg/kg	.02	0.018	88	70-130	
1,3-Dichlorobenzene	mg/kg	.02	0.017	85	70-130	
1,4-Dichlorobenzene	mg/kg	.02	0.016	82	70-130	
2-Butanone (MEK)	mg/kg	.02	0.025	126	65-137	
2-Hexanone	mg/kg	.02	0.020	99	70-130	
4-Methyl-2-pentanone (MIBK)	mg/kg	.02	0.021	103	70-130	
Acetone	mg/kg	.02	0.020	98	49-158	
Benzene	mg/kg	.02	0.018	91	70-130	
Bromodichloromethane	mg/kg	.02	0.018	92	70-130	
Bromoform	mg/kg	.02	0.016	82	70-130	
Bromomethane	mg/kg	.02	0.018	88	44-154	
Carbon disulfide	mg/kg	.02	0.019	94	33-127	
Carbon tetrachloride	mg/kg	.02	0.017	85	70-130	
Chlorobenzene	mg/kg	.02	0.018	88	70-130	
Chloroethane	mg/kg	.02	0.016	80	70-130	
Chloroform	mg/kg	.02	0.017	86	70-130	
Chloromethane	mg/kg	.02	0.016	79	70-130	
cis-1,2-Dichloroethene	mg/kg	.02	0.018	88	70-130	
cis-1,3-Dichloropropene	mg/kg	.02	0.018	88	70-130	
Dibromochloromethane	mg/kg	.02	0.018	88	70-130	
Ethylbenzene	mg/kg	.02	0.018	88	70-130	
m&p-Xylene	mg/kg	.04	0.035	89	70-130	
Methyl-tert-butyl ether	mg/kg	.02	0.020	99	70-130	
Methylene Chloride	mg/kg	.02	0.019	96	70-130	
o-Xylene	mg/kg	.02	0.017	86	70-130	
Styrene	mg/kg	.02	0.018	88	70-130	
Tetrachloroethene	mg/kg	.02	0.017	84	70-130	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

LABORATORY CONTROL SAMPLE: 1344442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	mg/kg	.02	0.017	86	70-130	
TOTAL BTEX	mg/kg		0.11			
trans-1,2-Dichloroethene	mg/kg	.02	0.017	87	70-130	
trans-1,3-Dichloropropene	mg/kg	.02	0.017	83	70-130	
Trichloroethene	mg/kg	.02	0.016	81	70-130	
Vinyl chloride	mg/kg	.02	0.016	80	70-130	
Xylene (Total)	mg/kg	.06	0.053	88	70-130	
1,2-Dichloroethane-d4 (S)	%			99	74-131	
4-Bromofluorobenzene (S)	%			96	70-133	
Dibromofluoromethane (S)	%			102	71-130	
Toluene-d8 (S)	%			97	76-124	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

QC Batch: 273204 Analysis Method: EPA 8270C  
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave  
Associated Lab Samples: 30230600001, 30230600002, 30230600003, 30230600004, 30230600005, 30230600007, 30230600008, 30230600009, 30230600010, 30230600011, 30230600012

METHOD BLANK: 1343944 Matrix: Solid  
Associated Lab Samples: 30230600001, 30230600002, 30230600003, 30230600004, 30230600005, 30230600007, 30230600008, 30230600009, 30230600010, 30230600011, 30230600012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	ND	0.33	10/03/17 23:39	
1,2-Dichlorobenzene	mg/kg	ND	0.33	10/03/17 23:39	
1,3-Dichlorobenzene	mg/kg	ND	0.33	10/03/17 23:39	
1,4-Dichlorobenzene	mg/kg	ND	0.33	10/03/17 23:39	
2,4,5-Trichlorophenol	mg/kg	ND	0.83	10/03/17 23:39	
2,4,6-Trichlorophenol	mg/kg	ND	0.33	10/03/17 23:39	
2,4-Dichlorophenol	mg/kg	ND	0.33	10/03/17 23:39	
2,4-Dimethylphenol	mg/kg	ND	0.33	10/03/17 23:39	
2,4-Dinitrophenol	mg/kg	ND	0.83	10/03/17 23:39	
2,4-Dinitrotoluene	mg/kg	ND	0.33	10/03/17 23:39	
2,6-Dinitrotoluene	mg/kg	ND	0.33	10/03/17 23:39	
2-Chloronaphthalene	mg/kg	ND	0.33	10/03/17 23:39	
2-Chlorophenol	mg/kg	ND	0.33	10/03/17 23:39	
2-Methylnaphthalene	mg/kg	ND	0.33	10/03/17 23:39	
2-Methylphenol(o-Cresol)	mg/kg	ND	0.33	10/03/17 23:39	
2-Nitroaniline	mg/kg	ND	0.83	10/03/17 23:39	
2-Nitrophenol	mg/kg	ND	0.33	10/03/17 23:39	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	0.67	10/03/17 23:39	
3,3'-Dichlorobenzidine	mg/kg	ND	0.33	10/03/17 23:39	2c
3-Nitroaniline	mg/kg	ND	0.83	10/03/17 23:39	
4,6-Dinitro-2-methylphenol	mg/kg	ND	0.83	10/03/17 23:39	
4-Bromophenylphenyl ether	mg/kg	ND	0.33	10/03/17 23:39	
4-Chloro-3-methylphenol	mg/kg	ND	0.33	10/03/17 23:39	
4-Chloroaniline	mg/kg	ND	0.33	10/03/17 23:39	2c
4-Chlorophenylphenyl ether	mg/kg	ND	0.33	10/03/17 23:39	
4-Nitroaniline	mg/kg	ND	0.83	10/03/17 23:39	3c
4-Nitrophenol	mg/kg	ND	0.33	10/03/17 23:39	
Acenaphthene	mg/kg	ND	0.33	10/03/17 23:39	
Acenaphthylene	mg/kg	ND	0.33	10/03/17 23:39	
Anthracene	mg/kg	ND	0.33	10/03/17 23:39	
Benzo(a)anthracene	mg/kg	ND	0.33	10/03/17 23:39	
Benzo(a)pyrene	mg/kg	ND	0.33	10/03/17 23:39	
Benzo(b)fluoranthene	mg/kg	ND	0.33	10/03/17 23:39	
Benzo(g,h,i)perylene	mg/kg	ND	0.33	10/03/17 23:39	
Benzo(k)fluoranthene	mg/kg	ND	0.33	10/03/17 23:39	
Benzyl alcohol	mg/kg	ND	0.33	10/03/17 23:39	
bis(2-Chloroethoxy)methane	mg/kg	ND	0.33	10/03/17 23:39	
bis(2-Chloroethyl) ether	mg/kg	ND	0.33	10/03/17 23:39	
bis(2-Chloroisopropyl) ether	mg/kg	ND	0.33	10/03/17 23:39	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	0.33	10/03/17 23:39	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

METHOD BLANK: 1343944

Matrix: Solid

Associated Lab Samples: 30230600001, 30230600002, 30230600003, 30230600004, 30230600005, 30230600007, 30230600008, 30230600009, 30230600010, 30230600011, 30230600012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Butylbenzylphthalate	mg/kg	ND	0.33	10/03/17 23:39	
Chrysene	mg/kg	ND	0.33	10/03/17 23:39	
Di-n-butylphthalate	mg/kg	ND	0.33	10/03/17 23:39	
Di-n-octylphthalate	mg/kg	ND	0.33	10/03/17 23:39	
Dibenz(a,h)anthracene	mg/kg	ND	0.33	10/03/17 23:39	
Dibenzofuran	mg/kg	ND	0.33	10/03/17 23:39	
Diethylphthalate	mg/kg	ND	0.33	10/03/17 23:39	
Dimethylphthalate	mg/kg	ND	0.33	10/03/17 23:39	
Fluoranthene	mg/kg	ND	0.33	10/03/17 23:39	
Fluorene	mg/kg	ND	0.33	10/03/17 23:39	
Hexachloro-1,3-butadiene	mg/kg	ND	0.33	10/03/17 23:39	
Hexachlorobenzene	mg/kg	ND	0.33	10/03/17 23:39	
Hexachlorocyclopentadiene	mg/kg	ND	0.33	10/03/17 23:39	
Hexachloroethane	mg/kg	ND	0.33	10/03/17 23:39	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.33	10/03/17 23:39	
Isophorone	mg/kg	ND	0.33	10/03/17 23:39	
N-Nitroso-di-n-propylamine	mg/kg	ND	0.33	10/03/17 23:39	
N-Nitrosodiphenylamine	mg/kg	ND	0.33	10/03/17 23:39	
Naphthalene	mg/kg	ND	0.33	10/03/17 23:39	
Nitrobenzene	mg/kg	ND	0.33	10/03/17 23:39	
Pentachlorophenol	mg/kg	ND	0.83	10/03/17 23:39	
Phenanthrene	mg/kg	ND	0.33	10/03/17 23:39	
Phenol	mg/kg	ND	0.33	10/03/17 23:39	
Pyrene	mg/kg	ND	0.33	10/03/17 23:39	
2,4,6-Tribromophenol (S)	%	63	10-144	10/03/17 23:39	
2-Fluorobiphenyl (S)	%	88	10-151	10/03/17 23:39	
2-Fluorophenol (S)	%	98	10-138	10/03/17 23:39	
Nitrobenzene-d5 (S)	%	88	10-175	10/03/17 23:39	
Phenol-d6 (S)	%	91	10-142	10/03/17 23:39	
Terphenyl-d14 (S)	%	103	10-172	10/03/17 23:39	

LABORATORY CONTROL SAMPLE: 1343945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	3.3	2.3	69	55-84	
1,2-Dichlorobenzene	mg/kg	3.3	2.8	84	64-102	
1,3-Dichlorobenzene	mg/kg	3.3	2.8	85	63-99	
1,4-Dichlorobenzene	mg/kg	3.3	2.6	79	64-100	
2,4,5-Trichlorophenol	mg/kg	3.3	2.6	79	54-119	
2,4,6-Trichlorophenol	mg/kg	3.3	2.8	84	53-128	
2,4-Dichlorophenol	mg/kg	3.3	2.4	71	49-92	
2,4-Dimethylphenol	mg/kg	3.3	2.1	62	46-88	
2,4-Dinitrophenol	mg/kg	3.3	2.0	59	10-121	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

LABORATORY CONTROL SAMPLE: 1343945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	mg/kg	3.3	3.1	93	61-120	
2,6-Dinitrotoluene	mg/kg	3.3	3.0	91	60-118	
2-Chloronaphthalene	mg/kg	3.3	2.9	86	55-110	
2-Chlorophenol	mg/kg	3.3	2.8	85	54-111	
2-Methylnaphthalene	mg/kg	3.3	2.2	67	47-84	
2-Methylphenol(o-Cresol)	mg/kg	3.3	3.2	97	49-121	
2-Nitroaniline	mg/kg	3.3	3.1	93	61-122	
2-Nitrophenol	mg/kg	3.3	2.1	62	52-88	
3&4-Methylphenol(m&p Cresol)	mg/kg	3.3	3.1	93	55-116	
3,3'-Dichlorobenzidine	mg/kg	3.3	3.4	101	42-122	2c
3-Nitroaniline	mg/kg	3.3	3.3	100	59-129	
4,6-Dinitro-2-methylphenol	mg/kg	3.3	3.0	89	42-132	
4-Bromophenylphenyl ether	mg/kg	3.3	3.1	93	65-112	
4-Chloro-3-methylphenol	mg/kg	3.3	2.4	72	57-91	
4-Chloroaniline	mg/kg	3.3	1.6	47	32-76	2c
4-Chlorophenylphenyl ether	mg/kg	3.3	3.0	89	65-113	
4-Nitroaniline	mg/kg	3.3	3.6	107	53-168	3c
4-Nitrophenol	mg/kg	3.3	2.6	79	55-132	
Acenaphthene	mg/kg	3.3	3.1	92	59-113	
Acenaphthylene	mg/kg	3.3	3.0	91	56-114	
Anthracene	mg/kg	3.3	2.7	81	60-104	
Benzo(a)anthracene	mg/kg	3.3	3.2	96	64-114	
Benzo(a)pyrene	mg/kg	3.3	2.9	86	62-111	
Benzo(b)fluoranthene	mg/kg	3.3	2.8	85	61-122	
Benzo(g,h,i)perylene	mg/kg	3.3	3.5	106	54-127	
Benzo(k)fluoranthene	mg/kg	3.3	3.3	98	63-117	
Benzyl alcohol	mg/kg	3.3	1.7	52	34-127	
bis(2-Chloroethoxy)methane	mg/kg	3.3	2.1	64	46-89	
bis(2-Chloroethyl) ether	mg/kg	3.3	2.6	78	45-108	
bis(2-Chloroisopropyl) ether	mg/kg	3.3	2.7	82	47-113	
bis(2-Ethylhexyl)phthalate	mg/kg	3.3	3.1	92	60-127	
Butylbenzylphthalate	mg/kg	3.3	3.1	93	65-124	
Chrysene	mg/kg	3.3	3.1	93	64-112	
Di-n-butylphthalate	mg/kg	3.3	2.9	88	66-118	
Di-n-octylphthalate	mg/kg	3.3	2.8	83	57-133	
Dibenz(a,h)anthracene	mg/kg	3.3	3.5	106	53-125	
Dibenzofuran	mg/kg	3.3	2.9	87	65-109	
Diethylphthalate	mg/kg	3.3	3.0	90	65-113	
Dimethylphthalate	mg/kg	3.3	3.0	91	64-115	
Fluoranthene	mg/kg	3.3	3.0	91	64-114	
Fluorene	mg/kg	3.3	3.1	93	62-113	
Hexachloro-1,3-butadiene	mg/kg	3.3	2.4	72	45-91	
Hexachlorobenzene	mg/kg	3.3	3.1	94	63-113	
Hexachlorocyclopentadiene	mg/kg	3.3	2.2	65	31-105	
Hexachloroethane	mg/kg	3.3	2.8	83	50-110	
Indeno(1,2,3-cd)pyrene	mg/kg	3.3	3.5	105	57-119	
Isophorone	mg/kg	3.3	2.3	68	46-87	

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### QUALITY CONTROL DATA

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

LABORATORY CONTROL SAMPLE: 1343945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
N-Nitroso-di-n-propylamine	mg/kg	3.3	2.9	87	54-116	
N-Nitrosodiphenylamine	mg/kg	3.3	2.3	70	46-90	
Naphthalene	mg/kg	3.3	2.4	71	47-85	
Nitrobenzene	mg/kg	3.3	2.3	70	43-93	
Pentachlorophenol	mg/kg	3.3	2.4	73	41-143	
Phenanthrene	mg/kg	3.3	3.3	100	63-114	
Phenol	mg/kg	3.3	2.6	77	56-114	
Pyrene	mg/kg	3.3	3.4	102	62-120	
2,4,6-Tribromophenol (S)	%			83	10-144	
2-Fluorobiphenyl (S)	%			85	10-151	
2-Fluorophenol (S)	%			80	10-138	
Nitrobenzene-d5 (S)	%			70	10-175	
Phenol-d6 (S)	%			80	10-142	
Terphenyl-d14 (S)	%			100	10-172	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1343946 1343947

Parameter	Units	30230600001		MSD		MSD		MSD		% Rec Limits	RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
1,2,4-Trichlorobenzene	mg/kg	ND	3.8	3.8	2.0	2.2	52	58	51-82	11		
1,2-Dichlorobenzene	mg/kg	ND	3.8	3.8	2.3	2.7	61	71	58-98	15		
1,3-Dichlorobenzene	mg/kg	ND	3.8	3.8	2.3	2.7	61	70	56-94	15		
1,4-Dichlorobenzene	mg/kg	ND	3.8	3.8	2.2	2.5	58	66	56-97	14		
2,4,5-Trichlorophenol	mg/kg	ND	3.8	3.8	2.2	2.4	57	63	14-139	10		
2,4,6-Trichlorophenol	mg/kg	ND	3.8	3.8	2.3	3.0	62	78	10-152	23		
2,4-Dichlorophenol	mg/kg	ND	3.8	3.8	2.0	2.3	52	59	46-87	13		
2,4-Dimethylphenol	mg/kg	ND	3.8	3.8	1.7	1.9	45	49	26-94	11		
2,4-Dinitrophenol	mg/kg	ND	3.8	3.8	.76J	.73J	20	19	10-120			
2,4-Dinitrotoluene	mg/kg	ND	3.8	3.8	2.3	2.7	60	70	44-117	16		
2,6-Dinitrotoluene	mg/kg	ND	3.8	3.8	2.4	2.7	62	72	48-112	15		
2-Chloronaphthalene	mg/kg	ND	3.8	3.8	2.3	2.7	61	71	52-104	16		
2-Chlorophenol	mg/kg	ND	3.8	3.8	2.3	2.7	61	72	48-105	17		
2-Methylnaphthalene	mg/kg	0.42	3.8	3.8	2.2	2.7	46	60	41-84	22		
2-Methylphenol(o-Cresol)	mg/kg	ND	3.8	3.8	3.1	3.4	80	90	24-137	12		
2-Nitroaniline	mg/kg	ND	3.8	3.8	2.4	2.8	62	74	52-117	17		
2-Nitrophenol	mg/kg	ND	3.8	3.8	1.8	2.1	48	54	18-103	12		
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	3.8	3.8	2.5	2.8	65	74	29-126	13		
3,3'-Dichlorobenzidine	mg/kg	ND	3.8	3.8	0.44	ND	12	10	10-137	2c		
3-Nitroaniline	mg/kg	ND	3.8	3.8	1.4	1.7	31	39	30-131	21		
4,6-Dinitro-2-methylphenol	mg/kg	ND	3.8	3.8	1.0	0.97	27	25	10-139	6		
4-Bromophenylphenyl ether	mg/kg	ND	3.8	3.8	2.4	2.8	63	75	58-108	17		
4-Chloro-3-methylphenol	mg/kg	ND	3.8	3.8	2.0	2.6	53	67	48-90	24		
4-Chloroaniline	mg/kg	ND	3.8	3.8	0.79	0.65	21	17	10-82	19	2c	
4-Chlorophenylphenyl ether	mg/kg	ND	3.8	3.8	2.3	2.8	61	72	57-107	18		

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: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Parameter	30230600001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec						
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1343946 1343947														
4-Nitroaniline	mg/kg	ND	3.8	3.8	1.4	1.8	38	48	32-143	23	3c			
4-Nitrophenol	mg/kg	ND	3.8	3.8	1.9	2.3	51	61	15-136	18				
Acenaphthene	mg/kg	ND	3.8	3.8	2.5	2.9	64	74	57-104	15				
Acenaphthylene	mg/kg	ND	3.8	3.8	2.7	3.1	62	73	55-103	15				
Anthracene	mg/kg	1.7	3.8	3.8	2.5	2.9	20	31	51-100	16	M1,ML			
Benzo(a)anthracene	mg/kg	2.7	3.8	3.8	4.6	4.7	50	52	35-124	2				
Benzo(a)pyrene	mg/kg	3.0	3.8	3.8	4.8	5.0	47	52	45-112	4	IS			
Benzo(b)fluoranthene	mg/kg	3.8	3.8	3.8	6.5	6.9	71	80	17-160	6	IS			
Benzo(g,h,i)perylene	mg/kg	1.8	3.8	3.8	2.1	2.1	9	9	10-127	1	IS,M1,ML			
Benzo(k)fluoranthene	mg/kg	4.5	3.8	3.8	6.4	7.2	51	73	27-150	12	IS			
Benzyl alcohol	mg/kg	ND	3.8	3.8	1.1	2.0	28	52	10-125	61	R1			
bis(2-Chloroethoxy)methane	mg/kg	ND	3.8	3.8	1.8	2.1	49	55	40-84	14				
bis(2-Chloroethyl) ether	mg/kg	ND	3.8	3.8	2.1	2.5	56	66	41-95	18				
bis(2-Chloroisopropyl) ether	mg/kg	ND	3.8	3.8	2.3	2.6	60	69	30-106	15				
bis(2-Ethylhexyl)phthalate	mg/kg	2.2	3.8	3.8	4.5	5.4	60	84	32-144	19				
Butylbenzylphthalate	mg/kg	2.1	3.8	3.8	4.4	4.9	62	75	33-144	11				
Chrysene	mg/kg	3.5	3.8	3.8	4.7	5.0	33	39	48-111	5	M1,ML			
Di-n-butylphthalate	mg/kg	ND	3.8	3.8	2.2	3.0	54	72	58-108	28	M1,ML,R1			
Di-n-octylphthalate	mg/kg	ND	3.8	3.8	5.3	7.4	137	190	11-175	33	IS,M1,MH,R1			
Dibenz(a,h)anthracene	mg/kg	0.78	3.8	3.8	1.9	1.9	29	31	10-125	4	IS			
Dibenzofuran	mg/kg	ND	3.8	3.8	2.5	2.9	58	69	56-105	17				
Diethylphthalate	mg/kg	ND	3.8	3.8	2.4	2.8	63	73	56-104	16				
Dimethylphthalate	mg/kg	ND	3.8	3.8	2.4	2.8	62	73	53-108	17				
Fluoranthene	mg/kg	4.3	3.8	3.8	5.8	5.6	41	34	24-131	4				
Fluorene	mg/kg	ND	3.8	3.8	2.5	3.0	62	73	60-106	16				
Hexachloro-1,3-butadiene	mg/kg	ND	3.8	3.8	2.1	2.4	55	62	44-86	13				
Hexachlorobenzene	mg/kg	ND	3.8	3.8	2.4	2.8	63	73	61-105	15				
Hexachlorocyclopentadiene	mg/kg	ND	3.8	3.8	0.73	0.67	19	18	10-99	8				
Hexachloroethane	mg/kg	ND	3.8	3.8	2.3	2.7	60	70	41-104	17				
Indeno(1,2,3-cd)pyrene	mg/kg	1.9	3.8	3.8	2.5	2.5	16	18	10-122	2	IS			
Isophorone	mg/kg	ND	3.8	3.8	2.0	2.3	54	59	42-82	10				
N-Nitroso-di-n-propylamine	mg/kg	ND	3.8	3.8	2.4	2.9	63	76	44-110	18				
N-Nitrosodiphenylamine	mg/kg	ND	3.8	3.8	1.7	2.1	45	53	40-84	18				
Naphthalene	mg/kg	0.84	3.8	3.8	2.7	3.0	48	57	40-86	12				
Nitrobenzene	mg/kg	ND	3.8	3.8	2.0	2.3	53	60	39-85	12				
Pentachlorophenol	mg/kg	ND	3.8	3.8	2.0	2.4	53	64	10-162	20				
Phenanthrene	mg/kg	2.5	3.8	3.8	4.3	4.5	48	54	51-117	6	M1,ML			
Phenol	mg/kg	ND	3.8	3.8	2.4	2.9	63	75	36-113	18				
Pyrene	mg/kg	5.4	3.8	3.8	7.4	8.5	53	80	15-154	13	E			
2,4,6-Tribromophenol (S)	%						50	62	10-144					
2-Fluorobiphenyl (S)	%						51	62	10-151					
2-Fluorophenol (S)	%						51	68	10-138					
Nitrobenzene-d5 (S)	%						46	52	10-175					
Phenol-d6 (S)	%						53	63	10-142					
Terphenyl-d14 (S)	%						70	95	10-172					

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Springfield Twp. 17L5438

Pace Project No.: 30230600

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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: 273321

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

Batch: 273322

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

### ANALYTE QUALIFIERS

1c A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

2c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased high and should be considered estimated.

3c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased low and should be considered estimated.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

ED Due to the extract's physical characteristics, the analysis was performed at dilution.

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

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

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

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### ANALYTE QUALIFIERS

ST Surrogate recovery was above laboratory control limits. Results may be biased high.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30230600001	IB-1@6"	EPA 3050B	272886	EPA 6010B	273045
30230600002	IB-1@6'	EPA 3050B	272886	EPA 6010B	273045
30230600003	IB-2@4"	EPA 3050B	272886	EPA 6010B	273045
30230600004	IB-2@4.5'	EPA 3050B	272886	EPA 6010B	273045
30230600005	IB-3@1.5'	EPA 3050B	272886	EPA 6010B	273045
30230600006	IB-3@5.5'	EPA 3050B	272886	EPA 6010B	273045
30230600007	IB-4@2'	EPA 3050B	272886	EPA 6010B	273045
30230600008	IB-4@6'	EPA 3050B	272886	EPA 6010B	273045
30230600009	IB-5@1.5'	EPA 3050B	272886	EPA 6010B	273045
30230600010	IB-5@5'	EPA 3050B	272886	EPA 6010B	273045
30230600011	IB-6@1'	EPA 3050B	272886	EPA 6010B	273045
30230600012	IB-6@5'	EPA 3050B	272886	EPA 6010B	273045
30230600001	IB-1@6"	EPA 7471A	272914	EPA 7471A	273011
30230600002	IB-1@6'	EPA 7471A	272914	EPA 7471A	273011
30230600003	IB-2@4"	EPA 7471A	272914	EPA 7471A	273011
30230600004	IB-2@4.5'	EPA 7471A	272914	EPA 7471A	273011
30230600005	IB-3@1.5'	EPA 7471A	272914	EPA 7471A	273011
30230600006	IB-3@5.5'	EPA 7471A	272914	EPA 7471A	273011
30230600007	IB-4@2'	EPA 7471A	272914	EPA 7471A	273011
30230600008	IB-4@6'	EPA 7471A	272914	EPA 7471A	273011
30230600009	IB-5@1.5'	EPA 7471A	272914	EPA 7471A	273011
30230600010	IB-5@5'	EPA 7471A	272914	EPA 7471A	273011
30230600011	IB-6@1'	EPA 7471A	272914	EPA 7471A	273011
30230600012	IB-6@5'	EPA 7471A	272914	EPA 7471A	273011
30230600001	IB-1@6"	EPA 3546	273204	EPA 8270C	274065
30230600002	IB-1@6'	EPA 3546	273204	EPA 8270C	274065
30230600003	IB-2@4"	EPA 3546	273204	EPA 8270C	274065
30230600004	IB-2@4.5'	EPA 3546	273204	EPA 8270C	274065
30230600005	IB-3@1.5'	EPA 3546	273204	EPA 8270C	274065
30230600007	IB-4@2'	EPA 3546	273204	EPA 8270C	274065
30230600008	IB-4@6'	EPA 3546	273204	EPA 8270C	274065
30230600009	IB-5@1.5'	EPA 3546	273204	EPA 8270C	274065
30230600010	IB-5@5'	EPA 3546	273204	EPA 8270C	274065
30230600011	IB-6@1'	EPA 3546	273204	EPA 8270C	274065
30230600012	IB-6@5'	EPA 3546	273204	EPA 8270C	274065
30230600001	IB-1@6"	EPA 5035A	273321	EPA 8260B	273340
30230600003	IB-2@4"	EPA 5035A	273322	EPA 8260B	273341
30230600005	IB-3@1.5'	EPA 5035A	273321	EPA 8260B	273340
30230600007	IB-4@2'	EPA 5035A	273322	EPA 8260B	273341
30230600009	IB-5@1.5'	EPA 5035A	273321	EPA 8260B	273340
30230600011	IB-6@1'	EPA 5035A	273321	EPA 8260B	273340
30230600001	IB-1@6"	ASTM D2974-87	272854		
30230600002	IB-1@6'	ASTM D2974-87	272854		
30230600003	IB-2@4"	ASTM D2974-87	272854		
30230600004	IB-2@4.5'	ASTM D2974-87	272854		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp. 17L5438  
Pace Project No.: 30230600

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30230600005	IB-3@1.5'	ASTM D2974-87	272854		
30230600006	IB-3@5.5'	ASTM D2974-87	272854		
30230600007	IB-4@2'	ASTM D2974-87	272854		
30230600008	IB-4@6'	ASTM D2974-87	272854		
30230600009	IB-5@1.5'	ASTM D2974-87	272854		
30230600010	IB-5@5'	ASTM D2974-87	272854		
30230600011	IB-6@1'	ASTM D2974-87	272854		
30230600012	IB-6@5'	ASTM D2974-87	272854		

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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** Required Client Information:  
 Company: B6 Companies  
 Address: 4242 Cardale Pike  
 Email To: Camp Hill PA 17011  
 Phone: 717-943-1583  
 Requested Due Date/TAT: Standard 5-day

**Section B** Required Project Information:  
 Report To: Randy Shick  
 Copy To:  
 Purchase Order No.:  
 Project Name: Springfield Twp.  
 Project Number: 17L3438

**Section C** Invoice Information:  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager:  
 Pace Profile #:

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location STATE: PA

Page: \_\_\_\_\_ of \_\_\_\_\_  
 2169001

ITEM #	Section D Required Client Information	Section A Matrix Codes MATRIX / CODE	Section B COLLECTED		Section C SAMPLE TYPE (G=GRAB C=COMP)	Section D MATRIX CODE (see vild codes to left)	Section C SAMPLE TEMP AT COLLECTION	Section C # OF CONTAINERS	Section C Preservatives	Section C Analysis Test ↑	Section C Y/N	Section C Requested Analysis Filtered (Y/N)	Section C Residual Chlorine (Y/N)	Section C Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB										
1		IB-1 @ 6"			G	S	9/20/17	9:15						001
2		IB-1 @ 6"						9:50		X				002
3		IB-2 @ 4"						10:15		X				003
4		IB-2 @ 4.5'						10:25		X				004
5		IB-3 @ 1.5'						10:50		X				005
6		IB-3 @ 5.5'						11:20		X				006
7		IB-4 @ 1'						11:45		X				007
8		IB-4 @ 6'						12:10		X				008
9		IB-5 @ 1.5'						12:35		X				009
10		IB-5 @ 5'						13:00		X				010
11		IB-6 @ 1'						13:10		X				011
12		IB-6 @ 5'						13:30		X				012

**ADDITIONAL COMMENTS**  
 Held deeper samples  
 pending results of  
 shallows samples.

**RELINQUISHED BY / AFFILIATION**  
 Randy Shick  
 B6 Companies  
 9/20/17 11:49

**ACCEPTED BY / AFFILIATION**  
 J. Carney  
 B6 Companies  
 9/20/17 19:25

**DATE**  
 9/20/17 11:40  
 9/20/17 19:25  
 9/20/17 23:30

**TIME**  
 11:49  
 19:25  
 23:30

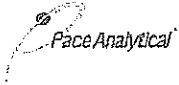
**SAMPLE CONDITIONS**  
 Received on \_\_\_\_\_  
 Sealed Cooler (Y/N) \_\_\_\_\_  
 Custody (Y/N) \_\_\_\_\_  
 Samples Intact (Y/N) \_\_\_\_\_

**Temp In °C**  
 \_\_\_\_\_

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER:  
 SIGNATURE of SAMPLER:  
 DATE Signed (MM/DD/YYYY):

**WO# : 30230600**

30230600



Client Name: BL Companies Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Label	<u>COC</u>
LIMS Login	<u>zjh</u>

Tracking #: \_\_\_\_\_

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

Thermometer Used 6 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.8 °C Correction Factor 0.0 °C Final Temp: 4.8 °C

Temp should be above freezing to 6°C

Date and initials of person examining contents: 9/27/17 COC

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>SL</u>		/		5. <u>Time not on Amber Ises</u>
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used: -Pace Containers Used:	/			10.
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation.			/	16.
All containers needing preservation are found to be in compliance with EPA recommendation.			/	
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>CO</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr			/	Initial when completed: Date:

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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)

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

October 11, 2017

Mr. John Thatcher  
BL Companies  
4242 Carlisle Pike  
Camp Hill, PA 17011

RE: Project: Springfield Twp  
Pace Project No.: 30230849

Dear Mr. Thatcher:

Enclosed are the analytical results for sample(s) received by the laboratory on September 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Mr. Mike Beardsley, BL Companies  
Kellen Bullock, BL Companies  
Mr. Rob Good, BL Companies  
Mr. Joseph Kempf, BL Companies  
Mr. Randy Shick, BL Companies  
Mr. Ken Yoder, BL Companies



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Springfield Twp  
Pace Project No.: 30230849

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
L-A-B DOD-ELAP Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification  
Connecticut Certification #: PH-0694  
Delaware Certification  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana 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 #: PA014572015-1  
New Hampshire/TNI Certification #: 2976  
New Jersey/TNI Certification #: PA 051  
New Mexico Certification #: PA01457  
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  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: TN2867  
Texas/TNI Certification #: T104704188-14-8  
Utah/TNI Certification #: PA014572015-5  
USDA Soil Permit #: P330-14-00213  
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 Certification  
Wyoming Certification #: 8TMS-L

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB7@2'      **Lab ID:** 30230849001      Collected: 09/20/17 09:41      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>10400</b>	mg/kg	10.8	1	09/25/17 10:49	09/26/17 10:43	7429-90-5	
Antimony	ND	mg/kg	0.65	1	09/25/17 10:49	09/26/17 10:43	7440-36-0	
Arsenic	<b>2.9</b>	mg/kg	0.54	1	09/25/17 10:49	09/26/17 10:43	7440-38-2	
Barium	<b>12.5</b>	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:43	7440-39-3	
Beryllium	<b>1.9</b>	mg/kg	0.22	1	09/25/17 10:49	09/26/17 10:43	7440-41-7	
Boron	ND	mg/kg	5.4	1	09/25/17 10:49	09/26/17 10:43	7440-42-8	
Cadmium	ND	mg/kg	0.32	1	09/25/17 10:49	09/26/17 10:43	7440-43-9	
Calcium	ND	mg/kg	216	1	09/25/17 10:49	09/26/17 10:43	7440-70-2	
Chromium	<b>25.0</b>	mg/kg	0.54	1	09/25/17 10:49	09/26/17 10:43	7440-47-3	
Cobalt	<b>16.4</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:43	7440-48-4	
Copper	<b>32.3</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:43	7440-50-8	
Iron	<b>36600</b>	mg/kg	10.8	1	09/25/17 10:49	09/26/17 10:43	7439-89-6	
Lead	<b>12.2</b>	mg/kg	0.54	1	09/25/17 10:49	09/26/17 10:43	7439-92-1	
Magnesium	<b>7350</b>	mg/kg	54.0	1	09/25/17 10:49	09/26/17 10:43	7439-95-4	
Manganese	<b>501</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:43	7439-96-5	
Molybdenum	<b>3.2</b>	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:43	7439-98-7	
Nickel	<b>29.3</b>	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:43	7440-02-0	
Potassium	<b>3100</b>	mg/kg	54.0	1	09/25/17 10:49	09/26/17 10:43	7440-09-7	
Selenium	ND	mg/kg	0.86	1	09/25/17 10:49	09/26/17 10:43	7782-49-2	
Silver	<b>3.8</b>	mg/kg	0.65	1	09/25/17 10:49	09/26/17 10:43	7440-22-4	
Sodium	ND	mg/kg	540	1	09/25/17 10:49	09/26/17 10:43	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:43	7440-28-0	
Vanadium	<b>22.9</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:43	7440-62-2	
Zinc	<b>72.1</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:43	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 12:23	09/25/17 19:58	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	208-96-8	R1
Anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	120-12-7	MH,R1
Benzo(a)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	56-55-3	MH,R1
Benzo(a)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	50-32-8	R1
Benzo(b)fluoranthene	<b>0.44</b>	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	191-24-2	R1
Benzo(k)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	207-08-9	R1
Benzyl alcohol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	100-51-6	ML
4-Bromophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	59-50-7	
4-Chloroaniline	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	108-60-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB7@2'**      **Lab ID: 30230849001**      Collected: 09/20/17 09:41      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	7005-72-3	
Chrysene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	218-01-9	MH,R1
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	53-70-3	
Dibenzofuran	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	91-94-1	
2,4-Dichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	105-67-9	ML
Dimethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	121-14-2	R1
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	117-84-0	R1
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	117-81-7	
Fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	206-44-0	MH,R1
Fluorene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	193-39-5	R1
Isophorone	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	95-48-7	R1
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.80	1	09/27/17 23:40	09/28/17 20:21		R1
Naphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	91-20-3	
2-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	88-74-4	
3-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	99-09-2	
4-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	100-01-6	
Nitrobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	98-95-3	
2-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	88-75-5	
4-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	100-02-7	R1
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	86-30-6	MH,R1
Pentachlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	87-86-5	
Phenanthrene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	85-01-8	MH,R1
Phenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	108-95-2	
Pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	129-00-0	MH,R1
1,2,4-Trichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	120-82-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB7@2'      **Lab ID:** 30230849001      Collected: 09/20/17 09:41      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	09/28/17 20:21	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	09/28/17 20:21	88-06-2	R1
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	71	%	10-175	1	09/27/17 23:40	09/28/17 20:21	4165-60-0	
2-Fluorobiphenyl (S)	73	%	10-151	1	09/27/17 23:40	09/28/17 20:21	321-60-8	
Terphenyl-d14 (S)	82	%	10-172	1	09/27/17 23:40	09/28/17 20:21	1718-51-0	
Phenol-d6 (S)	68	%	10-142	1	09/27/17 23:40	09/28/17 20:21	13127-88-3	
2-Fluorophenol (S)	67	%	10-138	1	09/27/17 23:40	09/28/17 20:21	367-12-4	
2,4,6-Tribromophenol (S)	58	%	10-144	1	09/27/17 23:40	09/28/17 20:21	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.16</b>	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	67-64-1	
Benzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-27-4	
Bromoform	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-25-2	
Bromomethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	74-83-9	
TOTAL BTEX	ND	mg/kg	0.024	1	09/29/17 10:07	10/02/17 10:54		
2-Butanone (MEK)	<b>0.018</b>	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	78-93-3	
Carbon disulfide	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	56-23-5	
Chlorobenzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	108-90-7	
Chloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-00-3	
Chloroform	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	67-66-3	
Chloromethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	100-41-4	
2-Hexanone	ND	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	591-78-6	
Methylene Chloride	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	1634-04-4	
Styrene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	100-42-5	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	127-18-4	
Toluene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	108-88-3	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB7@2'**      **Lab ID: 30230849001**      Collected: 09/20/17 09:41      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	79-00-5	
Trichloroethene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	79-01-6	
Vinyl chloride	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	75-01-4	
Xylene (Total)	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 10:54	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0079	1	09/29/17 10:07	10/02/17 10:54	179601-23-1	
o-Xylene	ND	mg/kg	0.0040	1	09/29/17 10:07	10/02/17 10:54	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	90	%	76-124	1	09/29/17 10:07	10/02/17 10:54	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-133	1	09/29/17 10:07	10/02/17 10:54	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	74-131	1	09/29/17 10:07	10/02/17 10:54	17060-07-0	
Dibromofluoromethane (S)	108	%	71-130	1	09/29/17 10:07	10/02/17 10:54	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>17.3</b>	%	0.10	1		09/28/17 14:21		

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB7@8'      **Lab ID:** 30230849002      Collected: 09/20/17 09:45      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>19000</b>	mg/kg	10.7	1	10/09/17 08:26	10/10/17 08:30	7429-90-5	
Antimony	ND	mg/kg	0.64	1	10/09/17 08:26	10/10/17 08:30	7440-36-0	
Arsenic	<b>1.6</b>	mg/kg	0.53	1	10/09/17 08:26	10/10/17 08:30	7440-38-2	
Barium	<b>31.9</b>	mg/kg	2.1	1	10/09/17 08:26	10/10/17 08:30	7440-39-3	
Beryllium	<b>2.4</b>	mg/kg	0.21	1	10/09/17 08:26	10/10/17 08:30	7440-41-7	
Boron	ND	mg/kg	5.3	1	10/09/17 08:26	10/10/17 08:30	7440-42-8	
Cadmium	ND	mg/kg	0.32	1	10/09/17 08:26	10/10/17 08:30	7440-43-9	
Calcium	<b>277</b>	mg/kg	213	1	10/09/17 08:26	10/10/17 08:30	7440-70-2	
Chromium	<b>12.4</b>	mg/kg	0.53	1	10/09/17 08:26	10/10/17 08:30	7440-47-3	
Cobalt	<b>17.8</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:30	7440-48-4	
Copper	<b>11.6</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:30	7440-50-8	
Iron	<b>25200</b>	mg/kg	10.7	1	10/09/17 08:26	10/10/17 08:30	7439-89-6	
Lead	<b>15.1</b>	mg/kg	0.53	1	10/09/17 08:26	10/10/17 08:30	7439-92-1	
Magnesium	<b>15400</b>	mg/kg	53.3	1	10/09/17 08:26	10/10/17 08:30	7439-95-4	
Manganese	<b>640</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:30	7439-96-5	
Molybdenum	ND	mg/kg	2.1	1	10/09/17 08:26	10/10/17 08:30	7439-98-7	
Nickel	<b>28.5</b>	mg/kg	2.1	1	10/09/17 08:26	10/10/17 08:30	7440-02-0	
Potassium	<b>8470</b>	mg/kg	53.3	1	10/09/17 08:26	10/10/17 08:30	7440-09-7	
Selenium	ND	mg/kg	0.85	1	10/09/17 08:26	10/10/17 08:30	7782-49-2	
Silver	ND	mg/kg	0.64	1	10/09/17 08:26	10/10/17 08:30	7440-22-4	
Sodium	ND	mg/kg	533	1	10/09/17 08:26	10/10/17 08:30	7440-23-5	
Thallium	ND	mg/kg	2.1	1	10/09/17 08:26	10/10/17 08:30	7440-28-0	
Vanadium	<b>40.4</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:30	7440-62-2	
Zinc	<b>94.6</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:30	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	10/09/17 09:45	10/09/17 16:55	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>19.2</b>	%	0.10	1		10/03/17 14:24		D6

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB8@2'**      **Lab ID: 30230849003**      Collected: 09/20/17 10:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>17600</b>	mg/kg	107	10	09/25/17 10:49	09/26/17 11:20	7429-90-5	
Antimony	ND	mg/kg	6.4	10	09/25/17 10:49	09/26/17 11:20	7440-36-0	
Arsenic	<b>6.5</b>	mg/kg	5.3	10	09/25/17 10:49	09/26/17 11:20	7440-38-2	
Barium	<b>225</b>	mg/kg	21.3	10	09/25/17 10:49	09/26/17 11:20	7440-39-3	
Beryllium	ND	mg/kg	2.1	10	09/25/17 10:49	09/26/17 11:20	7440-41-7	
Boron	ND	mg/kg	53.3	10	09/25/17 10:49	09/26/17 11:20	7440-42-8	
Cadmium	ND	mg/kg	3.2	10	09/25/17 10:49	09/26/17 11:20	7440-43-9	
Calcium	ND	mg/kg	2130	10	09/25/17 10:49	09/26/17 11:20	7440-70-2	
Chromium	<b>20.3</b>	mg/kg	5.3	10	09/25/17 10:49	09/26/17 11:20	7440-47-3	
Cobalt	<b>10.7</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:45	7440-48-4	
Copper	<b>11.4</b>	mg/kg	10.7	10	09/25/17 10:49	09/26/17 11:20	7440-50-8	
Iron	<b>16900</b>	mg/kg	107	10	09/25/17 10:49	09/26/17 11:20	7439-89-6	
Lead	<b>30.1</b>	mg/kg	0.53	1	09/25/17 10:49	09/26/17 10:45	7439-92-1	
Magnesium	<b>3940</b>	mg/kg	533	10	09/25/17 10:49	09/26/17 11:20	7439-95-4	
Manganese	<b>461</b>	mg/kg	10.7	10	09/25/17 10:49	09/26/17 11:20	7439-96-5	
Molybdenum	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:45	7439-98-7	
Nickel	ND	mg/kg	21.3	10	09/25/17 10:49	09/26/17 11:20	7440-02-0	
Potassium	<b>900</b>	mg/kg	533	10	09/25/17 10:49	09/26/17 11:20	7440-09-7	
Selenium	ND	mg/kg	8.5	10	09/25/17 10:49	09/26/17 11:20	7782-49-2	
Silver	ND	mg/kg	6.4	10	09/25/17 10:49	09/26/17 11:20	7440-22-4	
Sodium	ND	mg/kg	5330	10	09/25/17 10:49	09/26/17 11:20	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:45	7440-28-0	
Vanadium	<b>36.9</b>	mg/kg	10.7	10	09/25/17 10:49	09/26/17 11:20	7440-62-2	
Zinc	<b>109</b>	mg/kg	10.7	10	09/25/17 10:49	09/26/17 11:20	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	09/25/17 12:23	09/25/17 20:07	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	208-96-8	
Anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	207-08-9	
Benzyl alcohol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	59-50-7	
4-Chloroaniline	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	108-60-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB8@2'**      **Lab ID: 30230849003**      Collected: 09/20/17 10:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	7005-72-3	
Chrysene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	53-70-3	CH
Dibenzofuran	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	91-94-1	1c,CH
2,4-Dichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	105-67-9	
Dimethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	117-81-7	
Fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	206-44-0	
Fluorene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	193-39-5	CH
Isophorone	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.80	1	09/27/17 23:40	10/05/17 14:47		
Naphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	91-20-3	
2-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	88-74-4	
3-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	99-09-2	
4-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	100-01-6	2c
Nitrobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	98-95-3	
2-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	88-75-5	
4-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	86-30-6	
Pentachlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	87-86-5	
Phenanthrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	85-01-8	
Phenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	108-95-2	
Pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB8@2'**      **Lab ID: 30230849003**      Collected: 09/20/17 10:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 14:47	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 14:47	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	81	%	10-175	1	09/27/17 23:40	10/05/17 14:47	4165-60-0	
2-Fluorobiphenyl (S)	81	%	10-151	1	09/27/17 23:40	10/05/17 14:47	321-60-8	
Terphenyl-d14 (S)	80	%	10-172	1	09/27/17 23:40	10/05/17 14:47	1718-51-0	
Phenol-d6 (S)	84	%	10-142	1	09/27/17 23:40	10/05/17 14:47	13127-88-3	
2-Fluorophenol (S)	85	%	10-138	1	09/27/17 23:40	10/05/17 14:47	367-12-4	
2,4,6-Tribromophenol (S)	86	%	10-144	1	09/27/17 23:40	10/05/17 14:47	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.36</b>	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	67-64-1	
Benzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-27-4	
Bromoform	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-25-2	
Bromomethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	74-83-9	
TOTAL BTEX	ND	mg/kg	0.029	1	09/29/17 10:07	10/02/17 11:20		
2-Butanone (MEK)	<b>0.033</b>	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	78-93-3	
Carbon disulfide	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	56-23-5	
Chlorobenzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	108-90-7	
Chloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-00-3	
Chloroform	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	67-66-3	
Chloromethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	100-41-4	
2-Hexanone	ND	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	591-78-6	
Methylene Chloride	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	1634-04-4	
Styrene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	127-18-4	
Toluene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	108-88-3	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB8@2'**      **Lab ID: 30230849003**      Collected: 09/20/17 10:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	79-00-5	
Trichloroethene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	79-01-6	
Vinyl chloride	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	75-01-4	
Xylene (Total)	ND	mg/kg	0.015	1	09/29/17 10:07	10/02/17 11:20	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0097	1	09/29/17 10:07	10/02/17 11:20	179601-23-1	
o-Xylene	ND	mg/kg	0.0048	1	09/29/17 10:07	10/02/17 11:20	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	93	%	76-124	1	09/29/17 10:07	10/02/17 11:20	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-133	1	09/29/17 10:07	10/02/17 11:20	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	74-131	1	09/29/17 10:07	10/02/17 11:20	17060-07-0	
Dibromofluoromethane (S)	105	%	71-130	1	09/29/17 10:07	10/02/17 11:20	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>17.7</b>	%	0.10	1		09/28/17 14:21		

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB8@8'**      **Lab ID: 30230849004**      Collected: 09/20/17 10:05      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>10800</b>	mg/kg	9.8	1	10/09/17 08:26	10/10/17 08:36	7429-90-5	
Antimony	ND	mg/kg	0.59	1	10/09/17 08:26	10/10/17 08:36	7440-36-0	
Arsenic	<b>0.92</b>	mg/kg	0.49	1	10/09/17 08:26	10/10/17 08:36	7440-38-2	
Barium	<b>14.7</b>	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:36	7440-39-3	
Beryllium	<b>2.0</b>	mg/kg	0.20	1	10/09/17 08:26	10/10/17 08:36	7440-41-7	
Boron	ND	mg/kg	4.9	1	10/09/17 08:26	10/10/17 08:36	7440-42-8	
Cadmium	ND	mg/kg	0.29	1	10/09/17 08:26	10/10/17 08:36	7440-43-9	
Calcium	<b>2390</b>	mg/kg	195	1	10/09/17 08:26	10/10/17 08:36	7440-70-2	
Chromium	<b>5.4</b>	mg/kg	0.49	1	10/09/17 08:26	10/10/17 08:36	7440-47-3	
Cobalt	<b>16.9</b>	mg/kg	0.98	1	10/09/17 08:26	10/10/17 08:36	7440-48-4	
Copper	<b>16.1</b>	mg/kg	0.98	1	10/09/17 08:26	10/10/17 08:36	7440-50-8	
Iron	<b>25800</b>	mg/kg	9.8	1	10/09/17 08:26	10/10/17 08:36	7439-89-6	
Lead	<b>6.9</b>	mg/kg	0.49	1	10/09/17 08:26	10/10/17 08:36	7439-92-1	
Magnesium	<b>9740</b>	mg/kg	48.8	1	10/09/17 08:26	10/10/17 08:36	7439-95-4	
Manganese	<b>216</b>	mg/kg	0.98	1	10/09/17 08:26	10/10/17 08:36	7439-96-5	
Molybdenum	ND	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:36	7439-98-7	
Nickel	<b>18.2</b>	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:36	7440-02-0	
Potassium	<b>3080</b>	mg/kg	48.8	1	10/09/17 08:26	10/10/17 08:36	7440-09-7	
Selenium	ND	mg/kg	0.78	1	10/09/17 08:26	10/10/17 08:36	7782-49-2	
Silver	ND	mg/kg	0.59	1	10/09/17 08:26	10/10/17 08:36	7440-22-4	
Sodium	ND	mg/kg	488	1	10/09/17 08:26	10/10/17 08:36	7440-23-5	
Thallium	ND	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:36	7440-28-0	
Vanadium	<b>20.1</b>	mg/kg	0.98	1	10/09/17 08:26	10/10/17 08:36	7440-62-2	
Zinc	<b>56.0</b>	mg/kg	0.98	1	10/09/17 08:26	10/10/17 08:36	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	10/09/17 09:45	10/09/17 17:00	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>8.5</b>	%	0.10	1		10/03/17 14:24		

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB9@2'**      **Lab ID: 30230849005**      Collected: 09/20/17 10:40      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>27000</b>	mg/kg	11.0	1	09/25/17 10:49	09/26/17 10:47	7429-90-5	
Antimony	ND	mg/kg	0.66	1	09/25/17 10:49	09/26/17 10:47	7440-36-0	
Arsenic	<b>5.5</b>	mg/kg	0.55	1	09/25/17 10:49	09/26/17 10:47	7440-38-2	
Barium	<b>53.2</b>	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:47	7440-39-3	
Beryllium	<b>1.6</b>	mg/kg	0.22	1	09/25/17 10:49	09/26/17 10:47	7440-41-7	
Boron	ND	mg/kg	5.5	1	09/25/17 10:49	09/26/17 10:47	7440-42-8	
Cadmium	ND	mg/kg	0.33	1	09/25/17 10:49	09/26/17 10:47	7440-43-9	
Calcium	<b>975</b>	mg/kg	220	1	09/25/17 10:49	09/26/17 10:47	7440-70-2	
Chromium	<b>28.4</b>	mg/kg	0.55	1	09/25/17 10:49	09/26/17 10:47	7440-47-3	
Cobalt	<b>19.6</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:47	7440-48-4	
Copper	<b>23.0</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:47	7440-50-8	
Iron	<b>38800</b>	mg/kg	11.0	1	09/25/17 10:49	09/26/17 10:47	7439-89-6	
Lead	<b>12.2</b>	mg/kg	0.55	1	09/25/17 10:49	09/26/17 10:47	7439-92-1	
Magnesium	<b>5490</b>	mg/kg	55.0	1	09/25/17 10:49	09/26/17 10:47	7439-95-4	
Manganese	<b>396</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:47	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:47	7439-98-7	
Nickel	<b>21.5</b>	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:47	7440-02-0	
Potassium	<b>1610</b>	mg/kg	55.0	1	09/25/17 10:49	09/26/17 10:47	7440-09-7	
Selenium	ND	mg/kg	0.88	1	09/25/17 10:49	09/26/17 10:47	7782-49-2	
Silver	<b>9.0</b>	mg/kg	0.66	1	09/25/17 10:49	09/26/17 10:47	7440-22-4	
Sodium	ND	mg/kg	550	1	09/25/17 10:49	09/26/17 10:47	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:47	7440-28-0	
Vanadium	<b>53.5</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:47	7440-62-2	
Zinc	<b>94.2</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:47	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	09/25/17 12:23	09/25/17 20:08	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	208-96-8	
Anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	207-08-9	
Benzyl alcohol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	59-50-7	
4-Chloroaniline	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

Sample: IB9@2' Lab ID: 30230849005 Collected: 09/20/17 10:40 Received: 09/22/17 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	7005-72-3	
Chrysene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	53-70-3	CH
Dibenzofuran	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	91-94-1	1c,CH
2,4-Dichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	105-67-9	
Dimethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	117-81-7	
Fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	206-44-0	
Fluorene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	193-39-5	CH
Isophorone	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.79	1	09/27/17 23:40	10/05/17 15:08		
Naphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	91-20-3	
2-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	88-74-4	
3-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	99-09-2	
4-Nitroaniline	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	100-01-6	2c
Nitrobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	98-95-3	
2-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	88-75-5	
4-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	86-30-6	
Pentachlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	87-86-5	
Phenanthrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	85-01-8	
Phenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	108-95-2	
Pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB9@2'**      **Lab ID: 30230849005**      Collected: 09/20/17 10:40      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.99	1	09/27/17 23:40	10/05/17 15:08	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:08	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	79	%	10-175	1	09/27/17 23:40	10/05/17 15:08	4165-60-0	
2-Fluorobiphenyl (S)	79	%	10-151	1	09/27/17 23:40	10/05/17 15:08	321-60-8	
Terphenyl-d14 (S)	83	%	10-172	1	09/27/17 23:40	10/05/17 15:08	1718-51-0	
Phenol-d6 (S)	73	%	10-142	1	09/27/17 23:40	10/05/17 15:08	13127-88-3	
2-Fluorophenol (S)	75	%	10-138	1	09/27/17 23:40	10/05/17 15:08	367-12-4	
2,4,6-Tribromophenol (S)	80	%	10-144	1	09/27/17 23:40	10/05/17 15:08	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.086</b>	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	67-64-1	
Benzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-27-4	
Bromoform	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-25-2	
Bromomethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	74-83-9	
TOTAL BTEX	ND	mg/kg	0.031	1	09/29/17 10:07	10/02/17 11:47		
2-Butanone (MEK)	ND	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	78-93-3	
Carbon disulfide	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	56-23-5	
Chlorobenzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	108-90-7	
Chloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-00-3	
Chloroform	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	67-66-3	
Chloromethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	100-41-4	
2-Hexanone	ND	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	591-78-6	
Methylene Chloride	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	1634-04-4	
Styrene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	127-18-4	
Toluene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	108-88-3	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB9@2'**      **Lab ID: 30230849005**      Collected: 09/20/17 10:40      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	79-00-5	
Trichloroethene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	79-01-6	
Vinyl chloride	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	75-01-4	
Xylene (Total)	ND	mg/kg	0.015	1	09/29/17 10:07	10/02/17 11:47	1330-20-7	
m&p-Xylene	ND	mg/kg	0.010	1	09/29/17 10:07	10/02/17 11:47	179601-23-1	
o-Xylene	ND	mg/kg	0.0052	1	09/29/17 10:07	10/02/17 11:47	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	92	%	76-124	1	09/29/17 10:07	10/02/17 11:47	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-133	1	09/29/17 10:07	10/02/17 11:47	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	74-131	1	09/29/17 10:07	10/02/17 11:47	17060-07-0	
Dibromofluoromethane (S)	106	%	71-130	1	09/29/17 10:07	10/02/17 11:47	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>17.4</b>	%	0.10	1		09/28/17 14:21		

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB9@8'**      **Lab ID: 30230849006**      Collected: 09/20/17 11:15      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>26600</b>	mg/kg	10.1	1	10/09/17 08:26	10/10/17 08:38	7429-90-5	
Antimony	ND	mg/kg	0.61	1	10/09/17 08:26	10/10/17 08:38	7440-36-0	
Arsenic	<b>0.94</b>	mg/kg	0.51	1	10/09/17 08:26	10/10/17 08:38	7440-38-2	
Barium	<b>53.7</b>	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:38	7440-39-3	
Beryllium	<b>2.0</b>	mg/kg	0.20	1	10/09/17 08:26	10/10/17 08:38	7440-41-7	
Boron	ND	mg/kg	5.1	1	10/09/17 08:26	10/10/17 08:38	7440-42-8	
Cadmium	ND	mg/kg	0.30	1	10/09/17 08:26	10/10/17 08:38	7440-43-9	
Calcium	<b>1680</b>	mg/kg	202	1	10/09/17 08:26	10/10/17 08:38	7440-70-2	
Chromium	<b>18.6</b>	mg/kg	0.51	1	10/09/17 08:26	10/10/17 08:38	7440-47-3	
Cobalt	<b>42.6</b>	mg/kg	1.0	1	10/09/17 08:26	10/10/17 08:38	7440-48-4	
Copper	<b>12.0</b>	mg/kg	1.0	1	10/09/17 08:26	10/10/17 08:38	7440-50-8	
Iron	<b>32700</b>	mg/kg	10.1	1	10/09/17 08:26	10/10/17 08:38	7439-89-6	
Lead	<b>7.0</b>	mg/kg	0.51	1	10/09/17 08:26	10/10/17 08:38	7439-92-1	
Magnesium	<b>29200</b>	mg/kg	50.6	1	10/09/17 08:26	10/10/17 08:38	7439-95-4	
Manganese	<b>1350</b>	mg/kg	1.0	1	10/09/17 08:26	10/10/17 08:38	7439-96-5	
Molybdenum	ND	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:38	7439-98-7	
Nickel	<b>24.7</b>	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:38	7440-02-0	
Potassium	<b>8740</b>	mg/kg	50.6	1	10/09/17 08:26	10/10/17 08:38	7440-09-7	
Selenium	ND	mg/kg	0.81	1	10/09/17 08:26	10/10/17 08:38	7782-49-2	
Silver	ND	mg/kg	0.61	1	10/09/17 08:26	10/10/17 08:38	7440-22-4	
Sodium	ND	mg/kg	506	1	10/09/17 08:26	10/10/17 08:38	7440-23-5	
Thallium	ND	mg/kg	2.0	1	10/09/17 08:26	10/10/17 08:38	7440-28-0	
Vanadium	<b>36.8</b>	mg/kg	1.0	1	10/09/17 08:26	10/10/17 08:38	7440-62-2	
Zinc	<b>69.8</b>	mg/kg	1.0	1	10/09/17 08:26	10/10/17 08:38	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	10/09/17 09:45	10/09/17 17:02	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>13.3</b>	%	0.10	1		10/03/17 14:24		

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB12@2'      **Lab ID:** 30230849007      Collected: 09/20/17 11:30      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	27100	mg/kg	10.5	1	09/25/17 10:49	09/26/17 10:49	7429-90-5	
Antimony	ND	mg/kg	0.63	1	09/25/17 10:49	09/26/17 10:49	7440-36-0	
Arsenic	6.1	mg/kg	0.52	1	09/25/17 10:49	09/26/17 10:49	7440-38-2	
Barium	52.8	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:49	7440-39-3	
Beryllium	1.0	mg/kg	0.21	1	09/25/17 10:49	09/26/17 10:49	7440-41-7	
Boron	ND	mg/kg	5.2	1	09/25/17 10:49	09/26/17 10:49	7440-42-8	
Cadmium	ND	mg/kg	0.31	1	09/25/17 10:49	09/26/17 10:49	7440-43-9	
Calcium	1080	mg/kg	210	1	09/25/17 10:49	09/26/17 10:49	7440-70-2	
Chromium	33.0	mg/kg	0.52	1	09/25/17 10:49	09/26/17 10:49	7440-47-3	
Cobalt	19.6	mg/kg	1.0	1	09/25/17 10:49	09/26/17 10:49	7440-48-4	
Copper	17.9	mg/kg	1.0	1	09/25/17 10:49	09/26/17 10:49	7440-50-8	
Iron	30800	mg/kg	10.5	1	09/25/17 10:49	09/26/17 10:49	7439-89-6	
Lead	13.8	mg/kg	0.52	1	09/25/17 10:49	09/26/17 10:49	7439-92-1	
Magnesium	6050	mg/kg	52.4	1	09/25/17 10:49	09/26/17 10:49	7439-95-4	
Manganese	718	mg/kg	1.0	1	09/25/17 10:49	09/26/17 10:49	7439-96-5	
Molybdenum	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:49	7439-98-7	
Nickel	23.7	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:49	7440-02-0	
Potassium	2190	mg/kg	52.4	1	09/25/17 10:49	09/26/17 10:49	7440-09-7	
Selenium	ND	mg/kg	0.84	1	09/25/17 10:49	09/26/17 10:49	7782-49-2	
Silver	10.6	mg/kg	0.63	1	09/25/17 10:49	09/26/17 10:49	7440-22-4	
Sodium	ND	mg/kg	524	1	09/25/17 10:49	09/26/17 10:49	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:49	7440-28-0	
Vanadium	56.2	mg/kg	1.0	1	09/25/17 10:49	09/26/17 10:49	7440-62-2	
Zinc	54.5	mg/kg	1.0	1	09/25/17 10:49	09/26/17 10:49	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 12:23	09/25/17 20:10	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	208-96-8	
Anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	207-08-9	
Benzyl alcohol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	59-50-7	
4-Chloroaniline	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	108-60-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

Sample: IB12@2' Lab ID: 30230849007 Collected: 09/20/17 11:30 Received: 09/22/17 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	7005-72-3	
Chrysene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	53-70-3	CH
Dibenzofuran	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	91-94-1	1c,CH
2,4-Dichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	105-67-9	
Dimethylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	117-81-7	
Fluoranthene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	206-44-0	
Fluorene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	193-39-5	CH
Isophorone	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.80	1	09/27/17 23:40	10/05/17 15:30		
Naphthalene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	91-20-3	
2-Nitroaniline	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	88-74-4	
3-Nitroaniline	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	99-09-2	
4-Nitroaniline	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	100-01-6	2c
Nitrobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	98-95-3	
2-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	88-75-5	
4-Nitrophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	86-30-6	
Pentachlorophenol	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	87-86-5	
Phenanthrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	85-01-8	
Phenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	108-95-2	
Pyrene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	120-82-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB12@2'      **Lab ID:** 30230849007      Collected: 09/20/17 11:30      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	1.0	1	09/27/17 23:40	10/05/17 15:30	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	09/27/17 23:40	10/05/17 15:30	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	76	%	10-175	1	09/27/17 23:40	10/05/17 15:30	4165-60-0	
2-Fluorobiphenyl (S)	76	%	10-151	1	09/27/17 23:40	10/05/17 15:30	321-60-8	
Terphenyl-d14 (S)	77	%	10-172	1	09/27/17 23:40	10/05/17 15:30	1718-51-0	
Phenol-d6 (S)	78	%	10-142	1	09/27/17 23:40	10/05/17 15:30	13127-88-3	
2-Fluorophenol (S)	76	%	10-138	1	09/27/17 23:40	10/05/17 15:30	367-12-4	
2,4,6-Tribromophenol (S)	80	%	10-144	1	09/27/17 23:40	10/05/17 15:30	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.067</b>	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	67-64-1	
Benzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-27-4	
Bromoform	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-25-2	
Bromomethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	74-83-9	
TOTAL BTEX	ND	mg/kg	0.027	1	09/29/17 10:07	10/02/17 12:13		
2-Butanone (MEK)	ND	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	78-93-3	
Carbon disulfide	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	56-23-5	
Chlorobenzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	108-90-7	
Chloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-00-3	
Chloroform	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	67-66-3	
Chloromethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	100-41-4	
2-Hexanone	ND	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	591-78-6	
Methylene Chloride	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	1634-04-4	
Styrene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	100-42-5	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	127-18-4	
Toluene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	108-88-3	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB12@2'**      **Lab ID: 30230849007**      Collected: 09/20/17 11:30      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	79-00-5	
Trichloroethene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	79-01-6	
Vinyl chloride	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	75-01-4	
Xylene (Total)	ND	mg/kg	0.013	1	09/29/17 10:07	10/02/17 12:13	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0089	1	09/29/17 10:07	10/02/17 12:13	179601-23-1	
o-Xylene	ND	mg/kg	0.0045	1	09/29/17 10:07	10/02/17 12:13	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	93	%	76-124	1	09/29/17 10:07	10/02/17 12:13	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-133	1	09/29/17 10:07	10/02/17 12:13	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	74-131	1	09/29/17 10:07	10/02/17 12:13	17060-07-0	
Dibromofluoromethane (S)	105	%	71-130	1	09/29/17 10:07	10/02/17 12:13	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>17.7</b>	%	0.10	1		09/28/17 14:22		

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB11@2'      **Lab ID:** 30230849008      Collected: 09/20/17 11:40      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>24400</b>	mg/kg	21.6	2	09/25/17 10:49	09/26/17 11:22	7429-90-5	
Antimony	ND	mg/kg	1.3	2	09/25/17 10:49	09/26/17 11:22	7440-36-0	
Arsenic	<b>4.7</b>	mg/kg	1.1	2	09/25/17 10:49	09/26/17 11:22	7440-38-2	
Barium	<b>98.4</b>	mg/kg	4.3	2	09/25/17 10:49	09/26/17 11:22	7440-39-3	
Beryllium	<b>1.9</b>	mg/kg	0.43	2	09/25/17 10:49	09/26/17 11:22	7440-41-7	
Boron	ND	mg/kg	10.8	2	09/25/17 10:49	09/26/17 11:22	7440-42-8	
Cadmium	ND	mg/kg	0.65	2	09/25/17 10:49	09/26/17 11:22	7440-43-9	
Calcium	<b>1620</b>	mg/kg	432	2	09/25/17 10:49	09/26/17 11:22	7440-70-2	
Chromium	<b>21.6</b>	mg/kg	0.54	1	09/25/17 10:49	09/26/17 10:51	7440-47-3	
Cobalt	<b>22.4</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:51	7440-48-4	
Copper	<b>18.7</b>	mg/kg	2.2	2	09/25/17 10:49	09/26/17 11:22	7440-50-8	
Iron	<b>32700</b>	mg/kg	21.6	2	09/25/17 10:49	09/26/17 11:22	7439-89-6	
Lead	<b>16.7</b>	mg/kg	0.54	1	09/25/17 10:49	09/26/17 10:51	7439-92-1	
Magnesium	<b>9530</b>	mg/kg	108	2	09/25/17 10:49	09/26/17 11:22	7439-95-4	
Manganese	<b>440</b>	mg/kg	2.2	2	09/25/17 10:49	09/26/17 11:22	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:51	7439-98-7	
Nickel	<b>27.7</b>	mg/kg	4.3	2	09/25/17 10:49	09/26/17 11:22	7440-02-0	
Potassium	<b>2400</b>	mg/kg	108	2	09/25/17 10:49	09/26/17 11:22	7440-09-7	
Selenium	ND	mg/kg	1.7	2	09/25/17 10:49	09/26/17 11:22	7782-49-2	
Silver	<b>6.0</b>	mg/kg	0.65	1	09/25/17 10:49	09/26/17 10:51	7440-22-4	
Sodium	ND	mg/kg	1080	2	09/25/17 10:49	09/26/17 11:22	7440-23-5	
Thallium	ND	mg/kg	2.2	1	09/25/17 10:49	09/26/17 10:51	7440-28-0	
Vanadium	<b>34.6</b>	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:51	7440-62-2	
Zinc	<b>84.9</b>	mg/kg	2.2	2	09/25/17 10:49	09/26/17 11:22	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.12	1	09/25/17 12:23	09/25/17 20:12	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	83-32-9	
Acenaphthylene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	208-96-8	
Anthracene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	207-08-9	
Benzyl alcohol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	59-50-7	
4-Chloroaniline	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	108-60-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

Sample: IB11@2' Lab ID: 30230849008 Collected: 09/20/17 11:40 Received: 09/22/17 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	91-58-7	
2-Chlorophenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	7005-72-3	
Chrysene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	53-70-3	CH
Dibenzofuran	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	91-94-1	1c,CH
2,4-Dichlorophenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	120-83-2	
Diethylphthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	105-67-9	
Dimethylphthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	117-81-7	
Fluoranthene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	206-44-0	
Fluorene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	77-47-4	
Hexachloroethane	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	193-39-5	CH
Isophorone	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.78	1	09/27/17 23:40	10/05/17 15:51		
Naphthalene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	91-20-3	
2-Nitroaniline	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	88-74-4	
3-Nitroaniline	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	99-09-2	
4-Nitroaniline	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	100-01-6	2c
Nitrobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	98-95-3	
2-Nitrophenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	88-75-5	
4-Nitrophenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	86-30-6	
Pentachlorophenol	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	87-86-5	
Phenanthrene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	85-01-8	
Phenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	108-95-2	
Pyrene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	120-82-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB11@2'      **Lab ID:** 30230849008      Collected: 09/20/17 11:40      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.97	1	09/27/17 23:40	10/05/17 15:51	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.39	1	09/27/17 23:40	10/05/17 15:51	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	82	%	10-175	1	09/27/17 23:40	10/05/17 15:51	4165-60-0	
2-Fluorobiphenyl (S)	80	%	10-151	1	09/27/17 23:40	10/05/17 15:51	321-60-8	
Terphenyl-d14 (S)	86	%	10-172	1	09/27/17 23:40	10/05/17 15:51	1718-51-0	
Phenol-d6 (S)	80	%	10-142	1	09/27/17 23:40	10/05/17 15:51	13127-88-3	
2-Fluorophenol (S)	77	%	10-138	1	09/27/17 23:40	10/05/17 15:51	367-12-4	
2,4,6-Tribromophenol (S)	84	%	10-144	1	09/27/17 23:40	10/05/17 15:51	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.059</b>	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	67-64-1	
Benzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-27-4	
Bromoform	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-25-2	
Bromomethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	74-83-9	
TOTAL BTEX	ND	mg/kg	0.025	1	09/29/17 10:07	10/02/17 12:40		
2-Butanone (MEK)	ND	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	78-93-3	
Carbon disulfide	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	56-23-5	
Chlorobenzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	108-90-7	
Chloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-00-3	
Chloroform	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	67-66-3	
Chloromethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	100-41-4	
2-Hexanone	ND	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	591-78-6	
Methylene Chloride	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	1634-04-4	
Styrene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	127-18-4	
Toluene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	108-88-3	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB11@2'      Lab ID: 30230849008      Collected: 09/20/17 11:40      Received: 09/22/17 10:20      Matrix: Solid**

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	79-00-5	
Trichloroethene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	79-01-6	
Vinyl chloride	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	75-01-4	
Xylene (Total)	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 12:40	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0082	1	09/29/17 10:07	10/02/17 12:40	179601-23-1	
o-Xylene	ND	mg/kg	0.0041	1	09/29/17 10:07	10/02/17 12:40	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	93	%	76-124	1	09/29/17 10:07	10/02/17 12:40	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-133	1	09/29/17 10:07	10/02/17 12:40	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	74-131	1	09/29/17 10:07	10/02/17 12:40	17060-07-0	
Dibromofluoromethane (S)	105	%	71-130	1	09/29/17 10:07	10/02/17 12:40	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>15.8</b>	%	0.10	1		09/28/17 14:22		

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample:** IB11@8' **Lab ID:** 30230849009 **Collected:** 09/20/17 11:50 **Received:** 09/22/17 10:20 **Matrix:** Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3050B						
Aluminum	<b>77600</b>	mg/kg	55.9	1	10/09/17 08:26	10/10/17 08:40	7429-90-5	
Antimony	ND	mg/kg	3.4	1	10/09/17 08:26	10/10/17 08:40	7440-36-0	
Arsenic	<b>15.1</b>	mg/kg	2.8	1	10/09/17 08:26	10/10/17 08:40	7440-38-2	
Barium	<b>1220</b>	mg/kg	11.2	1	10/09/17 08:26	10/10/17 08:40	7440-39-3	
Beryllium	<b>15.0</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:40	7440-41-7	
Boron	ND	mg/kg	27.9	1	10/09/17 08:26	10/10/17 08:40	7440-42-8	
Cadmium	ND	mg/kg	1.7	1	10/09/17 08:26	10/10/17 08:40	7440-43-9	
Calcium	<b>2440</b>	mg/kg	1120	1	10/09/17 08:26	10/10/17 08:40	7440-70-2	
Chromium	<b>79.0</b>	mg/kg	2.8	1	10/09/17 08:26	10/10/17 08:40	7440-47-3	
Cobalt	<b>333</b>	mg/kg	5.6	1	10/09/17 08:26	10/10/17 08:40	7440-48-4	
Copper	<b>143</b>	mg/kg	5.6	1	10/09/17 08:26	10/10/17 08:40	7440-50-8	
Iron	<b>141000</b>	mg/kg	55.9	1	10/09/17 08:26	10/10/17 08:40	7439-89-6	
Lead	<b>83.9</b>	mg/kg	2.8	1	10/09/17 08:26	10/10/17 08:40	7439-92-1	
Magnesium	<b>91900</b>	mg/kg	279	1	10/09/17 08:26	10/10/17 08:40	7439-95-4	
Manganese	<b>10900</b>	mg/kg	5.6	1	10/09/17 08:26	10/10/17 08:40	7439-96-5	
Molybdenum	ND	mg/kg	11.2	1	10/09/17 08:26	10/10/17 08:40	7439-98-7	
Nickel	<b>228</b>	mg/kg	11.2	1	10/09/17 08:26	10/10/17 08:40	7440-02-0	
Potassium	<b>40700</b>	mg/kg	279	1	10/09/17 08:26	10/10/17 08:40	7440-09-7	
Selenium	ND	mg/kg	4.5	1	10/09/17 08:26	10/10/17 08:40	7782-49-2	
Silver	ND	mg/kg	3.4	1	10/09/17 08:26	10/10/17 08:40	7440-22-4	
Sodium	ND	mg/kg	2790	1	10/09/17 08:26	10/10/17 08:40	7440-23-5	
Thallium	ND	mg/kg	11.2	1	10/09/17 08:26	10/10/17 08:40	7440-28-0	
Vanadium	<b>164</b>	mg/kg	5.6	1	10/09/17 08:26	10/10/17 08:40	7440-62-2	
Zinc	<b>577</b>	mg/kg	5.6	1	10/09/17 08:26	10/10/17 08:40	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.57	1	10/09/17 09:45	10/09/17 17:04	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>83.1</b>	%	0.10	1		10/03/17 14:24		

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample:** IB10@2'      **Lab ID:** 30230849010      Collected: 09/20/17 12:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	22000	mg/kg	10.6	1	09/25/17 10:49	09/26/17 10:54	7429-90-5	
Antimony	ND	mg/kg	0.63	1	09/25/17 10:49	09/26/17 10:54	7440-36-0	
Arsenic	0.89	mg/kg	0.53	1	09/25/17 10:49	09/26/17 10:54	7440-38-2	
Barium	56.1	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:54	7440-39-3	
Beryllium	3.1	mg/kg	0.21	1	09/25/17 10:49	09/26/17 10:54	7440-41-7	
Boron	ND	mg/kg	5.3	1	09/25/17 10:49	09/26/17 10:54	7440-42-8	
Cadmium	0.34	mg/kg	0.32	1	09/25/17 10:49	09/26/17 10:54	7440-43-9	
Calcium	234	mg/kg	211	1	09/25/17 10:49	09/26/17 10:54	7440-70-2	
Chromium	24.4	mg/kg	0.53	1	09/25/17 10:49	09/26/17 10:54	7440-47-3	
Cobalt	18.8	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:54	7440-48-4	
Copper	15.1	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:54	7440-50-8	
Iron	27500	mg/kg	10.6	1	09/25/17 10:49	09/26/17 10:54	7439-89-6	
Lead	11.1	mg/kg	0.53	1	09/25/17 10:49	09/26/17 10:54	7439-92-1	
Magnesium	23800	mg/kg	52.9	1	09/25/17 10:49	09/26/17 10:54	7439-95-4	
Manganese	926	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:54	7439-96-5	
Molybdenum	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:54	7439-98-7	
Nickel	47.6	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:54	7440-02-0	
Potassium	7640	mg/kg	52.9	1	09/25/17 10:49	09/26/17 10:54	7440-09-7	
Selenium	ND	mg/kg	0.85	1	09/25/17 10:49	09/26/17 10:54	7782-49-2	
Silver	9.2	mg/kg	0.63	1	09/25/17 10:49	09/26/17 10:54	7440-22-4	
Sodium	ND	mg/kg	529	1	09/25/17 10:49	09/26/17 10:54	7440-23-5	
Thallium	ND	mg/kg	2.1	1	09/25/17 10:49	09/26/17 10:54	7440-28-0	
Vanadium	37.9	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:54	7440-62-2	
Zinc	161	mg/kg	1.1	1	09/25/17 10:49	09/26/17 10:54	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	09/25/17 12:23	09/25/17 20:13	7439-97-6	
<b>8270 MSSV FULL LIST MICROWAVE</b>		Analytical Method: EPA 8270C    Preparation Method: EPA 3546						
Acenaphthene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	83-32-9	
Acenaphthylene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	208-96-8	
Anthracene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	207-08-9	
Benzyl alcohol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	100-51-6	
4-Bromophenylphenyl ether	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	101-55-3	
Butylbenzylphthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	59-50-7	
4-Chloroaniline	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	111-44-4	
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	108-60-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

Sample: IB10@2' Lab ID: 30230849010 Collected: 09/20/17 12:00 Received: 09/22/17 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C Preparation Method: EPA 3546								
2-Chloronaphthalene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	91-58-7	
2-Chlorophenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	95-57-8	
4-Chlorophenylphenyl ether	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	7005-72-3	
Chrysene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	53-70-3	CH
Dibenzofuran	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	132-64-9	
1,2-Dichlorobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	106-46-7	
3,3'-Dichlorobenzidine	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	91-94-1	1c,CH
2,4-Dichlorophenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	120-83-2	
Diethylphthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	105-67-9	
Dimethylphthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	131-11-3	
Di-n-butylphthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	84-74-2	
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	534-52-1	
2,4-Dinitrophenol	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	117-81-7	
Fluoranthene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	206-44-0	
Fluorene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	86-73-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	87-68-3	
Hexachlorobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	118-74-1	
Hexachlorocyclopentadiene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	77-47-4	
Hexachloroethane	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	193-39-5	CH
Isophorone	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	78-59-1	
2-Methylnaphthalene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.76	1	09/27/17 23:40	10/05/17 16:12		
Naphthalene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	91-20-3	
2-Nitroaniline	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	88-74-4	
3-Nitroaniline	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	99-09-2	
4-Nitroaniline	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	100-01-6	1c
Nitrobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	98-95-3	
2-Nitrophenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	88-75-5	
4-Nitrophenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	100-02-7	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	86-30-6	
Pentachlorophenol	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	87-86-5	
Phenanthrene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	85-01-8	
Phenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	108-95-2	
Pyrene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	129-00-0	
1,2,4-Trichlorobenzene	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	120-82-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample:** IB10@2'      **Lab ID:** 30230849010      Collected: 09/20/17 12:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV FULL LIST MICROWAVE</b> Analytical Method: EPA 8270C      Preparation Method: EPA 3546								
2,4,5-Trichlorophenol	ND	mg/kg	0.95	1	09/27/17 23:40	10/05/17 16:12	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.38	1	09/27/17 23:40	10/05/17 16:12	88-06-2	
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	51	%	10-175	1	09/27/17 23:40	10/05/17 16:12	4165-60-0	
2-Fluorobiphenyl (S)	52	%	10-151	1	09/27/17 23:40	10/05/17 16:12	321-60-8	
Terphenyl-d14 (S)	55	%	10-172	1	09/27/17 23:40	10/05/17 16:12	1718-51-0	
Phenol-d6 (S)	51	%	10-142	1	09/27/17 23:40	10/05/17 16:12	13127-88-3	
2-Fluorophenol (S)	51	%	10-138	1	09/27/17 23:40	10/05/17 16:12	367-12-4	
2,4,6-Tribromophenol (S)	44	%	10-144	1	09/27/17 23:40	10/05/17 16:12	118-79-6	
<b>8260B MSV 5035 Low Level</b> Analytical Method: EPA 8260B      Preparation Method: EPA 5035A								
Acetone	<b>0.15</b>	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	67-64-1	
Benzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	71-43-2	
Bromodichloromethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-27-4	
Bromoform	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-25-2	
Bromomethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	74-83-9	
TOTAL BTEX	ND	mg/kg	0.035	1	09/29/17 10:07	10/02/17 13:06		
2-Butanone (MEK)	<b>0.018</b>	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	78-93-3	
Carbon disulfide	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-15-0	
Carbon tetrachloride	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	56-23-5	
Chlorobenzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	108-90-7	
Chloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-00-3	
Chloroform	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	67-66-3	
Chloromethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	74-87-3	
Dibromochloromethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	124-48-1	
1,2-Dichlorobenzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	106-46-7	
1,1-Dichloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	107-06-2	
1,2-Dichloroethene (Total)	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	540-59-0	
1,1-Dichloroethene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	78-87-5	
cis-1,3-Dichloropropene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	10061-02-6	
Ethylbenzene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	100-41-4	
2-Hexanone	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	591-78-6	
Methylene Chloride	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	1634-04-4	
Styrene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	127-18-4	
Toluene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	108-88-3	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30230849

**Sample: IB10@2'**      **Lab ID: 30230849010**      Collected: 09/20/17 12:00      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV 5035 Low Level</b>		Analytical Method: EPA 8260B    Preparation Method: EPA 5035A						
1,1,1-Trichloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	79-00-5	
Trichloroethene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	79-01-6	
Vinyl chloride	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	75-01-4	
Xylene (Total)	ND	mg/kg	0.017	1	09/29/17 10:07	10/02/17 13:06	1330-20-7	
m&p-Xylene	ND	mg/kg	0.012	1	09/29/17 10:07	10/02/17 13:06	179601-23-1	
o-Xylene	ND	mg/kg	0.0058	1	09/29/17 10:07	10/02/17 13:06	95-47-6	
<b>Surrogates</b>								
Toluene-d8 (S)	93	%	76-124	1	09/29/17 10:07	10/02/17 13:06	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-133	1	09/29/17 10:07	10/02/17 13:06	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	74-131	1	09/29/17 10:07	10/02/17 13:06	17060-07-0	
Dibromofluoromethane (S)	104	%	71-130	1	09/29/17 10:07	10/02/17 13:06	1868-53-7	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>14.0</b>	%	0.10	1		09/28/17 14:22		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230849

**Sample: IB11@8**      **Lab ID: 30230849011**      Collected: 09/20/17 12:05      Received: 09/22/17 10:20      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3050B						
Aluminum	<b>35600</b>	mg/kg	10.8	1	10/09/17 08:26	10/10/17 08:42	7429-90-5	
Antimony	ND	mg/kg	0.65	1	10/09/17 08:26	10/10/17 08:42	7440-36-0	
Arsenic	ND	mg/kg	0.54	1	10/09/17 08:26	10/10/17 08:42	7440-38-2	
Barium	<b>80.3</b>	mg/kg	2.2	1	10/09/17 08:26	10/10/17 08:42	7440-39-3	
Beryllium	<b>3.2</b>	mg/kg	0.22	1	10/09/17 08:26	10/10/17 08:42	7440-41-7	
Boron	ND	mg/kg	5.4	1	10/09/17 08:26	10/10/17 08:42	7440-42-8	
Cadmium	ND	mg/kg	0.32	1	10/09/17 08:26	10/10/17 08:42	7440-43-9	
Calcium	<b>440</b>	mg/kg	215	1	10/09/17 08:26	10/10/17 08:42	7440-70-2	
Chromium	<b>29.3</b>	mg/kg	0.54	1	10/09/17 08:26	10/10/17 08:42	7440-47-3	
Cobalt	<b>58.5</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:42	7440-48-4	
Copper	<b>63.7</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:42	7440-50-8	
Iron	<b>30400</b>	mg/kg	10.8	1	10/09/17 08:26	10/10/17 08:42	7439-89-6	
Lead	<b>10.9</b>	mg/kg	0.54	1	10/09/17 08:26	10/10/17 08:42	7439-92-1	
Magnesium	<b>48900</b>	mg/kg	53.9	1	10/09/17 08:26	10/10/17 08:42	7439-95-4	
Manganese	<b>1460</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:42	7439-96-5	
Molybdenum	ND	mg/kg	2.2	1	10/09/17 08:26	10/10/17 08:42	7439-98-7	
Nickel	<b>70.2</b>	mg/kg	2.2	1	10/09/17 08:26	10/10/17 08:42	7440-02-0	
Potassium	<b>12900</b>	mg/kg	53.9	1	10/09/17 08:26	10/10/17 08:42	7440-09-7	
Selenium	ND	mg/kg	0.86	1	10/09/17 08:26	10/10/17 08:42	7782-49-2	
Silver	ND	mg/kg	0.65	1	10/09/17 08:26	10/10/17 08:42	7440-22-4	
Sodium	ND	mg/kg	539	1	10/09/17 08:26	10/10/17 08:42	7440-23-5	
Thallium	ND	mg/kg	2.2	1	10/09/17 08:26	10/10/17 08:42	7440-28-0	
Vanadium	<b>64.7</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:42	7440-62-2	
Zinc	<b>154</b>	mg/kg	1.1	1	10/09/17 08:26	10/10/17 08:42	7440-66-6	
<b>7471 Mercury</b>		Analytical Method: EPA 7471A    Preparation Method: EPA 7471A						
Mercury	ND	mg/kg	0.11	1	10/09/17 09:45	10/09/17 17:05	7439-97-6	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87						
Percent Moisture	<b>14.1</b>	%	0.10	1		10/03/17 14:24		

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

QC Batch: 272962

Analysis Method: EPA 7471A

QC Batch Method: EPA 7471A

Analysis Description: 7471 Mercury

Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

METHOD BLANK: 1343105

Matrix: Solid

Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	09/25/17 19:55	

LABORATORY CONTROL SAMPLE: 1343106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.21	0.22	106	80-120	

MATRIX SPIKE SAMPLE: 1343108

Parameter	Units	30230849001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	ND	.6	0.64	104	80-120	

SAMPLE DUPLICATE: 1343107

Parameter	Units	30230849001 Result	Dup Result	RPD	Qualifiers
Mercury	mg/kg	ND	.0097J		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

QC Batch: 274637

Analysis Method: EPA 7471A

QC Batch Method: EPA 7471A

Analysis Description: 7471 Mercury

Associated Lab Samples: 30230849002, 30230849004, 30230849006, 30230849009, 30230849011

METHOD BLANK: 1350988

Matrix: Solid

Associated Lab Samples: 30230849002, 30230849004, 30230849006, 30230849009, 30230849011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	10/09/17 16:52	

LABORATORY CONTROL SAMPLE: 1350989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.21	0.22	106	80-120	

MATRIX SPIKE SAMPLE: 1350991

Parameter	Units	30230849002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	ND	.59	0.63	106	80-120	

SAMPLE DUPLICATE: 1350990

Parameter	Units	30230849002 Result	Dup Result	RPD	Qualifiers
Mercury	mg/kg	ND	ND		

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

QC Batch: 272917 Analysis Method: EPA 6010B  
QC Batch Method: EPA 3050B Analysis Description: 6010 MET  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

METHOD BLANK: 1342912 Matrix: Solid  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	10.0	09/26/17 10:14	
Antimony	mg/kg	ND	0.60	09/26/17 10:14	
Arsenic	mg/kg	ND	0.50	09/26/17 10:14	
Barium	mg/kg	ND	2.0	09/26/17 10:14	
Beryllium	mg/kg	ND	0.20	09/26/17 10:14	
Boron	mg/kg	ND	5.0	09/26/17 10:14	
Cadmium	mg/kg	ND	0.30	09/26/17 10:14	
Calcium	mg/kg	ND	200	09/26/17 10:14	
Chromium	mg/kg	ND	0.50	09/26/17 10:14	
Cobalt	mg/kg	ND	1.0	09/26/17 10:14	
Copper	mg/kg	ND	1.0	09/26/17 10:14	
Iron	mg/kg	ND	10.0	09/26/17 10:14	
Lead	mg/kg	ND	0.50	09/26/17 10:14	
Magnesium	mg/kg	ND	50.0	09/26/17 10:14	
Manganese	mg/kg	ND	1.0	09/26/17 10:14	
Molybdenum	mg/kg	ND	2.0	09/26/17 10:14	
Nickel	mg/kg	ND	2.0	09/26/17 10:14	
Potassium	mg/kg	ND	50.0	09/26/17 10:14	
Selenium	mg/kg	ND	0.80	09/26/17 10:14	
Silver	mg/kg	ND	0.60	09/26/17 10:14	
Sodium	mg/kg	ND	500	09/26/17 10:14	
Thallium	mg/kg	ND	2.0	09/26/17 10:14	
Vanadium	mg/kg	ND	1.0	09/26/17 10:14	
Zinc	mg/kg	ND	1.0	09/26/17 10:14	

LABORATORY CONTROL SAMPLE: 1342913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	490	511	104	80-120	
Antimony	mg/kg	49	52.7	108	80-120	
Arsenic	mg/kg	49	50.7	104	80-120	
Barium	mg/kg	49	51.6	105	80-120	
Beryllium	mg/kg	49	52.2	107	80-120	
Boron	mg/kg	49	49.1	100	80-120	
Cadmium	mg/kg	49	52.2	106	80-120	
Calcium	mg/kg	490	524	107	80-120	
Chromium	mg/kg	49	55.4	113	80-120	
Cobalt	mg/kg	49	51.9	106	80-120	
Copper	mg/kg	49	52.9	108	80-120	
Iron	mg/kg	490	515	105	80-120	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

LABORATORY CONTROL SAMPLE: 1342913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	49	50.3	103	80-120	
Magnesium	mg/kg	490	516	105	80-120	
Manganese	mg/kg	49	52.0	106	80-120	
Molybdenum	mg/kg	49	55.7	114	80-120	
Nickel	mg/kg	49	54.1	110	80-120	
Potassium	mg/kg	490	524	107	80-120	
Selenium	mg/kg	49	50.6	103	80-120	
Silver	mg/kg	24.5	26.3	107	80-120	
Sodium	mg/kg	490	515	105	80-120	
Thallium	mg/kg	49	50.2	102	80-120	
Vanadium	mg/kg	49	55.5	113	80-120	
Zinc	mg/kg	49	53.6	109	80-120	

MATRIX SPIKE SAMPLE: 1342915

Parameter	Units	30230836001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	18300	514	21800	692	75-125	MH
Antimony	mg/kg	ND	51.4	22.7	40	75-125	ML
Arsenic	mg/kg	24.1	51.4	66.4	82	75-125	
Barium	mg/kg	92.7	51.4	175	161	75-125	MH
Beryllium	mg/kg	5.0	51.4	51.9	91	75-125	
Boron	mg/kg	ND	51.4	46.2J	90	75-125	
Cadmium	mg/kg	ND	51.4	50.3	96	75-125	
Calcium	mg/kg	ND	514	654J	107	75-125	
Chromium	mg/kg	14.3	51.4	65.3	99	75-125	
Cobalt	mg/kg	33.1	51.4	91.9	114	75-125	
Copper	mg/kg	60.6	51.4	105	87	75-125	
Iron	mg/kg	61200	514	53100	-1570	75-125	ML
Lead	mg/kg	38.7	51.4	84.7	90	75-125	
Magnesium	mg/kg	5800	514	8660	556	75-125	MH
Manganese	mg/kg	934	51.4	1210	545	75-125	MH
Molybdenum	mg/kg	ND	51.4	60.5	116	75-125	
Nickel	mg/kg	66.6	51.4	114	91	75-125	
Potassium	mg/kg	3790	514	6040	438	75-125	MH
Selenium	mg/kg	ND	51.4	44.3	86	75-125	
Silver	mg/kg	ND	25.6	25.6	95	75-125	
Sodium	mg/kg	ND	514	614J	85	75-125	
Thallium	mg/kg	ND	51.4	49.4	96	75-125	
Vanadium	mg/kg	43.8	51.4	95.0	100	75-125	
Zinc	mg/kg	58.2	51.4	111	103	75-125	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

SAMPLE DUPLICATE: 1342914

Parameter	Units	30230836001 Result	Dup Result	RPD	Qualifiers
Aluminum	mg/kg	18300	17500	4	
Antimony	mg/kg	ND	ND		
Arsenic	mg/kg	24.1	17.6	31	D6
Barium	mg/kg	92.7	92.0	1	
Beryllium	mg/kg	5.0	4.5	10	
Boron	mg/kg	ND	ND		
Cadmium	mg/kg	ND	1.3J		
Calcium	mg/kg	ND	178J		
Chromium	mg/kg	14.3	13.7	5	
Cobalt	mg/kg	33.1	31.5	5	
Copper	mg/kg	60.6	52.6	14	
Iron	mg/kg	61200	49500	21	D6
Lead	mg/kg	38.7	30.4	24	D6
Magnesium	mg/kg	5800	6460	11	
Manganese	mg/kg	934	1370	38	D6
Molybdenum	mg/kg	ND	.68J		
Nickel	mg/kg	66.6	58.7	13	
Potassium	mg/kg	3790	4180	10	
Selenium	mg/kg	ND	ND		
Silver	mg/kg	ND	1.5J		
Sodium	mg/kg	ND	ND		
Thallium	mg/kg	ND	ND		
Vanadium	mg/kg	43.8	40.6	8	
Zinc	mg/kg	58.2	55.5	5	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

QC Batch: 274621 Analysis Method: EPA 6010B  
QC Batch Method: EPA 3050B Analysis Description: 6010 MET  
Associated Lab Samples: 30230849002, 30230849004, 30230849006, 30230849009, 30230849011

METHOD BLANK: 1350929 Matrix: Solid  
Associated Lab Samples: 30230849002, 30230849004, 30230849006, 30230849009, 30230849011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	9.8	10/10/17 08:11	
Antimony	mg/kg	ND	0.59	10/10/17 08:11	
Arsenic	mg/kg	ND	0.49	10/10/17 08:11	
Barium	mg/kg	ND	2.0	10/10/17 08:11	
Beryllium	mg/kg	ND	0.20	10/10/17 08:11	
Boron	mg/kg	ND	4.9	10/10/17 08:11	
Cadmium	mg/kg	ND	0.29	10/10/17 08:11	
Calcium	mg/kg	ND	196	10/10/17 08:11	
Chromium	mg/kg	ND	0.49	10/10/17 08:11	
Cobalt	mg/kg	ND	0.98	10/10/17 08:11	
Copper	mg/kg	ND	0.98	10/10/17 08:11	
Iron	mg/kg	ND	9.8	10/10/17 08:11	
Lead	mg/kg	ND	0.49	10/10/17 08:11	
Magnesium	mg/kg	ND	49.0	10/10/17 08:11	
Manganese	mg/kg	ND	0.98	10/10/17 08:11	
Molybdenum	mg/kg	ND	2.0	10/10/17 08:11	
Nickel	mg/kg	ND	2.0	10/10/17 08:11	
Potassium	mg/kg	ND	49.0	10/10/17 08:11	
Selenium	mg/kg	ND	0.78	10/10/17 08:11	
Silver	mg/kg	ND	0.59	10/10/17 08:11	
Sodium	mg/kg	ND	490	10/10/17 08:11	
Thallium	mg/kg	ND	2.0	10/10/17 08:11	
Vanadium	mg/kg	ND	0.98	10/10/17 08:11	
Zinc	mg/kg	ND	0.98	10/10/17 08:11	

LABORATORY CONTROL SAMPLE: 1350930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	500	514	103	80-120	
Antimony	mg/kg	50	51.9	104	80-120	
Arsenic	mg/kg	50	48.3	97	80-120	
Barium	mg/kg	50	52.2	104	80-120	
Beryllium	mg/kg	50	51.4	103	80-120	
Boron	mg/kg	50	50.5	101	80-120	
Cadmium	mg/kg	50	50.1	100	80-120	
Calcium	mg/kg	500	523	105	80-120	
Chromium	mg/kg	50	50.7	101	80-120	
Cobalt	mg/kg	50	48.3	97	80-120	
Copper	mg/kg	50	51.1	102	80-120	
Iron	mg/kg	500	525	105	80-120	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

LABORATORY CONTROL SAMPLE: 1350930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	47.9	96	80-120	
Magnesium	mg/kg	500	511	102	80-120	
Manganese	mg/kg	50	50.0	100	80-120	
Molybdenum	mg/kg	50	51.1	102	80-120	
Nickel	mg/kg	50	51.8	104	80-120	
Potassium	mg/kg	500	494	99	80-120	
Selenium	mg/kg	50	48.4	97	80-120	
Silver	mg/kg	25	25.0	100	80-120	
Sodium	mg/kg	500	499J	100	80-120	
Thallium	mg/kg	50	48.3	97	80-120	
Vanadium	mg/kg	50	51.6	103	80-120	
Zinc	mg/kg	50	50.6	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1350932 1350933

Parameter	Units	30232123001		MS	MSD	MS		MSD		% Rec Limits	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Aluminum	mg/kg	11700	446	446	14200	14700	546	660	75-125	4	MH	
Antimony	mg/kg	ND	44.6	44.6	14.1	15.3	32	34	75-125	8	ML	
Arsenic	mg/kg	5.8	44.6	44.6	34.7	37.1	65	70	75-125	7	ML	
Barium	mg/kg	120	44.6	44.6	159	157	89	83	75-125	2		
Beryllium	mg/kg	1.4	44.6	44.6	34.3	36.7	74	79	75-125	7	ML	
Boron	mg/kg	ND	44.6	44.6	31.1	33.6	67	73	75-125	8	ML	
Cadmium	mg/kg	ND	44.6	44.6	31.4	33.6	70	75	75-125	7	ML	
Calcium	mg/kg	2920	446	446	2560	2770	-82	-34	75-125	8	ML	
Chromium	mg/kg	12.3	44.6	44.6	44.1	39.3	71	60	75-125	12	ML	
Cobalt	mg/kg	8.8	44.6	44.6	53.3	54.9	100	103	75-125	3		
Copper	mg/kg	7.0	44.6	44.6	40.1	43.6	74	82	75-125	9	ML	
Iron	mg/kg	11800	446	446	11300	13200	-123	305	75-125	16	MH,ML	
Lead	mg/kg	16.2	44.6	44.6	58.9	60.8	96	100	75-125	3		
Magnesium	mg/kg	1950	446	446	2160	2360	46	92	75-125	9	ML	
Manganese	mg/kg	1260	44.6	44.6	1420	1280	360	30	75-125	11	MH,ML	
Molybdenum	mg/kg	ND	44.6	44.6	47.1	48.2	104	106	75-125	2		
Nickel	mg/kg	10.6	44.6	44.6	43.3	46.3	73	80	75-125	7	ML	
Potassium	mg/kg	740	446	446	1250	1340	115	134	75-125	6	MH	
Selenium	mg/kg	ND	44.6	44.6	28.1	30.6	63	68	75-125	8	ML	
Silver	mg/kg	ND	22.3	22.3	16.2	14.0	72	62	75-125	15	ML	
Sodium	mg/kg	ND	446	446	434J	446J	74	77	75-125		ML	
Thallium	mg/kg	ND	44.6	44.6	40.7	41.6	91	93	75-125	2		
Vanadium	mg/kg	20.5	44.6	44.6	55.0	47.3	77	60	75-125	15	ML	
Zinc	mg/kg	32.4	44.6	44.6	66.9	71.5	77	88	75-125	7		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

SAMPLE DUPLICATE: 1350931

Parameter	Units	30232123001 Result	Dup Result	RPD	Qualifiers
Aluminum	mg/kg	11700	11700	1	
Antimony	mg/kg	ND	ND		
Arsenic	mg/kg	5.8	5.3	9	
Barium	mg/kg	120	118	2	
Beryllium	mg/kg	1.4	1.5	11	
Boron	mg/kg	ND	.99J		
Cadmium	mg/kg	ND	ND		
Calcium	mg/kg	2920	2300	24	D6
Chromium	mg/kg	12.3	12.2	0	
Cobalt	mg/kg	8.8	9.9	12	
Copper	mg/kg	7.0	7.6	8	
Iron	mg/kg	11800	12600	7	
Lead	mg/kg	16.2	17.8	9	
Magnesium	mg/kg	1950	1710	13	
Manganese	mg/kg	1260	1510	18	
Molybdenum	mg/kg	ND	.81J		
Nickel	mg/kg	10.6	10.8	2	
Potassium	mg/kg	740	713	4	
Selenium	mg/kg	ND	ND		
Silver	mg/kg	ND	.2J		
Sodium	mg/kg	ND	103J		
Thallium	mg/kg	ND	ND		
Vanadium	mg/kg	20.5	22.1	7	
Zinc	mg/kg	32.4	31.9	2	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

QC Batch: 273625 Analysis Method: EPA 8260B  
QC Batch Method: EPA 5035A Analysis Description: 8260B MSV 5035 Low  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

METHOD BLANK: 1345855 Matrix: Solid  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
1,1,2-Trichloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
1,1-Dichloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
1,1-Dichloroethene	mg/kg	ND	0.0050	10/02/17 10:27	
1,2-Dichlorobenzene	mg/kg	ND	0.0050	10/02/17 10:27	
1,2-Dichloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
1,2-Dichloroethene (Total)	mg/kg	ND	0.010	10/02/17 10:27	
1,2-Dichloropropane	mg/kg	ND	0.0050	10/02/17 10:27	
1,3-Dichlorobenzene	mg/kg	ND	0.0050	10/02/17 10:27	
1,4-Dichlorobenzene	mg/kg	ND	0.0050	10/02/17 10:27	
2-Butanone (MEK)	mg/kg	ND	0.010	10/02/17 10:27	
2-Hexanone	mg/kg	ND	0.010	10/02/17 10:27	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.010	10/02/17 10:27	
Acetone	mg/kg	ND	0.010	10/02/17 10:27	
Benzene	mg/kg	ND	0.0050	10/02/17 10:27	
Bromodichloromethane	mg/kg	ND	0.0050	10/02/17 10:27	
Bromoform	mg/kg	ND	0.0050	10/02/17 10:27	
Bromomethane	mg/kg	ND	0.0050	10/02/17 10:27	
Carbon disulfide	mg/kg	ND	0.0050	10/02/17 10:27	
Carbon tetrachloride	mg/kg	ND	0.0050	10/02/17 10:27	
Chlorobenzene	mg/kg	ND	0.0050	10/02/17 10:27	
Chloroethane	mg/kg	ND	0.0050	10/02/17 10:27	
Chloroform	mg/kg	ND	0.0050	10/02/17 10:27	
Chloromethane	mg/kg	ND	0.0050	10/02/17 10:27	
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	10/02/17 10:27	
cis-1,3-Dichloropropene	mg/kg	ND	0.0050	10/02/17 10:27	
Dibromochloromethane	mg/kg	ND	0.0050	10/02/17 10:27	
Ethylbenzene	mg/kg	ND	0.0050	10/02/17 10:27	
m&p-Xylene	mg/kg	ND	0.010	10/02/17 10:27	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	10/02/17 10:27	
Methylene Chloride	mg/kg	ND	0.0050	10/02/17 10:27	
o-Xylene	mg/kg	ND	0.0050	10/02/17 10:27	
Styrene	mg/kg	ND	0.0050	10/02/17 10:27	
Tetrachloroethene	mg/kg	ND	0.0050	10/02/17 10:27	
Toluene	mg/kg	ND	0.0050	10/02/17 10:27	
TOTAL BTEX	mg/kg	ND	0.030	10/02/17 10:27	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	10/02/17 10:27	
trans-1,3-Dichloropropene	mg/kg	ND	0.0050	10/02/17 10:27	
Trichloroethene	mg/kg	ND	0.0050	10/02/17 10:27	
Vinyl chloride	mg/kg	ND	0.0050	10/02/17 10:27	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

METHOD BLANK: 1345855

Matrix: Solid

Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Xylene (Total)	mg/kg	ND	0.015	10/02/17 10:27	
1,2-Dichloroethane-d4 (S)	%	97	74-131	10/02/17 10:27	
4-Bromofluorobenzene (S)	%	96	70-133	10/02/17 10:27	
Dibromofluoromethane (S)	%	104	71-130	10/02/17 10:27	
Toluene-d8 (S)	%	93	76-124	10/02/17 10:27	

LABORATORY CONTROL SAMPLE: 1345856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	.02	0.019	95	70-130	
1,1,2,2-Tetrachloroethane	mg/kg	.02	0.018	89	70-130	
1,1,2-Trichloroethane	mg/kg	.02	0.018	92	70-130	
1,1-Dichloroethane	mg/kg	.02	0.020	98	70-130	
1,1-Dichloroethene	mg/kg	.02	0.021	104	70-130	
1,2-Dichlorobenzene	mg/kg	.02	0.019	95	70-130	
1,2-Dichloroethane	mg/kg	.02	0.019	94	70-130	
1,2-Dichloroethene (Total)	mg/kg	.04	0.038	95	70-130	
1,2-Dichloropropane	mg/kg	.02	0.019	94	70-130	
1,3-Dichlorobenzene	mg/kg	.02	0.019	94	70-130	
1,4-Dichlorobenzene	mg/kg	.02	0.019	93	70-130	
2-Butanone (MEK)	mg/kg	.02	0.024	119	65-137	
2-Hexanone	mg/kg	.02	0.018	91	70-130	
4-Methyl-2-pentanone (MIBK)	mg/kg	.02	0.019	94	70-130	
Acetone	mg/kg	.02	0.017	86	49-158	
Benzene	mg/kg	.02	0.020	100	70-130	
Bromodichloromethane	mg/kg	.02	0.021	103	70-130	
Bromoform	mg/kg	.02	0.018	91	70-130	
Bromomethane	mg/kg	.02	0.018	90	44-154	
Carbon disulfide	mg/kg	.02	0.020	101	33-127	
Carbon tetrachloride	mg/kg	.02	0.020	102	70-130	
Chlorobenzene	mg/kg	.02	0.019	93	70-130	
Chloroethane	mg/kg	.02	0.017	84	70-130	
Chloroform	mg/kg	.02	0.019	93	70-130	
Chloromethane	mg/kg	.02	0.017	83	70-130	
cis-1,2-Dichloroethene	mg/kg	.02	0.019	96	70-130	
cis-1,3-Dichloropropene	mg/kg	.02	0.019	96	70-130	
Dibromochloromethane	mg/kg	.02	0.019	95	70-130	
Ethylbenzene	mg/kg	.02	0.019	95	70-130	
m&p-Xylene	mg/kg	.04	0.038	94	70-130	
Methyl-tert-butyl ether	mg/kg	.02	0.020	101	70-130	
Methylene Chloride	mg/kg	.02	0.019	95	70-130	
o-Xylene	mg/kg	.02	0.018	89	70-130	
Styrene	mg/kg	.02	0.019	95	70-130	
Tetrachloroethene	mg/kg	.02	0.019	93	70-130	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

LABORATORY CONTROL SAMPLE: 1345856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	mg/kg	.02	0.018	90	70-130	
TOTAL BTEX	mg/kg		0.11			
trans-1,2-Dichloroethene	mg/kg	.02	0.019	93	70-130	
trans-1,3-Dichloropropene	mg/kg	.02	0.017	87	70-130	
Trichloroethene	mg/kg	.02	0.018	91	70-130	
Vinyl chloride	mg/kg	.02	0.017	85	70-130	
Xylene (Total)	mg/kg	.06	0.055	92	70-130	
1,2-Dichloroethane-d4 (S)	%			99	74-131	
4-Bromofluorobenzene (S)	%			100	70-133	
Dibromofluoromethane (S)	%			107	71-130	
Toluene-d8 (S)	%			92	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1345857 1345858

Parameter	30230647001		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.							
1,1,1-Trichloroethane	mg/kg	ND	.018	.018	0.015	0.018	89	100	54-124	16	
1,1,2,2-Tetrachloroethane	mg/kg	ND	.018	.018	0.017	0.014	98	78	17-137	19	
1,1,2-Trichloroethane	mg/kg	ND	.018	.018	0.015	0.014	85	77	32-132	6	
1,1-Dichloroethane	mg/kg	ND	.018	.018	0.015	0.017	89	96	43-118	11	
1,1-Dichloroethene	mg/kg	ND	.018	.018	0.016	0.019	95	105	45-122	15	
1,2-Dichlorobenzene	mg/kg	ND	.018	.018	0.013	0.013	74	74	10-132	5	
1,2-Dichloroethane	mg/kg	ND	.018	.018	0.016	0.015	92	85	35-114	3	
1,2-Dichloroethene (Total)	mg/kg	ND	.034	.036	0.030	0.033	86	93	32-115	12	
1,2-Dichloropropane	mg/kg	ND	.018	.018	0.014	0.016	81	88	45-110	12	
1,3-Dichlorobenzene	mg/kg	ND	.018	.018	0.012	0.013	72	73	10-128	6	
1,4-Dichlorobenzene	mg/kg	ND	.018	.018	0.012	0.013	70	71	10-128	6	
2-Butanone (MEK)	mg/kg	ND	.018	.018	0.029	0.017	166	93	10-175	53	R1
2-Hexanone	mg/kg	ND	.018	.018	0.022	0.015	130	81	10-175	42	R1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	.018	.018	0.025	0.017	144	93	14-153	39	R1
Acetone	mg/kg	ND	.018	.018	0.027	0.017	159	96	10-175	46	R1
Benzene	mg/kg	ND	.018	.018	0.015	0.018	88	97	44-120	14	
Bromodichloromethane	mg/kg	ND	.018	.018	0.016	0.017	92	92	46-117	4	
Bromoform	mg/kg	ND	.018	.018	0.015	0.013	87	70	16-128	17	
Bromomethane	mg/kg	ND	.018	.018	0.019	0.020	110	111	32-147	5	
Carbon disulfide	mg/kg	ND	.018	.018	0.017	0.018	97	102	11-152	9	
Carbon tetrachloride	mg/kg	ND	.018	.018	0.016	0.018	92	102	50-122	15	
Chlorobenzene	mg/kg	ND	.018	.018	0.013	0.015	74	81	26-124	13	
Chloroethane	mg/kg	ND	.018	.018	0.014	0.016	83	88	20-136	10	
Chloroform	mg/kg	ND	.018	.018	0.014	0.016	83	89	49-114	12	
Chloromethane	mg/kg	16.6	.018	.018	0.078	0.080	358	350	24-130	2	MH
		ug/kg									
cis-1,2-Dichloroethene	mg/kg	ND	.018	.018	0.015	0.017	86	92	41-111	11	
cis-1,3-Dichloropropene	mg/kg	ND	.018	.018	0.015	0.015	85	85	29-114	4	
Dibromochloromethane	mg/kg	ND	.018	.018	0.014	0.014	82	78	29-125	2	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230849

Parameter	30230647001		MSD		MSD		MS		MSD		Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Ethylbenzene	mg/kg	ND	.018	.018	0.013	0.015	77	86	33-121	15	
m&p-Xylene	mg/kg	ND	.034	.036	0.027	0.030	78	84	26-128	11	
Methyl-tert-butyl ether	mg/kg	ND	.018	.018	0.0072	0.0075	42	42	29-132	4	
Methylene Chloride	mg/kg	ND	.018	.018	0.015	0.013	73	63	10-124	9	
o-Xylene	mg/kg	ND	.018	.018	0.013	0.015	75	81	24-126	12	
Styrene	mg/kg	ND	.018	.018	.0021J	.0027J	12	15	10-142		
Tetrachloroethene	mg/kg	ND	.018	.018	0.014	0.015	79	86	38-127	13	
Toluene	mg/kg	ND	.018	.018	0.013	0.015	77	85	40-114	13	
TOTAL BTEX	mg/kg	ND			0.082	0.093				13	
trans-1,2-Dichloroethene	mg/kg	ND	.018	.018	0.015	0.017	86	94	38-117	13	
trans-1,3-Dichloropropene	mg/kg	ND	.018	.018	0.013	0.013	75	71	14-121	1	
Trichloroethene	mg/kg	ND	.018	.018	0.013	0.015	77	84	39-118	12	
Vinyl chloride	mg/kg	ND	.018	.018	0.016	0.018	90	100	30-121	15	
Xylene (Total)	mg/kg	ND	.052	.054	0.040	0.045	77	83	27-126	12	
1,2-Dichloroethane-d4 (S)	%						115	111	74-131		
4-Bromofluorobenzene (S)	%						100	96	70-133		
Dibromofluoromethane (S)	%						107	108	71-130		
Toluene-d8 (S)	%						89	93	76-124		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

QC Batch: 273360 Analysis Method: EPA 8270C  
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

METHOD BLANK: 1344567 Matrix: Solid  
Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	ND	0.33	09/28/17 14:12	
1,2-Dichlorobenzene	mg/kg	ND	0.33	09/28/17 14:12	
1,3-Dichlorobenzene	mg/kg	ND	0.33	09/28/17 14:12	
1,4-Dichlorobenzene	mg/kg	ND	0.33	09/28/17 14:12	
2,4,5-Trichlorophenol	mg/kg	ND	0.83	09/28/17 14:12	
2,4,6-Trichlorophenol	mg/kg	ND	0.33	09/28/17 14:12	
2,4-Dichlorophenol	mg/kg	ND	0.33	09/28/17 14:12	
2,4-Dimethylphenol	mg/kg	ND	0.33	09/28/17 14:12	
2,4-Dinitrophenol	mg/kg	ND	0.83	09/28/17 14:12	
2,4-Dinitrotoluene	mg/kg	ND	0.33	09/28/17 14:12	
2,6-Dinitrotoluene	mg/kg	ND	0.33	09/28/17 14:12	
2-Chloronaphthalene	mg/kg	ND	0.33	09/28/17 14:12	
2-Chlorophenol	mg/kg	ND	0.33	09/28/17 14:12	
2-Methylnaphthalene	mg/kg	ND	0.33	09/28/17 14:12	
2-Methylphenol(o-Cresol)	mg/kg	ND	0.33	09/28/17 14:12	
2-Nitroaniline	mg/kg	ND	0.83	09/28/17 14:12	
2-Nitrophenol	mg/kg	ND	0.33	09/28/17 14:12	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	0.67	09/28/17 14:12	
3,3'-Dichlorobenzidine	mg/kg	ND	0.33	09/28/17 14:12	
3-Nitroaniline	mg/kg	ND	0.83	09/28/17 14:12	
4,6-Dinitro-2-methylphenol	mg/kg	ND	0.83	09/28/17 14:12	
4-Bromophenylphenyl ether	mg/kg	ND	0.33	09/28/17 14:12	
4-Chloro-3-methylphenol	mg/kg	ND	0.33	09/28/17 14:12	
4-Chloroaniline	mg/kg	ND	0.33	09/28/17 14:12	
4-Chlorophenylphenyl ether	mg/kg	ND	0.33	09/28/17 14:12	
4-Nitroaniline	mg/kg	ND	0.83	09/28/17 14:12	
4-Nitrophenol	mg/kg	ND	0.33	09/28/17 14:12	
Acenaphthene	mg/kg	ND	0.33	09/28/17 14:12	
Acenaphthylene	mg/kg	ND	0.33	09/28/17 14:12	
Anthracene	mg/kg	ND	0.33	09/28/17 14:12	
Benzo(a)anthracene	mg/kg	ND	0.33	09/28/17 14:12	
Benzo(a)pyrene	mg/kg	ND	0.33	09/28/17 14:12	
Benzo(b)fluoranthene	mg/kg	ND	0.33	09/28/17 14:12	
Benzo(g,h,i)perylene	mg/kg	ND	0.33	09/28/17 14:12	
Benzo(k)fluoranthene	mg/kg	ND	0.33	09/28/17 14:12	
Benzyl alcohol	mg/kg	ND	0.33	09/28/17 14:12	
bis(2-Chloroethoxy)methane	mg/kg	ND	0.33	09/28/17 14:12	
bis(2-Chloroethyl) ether	mg/kg	ND	0.33	09/28/17 14:12	
bis(2-Chloroisopropyl) ether	mg/kg	ND	0.33	09/28/17 14:12	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	0.33	09/28/17 14:12	
Butylbenzylphthalate	mg/kg	ND	0.33	09/28/17 14:12	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

METHOD BLANK: 1344567

Matrix: Solid

Associated Lab Samples: 30230849001, 30230849003, 30230849005, 30230849007, 30230849008, 30230849010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chrysene	mg/kg	ND	0.33	09/28/17 14:12	
Di-n-butylphthalate	mg/kg	ND	0.33	09/28/17 14:12	
Di-n-octylphthalate	mg/kg	ND	0.33	09/28/17 14:12	
Dibenz(a,h)anthracene	mg/kg	ND	0.33	09/28/17 14:12	
Dibenzofuran	mg/kg	ND	0.33	09/28/17 14:12	
Diethylphthalate	mg/kg	ND	0.33	09/28/17 14:12	
Dimethylphthalate	mg/kg	ND	0.33	09/28/17 14:12	
Fluoranthene	mg/kg	ND	0.33	09/28/17 14:12	
Fluorene	mg/kg	ND	0.33	09/28/17 14:12	
Hexachloro-1,3-butadiene	mg/kg	ND	0.33	09/28/17 14:12	
Hexachlorobenzene	mg/kg	ND	0.33	09/28/17 14:12	
Hexachlorocyclopentadiene	mg/kg	ND	0.33	09/28/17 14:12	
Hexachloroethane	mg/kg	ND	0.33	09/28/17 14:12	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.33	09/28/17 14:12	
Isophorone	mg/kg	ND	0.33	09/28/17 14:12	
N-Nitroso-di-n-propylamine	mg/kg	ND	0.33	09/28/17 14:12	
N-Nitrosodiphenylamine	mg/kg	ND	0.33	09/28/17 14:12	
Naphthalene	mg/kg	ND	0.33	09/28/17 14:12	
Nitrobenzene	mg/kg	ND	0.33	09/28/17 14:12	
Pentachlorophenol	mg/kg	ND	0.83	09/28/17 14:12	
Phenanthrene	mg/kg	ND	0.33	09/28/17 14:12	
Phenol	mg/kg	ND	0.33	09/28/17 14:12	
Pyrene	mg/kg	ND	0.33	09/28/17 14:12	
2,4,6-Tribromophenol (S)	%	51	10-144	09/28/17 14:12	
2-Fluorobiphenyl (S)	%	78	10-151	09/28/17 14:12	
2-Fluorophenol (S)	%	84	10-138	09/28/17 14:12	
Nitrobenzene-d5 (S)	%	77	10-175	09/28/17 14:12	
Phenol-d6 (S)	%	81	10-142	09/28/17 14:12	
Terphenyl-d14 (S)	%	80	10-172	09/28/17 14:12	

LABORATORY CONTROL SAMPLE: 1344568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	3.3	2.6	77	55-84	
1,2-Dichlorobenzene	mg/kg	3.3	2.9	86	64-102	
1,3-Dichlorobenzene	mg/kg	3.3	2.8	84	63-99	
1,4-Dichlorobenzene	mg/kg	3.3	2.8	84	64-100	
2,4,5-Trichlorophenol	mg/kg	3.3	2.5	74	54-119	
2,4,6-Trichlorophenol	mg/kg	3.3	2.7	80	53-128	
2,4-Dichlorophenol	mg/kg	3.3	2.7	81	49-92	
2,4-Dimethylphenol	mg/kg	3.3	2.1	62	46-88	
2,4-Dinitrophenol	mg/kg	3.3	1.8	55	10-121	
2,4-Dinitrotoluene	mg/kg	3.3	3.1	93	61-120	
2,6-Dinitrotoluene	mg/kg	3.3	3.2	95	60-118	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

LABORATORY CONTROL SAMPLE: 1344568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chloronaphthalene	mg/kg	3.3	2.9	87	55-110	
2-Chlorophenol	mg/kg	3.3	2.9	87	54-111	
2-Methylnaphthalene	mg/kg	3.3	2.6	79	47-84	
2-Methylphenol(o-Cresol)	mg/kg	3.3	3.6	107	49-121	
2-Nitroaniline	mg/kg	3.3	3.2	96	61-122	
2-Nitrophenol	mg/kg	3.3	2.6	78	52-88	
3&4-Methylphenol(m&p Cresol)	mg/kg	3.3	3.5	105	55-116	
3,3'-Dichlorobenzidine	mg/kg	3.3	2.8	85	42-122	
3-Nitroaniline	mg/kg	3.3	3.4	102	59-129	
4,6-Dinitro-2-methylphenol	mg/kg	3.3	2.6	77	42-132	
4-Bromophenylphenyl ether	mg/kg	3.3	2.9	87	65-112	
4-Chloro-3-methylphenol	mg/kg	3.3	2.8	83	57-91	
4-Chloroaniline	mg/kg	3.3	2.4	71	32-76	
4-Chlorophenylphenyl ether	mg/kg	3.3	2.9	88	65-113	
4-Nitroaniline	mg/kg	3.3	4.1	123	53-168	
4-Nitrophenol	mg/kg	3.3	2.8	85	55-132	
Acenaphthene	mg/kg	3.3	3.1	93	59-113	
Acenaphthylene	mg/kg	3.3	3.0	91	56-114	
Anthracene	mg/kg	3.3	2.6	77	60-104	
Benzo(a)anthracene	mg/kg	3.3	3.2	97	64-114	
Benzo(a)pyrene	mg/kg	3.3	2.8	85	62-111	
Benzo(b)fluoranthene	mg/kg	3.3	3.0	90	61-122	
Benzo(g,h,i)perylene	mg/kg	3.3	3.2	95	54-127	
Benzo(k)fluoranthene	mg/kg	3.3	2.9	88	63-117	
Benzyl alcohol	mg/kg	3.3	1.2	35	34-127	
bis(2-Chloroethoxy)methane	mg/kg	3.3	2.5	75	46-89	
bis(2-Chloroethyl) ether	mg/kg	3.3	3.0	91	45-108	
bis(2-Chloroisopropyl) ether	mg/kg	3.3	3.0	91	47-113	
bis(2-Ethylhexyl)phthalate	mg/kg	3.3	3.1	94	60-127	
Butylbenzylphthalate	mg/kg	3.3	3.1	93	65-124	
Chrysene	mg/kg	3.3	2.9	88	64-112	
Di-n-butylphthalate	mg/kg	3.3	3.1	92	66-118	
Di-n-octylphthalate	mg/kg	3.3	3.0	90	57-133	
Dibenz(a,h)anthracene	mg/kg	3.3	3.2	97	53-125	
Dibenzofuran	mg/kg	3.3	3.0	89	65-109	
Diethylphthalate	mg/kg	3.3	3.0	90	65-113	
Dimethylphthalate	mg/kg	3.3	3.0	90	64-115	
Fluoranthene	mg/kg	3.3	3.1	94	64-114	
Fluorene	mg/kg	3.3	3.1	94	62-113	
Hexachloro-1,3-butadiene	mg/kg	3.3	2.6	77	45-91	
Hexachlorobenzene	mg/kg	3.3	2.9	87	63-113	
Hexachlorocyclopentadiene	mg/kg	3.3	2.0	61	31-105	
Hexachloroethane	mg/kg	3.3	3.0	89	50-110	
Indeno(1,2,3-cd)pyrene	mg/kg	3.3	3.2	95	57-119	
Isophorone	mg/kg	3.3	2.6	79	46-87	
N-Nitroso-di-n-propylamine	mg/kg	3.3	3.1	94	54-116	
N-Nitrosodiphenylamine	mg/kg	3.3	2.2	67	46-90	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

LABORATORY CONTROL SAMPLE: 1344568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	mg/kg	3.3	2.7	81	47-85	
Nitrobenzene	mg/kg	3.3	2.7	81	43-93	
Pentachlorophenol	mg/kg	3.3	1.7	52	41-143	
Phenanthrene	mg/kg	3.3	3.5	106	63-114	
Phenol	mg/kg	3.3	3.0	91	56-114	
Pyrene	mg/kg	3.3	3.0	90	62-120	
2,4,6-Tribromophenol (S)	%			56	10-144	
2-Fluorobiphenyl (S)	%			81	10-151	
2-Fluorophenol (S)	%			88	10-138	
Nitrobenzene-d5 (S)	%			73	10-175	
Phenol-d6 (S)	%			86	10-142	
Terphenyl-d14 (S)	%			83	10-172	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1344569 1344570

Parameter	Units	30230849001		MS	MSD	MS		MSD		% Rec Limits	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,2,4-Trichlorobenzene	mg/kg	ND	3.9	4	2.4	2.8	62	70	51-82	14		
1,2-Dichlorobenzene	mg/kg	ND	3.9	4	3.0	3.0	76	74	58-98	0		
1,3-Dichlorobenzene	mg/kg	ND	3.9	4	2.9	2.8	74	71	56-94	2		
1,4-Dichlorobenzene	mg/kg	ND	3.9	4	2.9	2.9	75	72	56-97	1		
2,4,5-Trichlorophenol	mg/kg	ND	3.9	4	2.8	3.2	70	80	14-139	15		
2,4,6-Trichlorophenol	mg/kg	ND	3.9	4	2.3	1.6	59	41	10-152	33	R1	
2,4-Dichlorophenol	mg/kg	ND	3.9	4	2.4	2.4	60	59	46-87	1		
2,4-Dimethylphenol	mg/kg	ND	3.9	4	0.91	0.90	23	23	26-94	1	ML	
2,4-Dinitrophenol	mg/kg	ND	3.9	4	1.2	.92J	31	23	10-120			
2,4-Dinitrotoluene	mg/kg	ND	3.9	4	2.3	3.0	58	75	44-117	27	R1	
2,6-Dinitrotoluene	mg/kg	ND	3.9	4	3.2	2.7	81	67	48-112	17		
2-Chloronaphthalene	mg/kg	ND	3.9	4	3.0	2.9	77	72	52-104	5		
2-Chlorophenol	mg/kg	ND	3.9	4	2.7	2.3	70	58	48-105	16		
2-Methylnaphthalene	mg/kg	ND	3.9	4	2.6	2.9	66	72	41-84	11		
2-Methylphenol(o-Cresol)	mg/kg	ND	3.9	4	2.7	1.8	68	45	24-137	39	R1	
2-Nitroaniline	mg/kg	ND	3.9	4	3.3	3.1	85	77	52-117	7		
2-Nitrophenol	mg/kg	ND	3.9	4	2.4	2.7	62	68	18-103	11		
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	3.9	4	2.8	1.9	72	48	29-126	38	R1	
3,3'-Dichlorobenzidine	mg/kg	ND	3.9	4	2.0	1.6	50	41	10-137	19		
3-Nitroaniline	mg/kg	ND	3.9	4	3.3	3.2	84	81	30-131	2		
4,6-Dinitro-2-methylphenol	mg/kg	ND	3.9	4	1.7	1.4	43	36	10-139	16		
4-Bromophenylphenyl ether	mg/kg	ND	3.9	4	3.1	2.9	79	72	58-108	7		
4-Chloro-3-methylphenol	mg/kg	ND	3.9	4	2.4	2.2	61	56	48-90	8		
4-Chloroaniline	mg/kg	ND	3.9	4	2.0	2.3	52	56	10-82	11		
4-Chlorophenylphenyl ether	mg/kg	ND	3.9	4	3.1	2.9	78	72	57-107	6		
4-Nitroaniline	mg/kg	ND	3.9	4	3.9	3.7	100	93	32-143	6		
4-Nitrophenol	mg/kg	ND	3.9	4	2.7	2.0	68	49	15-136	30	R1	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230849

Parameter	30230849001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Acenaphthene	mg/kg	ND	3.9	4	3.3	3.0	84	76	57-104	7				
Acenaphthylene	mg/kg	ND	3.9	4	3.3	2.5	84	62	55-103	28	R1			
Anthracene	mg/kg	ND	3.9	4	6.5	2.2	162	52	51-100	98	MH,R1			
Benzo(a)anthracene	mg/kg	ND	3.9	4	5.5	3.0	136	70	35-124	59	MH,R1			
Benzo(a)pyrene	mg/kg	ND	3.9	4	4.3	2.5	107	58	45-112	54	R1			
Benzo(b)fluoranthene	mg/kg	0.44	3.9	4	8.2	3.2	198	69	17-160	87	E			
Benzo(g,h,i)perylene	mg/kg	ND	3.9	4	1.6	1.2	40	28	10-127	31	R1			
Benzo(k)fluoranthene	mg/kg	ND	3.9	4	5.1	3.2	126	75	27-150	47	R1			
Benzyl alcohol	mg/kg	ND	3.9	4	.27J	1.4	7	34	10-125		ML			
bis(2-Chloroethoxy)methane	mg/kg	ND	3.9	4	2.4	2.7	61	66	40-84	11				
bis(2-Chloroethyl) ether	mg/kg	ND	3.9	4	3.0	2.9	77	72	41-95	4				
bis(2-Chloroisopropyl) ether	mg/kg	ND	3.9	4	3.1	3.0	79	75	30-106	4				
bis(2-Ethylhexyl)phthalate	mg/kg	ND	3.9	4	3.4	3.1	86	76	32-144	10				
Butylbenzylphthalate	mg/kg	ND	3.9	4	3.3	3.2	85	81	33-144	3				
Chrysene	mg/kg	ND	3.9	4	6.2	3.0	151	70	48-111	68	MH,R1			
Di-n-butylphthalate	mg/kg	ND	3.9	4	3.3	3.0	83	75	58-108	9				
Di-n-octylphthalate	mg/kg	ND	3.9	4	4.9	3.5	124	88	11-175	32	R1			
Dibenz(a,h)anthracene	mg/kg	ND	3.9	4	2.0	1.7	50	42	10-125	17				
Dibenzofuran	mg/kg	ND	3.9	4	3.1	2.9	79	72	56-105	7				
Diethylphthalate	mg/kg	ND	3.9	4	3.1	2.9	80	73	56-104	6				
Dimethylphthalate	mg/kg	ND	3.9	4	3.1	2.9	80	73	53-108	6				
Fluoranthene	mg/kg	ND	3.9	4	7.6	3.1	190	72	24-131	85	MH,R1			
Fluorene	mg/kg	ND	3.9	4	3.3	3.0	84	76	60-106	8				
Hexachloro-1,3-butadiene	mg/kg	ND	3.9	4	2.5	2.9	64	73	44-86	16				
Hexachlorobenzene	mg/kg	ND	3.9	4	3.1	2.9	79	72	61-105	7				
Hexachlorocyclopentadiene	mg/kg	ND	3.9	4	1.5	1.6	39	40	10-99	6				
Hexachloroethane	mg/kg	ND	3.9	4	3.0	3.0	77	75	41-104	0				
Indeno(1,2,3-cd)pyrene	mg/kg	ND	3.9	4	2.2	1.6	53	37	10-122	32	R1			
Isophorone	mg/kg	ND	3.9	4	2.5	2.7	63	68	42-82	10				
N-Nitroso-di-n-propylamine	mg/kg	ND	3.9	4	3.2	3.1	82	77	44-110	5				
N-Nitrosodiphenylamine	mg/kg	ND	3.9	4	2.2	1.6	55	39	40-84	32	ML,R1			
Naphthalene	mg/kg	ND	3.9	4	2.6	2.9	66	72	40-86	12				
Nitrobenzene	mg/kg	ND	3.9	4	2.6	2.9	66	72	39-85	12				
Pentachlorophenol	mg/kg	ND	3.9	4	2.8	2.2	72	56	10-162	23				
Phenanthrene	mg/kg	ND	3.9	4	4.7	3.3	118	81	51-117	35	MH,R1			
Phenol	mg/kg	ND	3.9	4	2.7	2.2	68	55	36-113	20				
Pyrene	mg/kg	ND	3.9	4	6.7	3.1	165	73	15-154	72	MH,R1			
2,4,6-Tribromophenol (S)	%						57	38	10-144					
2-Fluorobiphenyl (S)	%						71	64	10-151					
2-Fluorophenol (S)	%						62	46	10-138					
Nitrobenzene-d5 (S)	%						58	64	10-175					
Phenol-d6 (S)	%						66	50	10-142					
Terphenyl-d14 (S)	%						77	66	10-172					

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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## QUALIFIERS

Project: Springfield Twp

Pace Project No.: 30230849

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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: 274169

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

### ANALYTE QUALIFIERS

1c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased high and should be considered estimated.

2c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased low and should be considered estimated.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp  
Pace Project No.: 30230849

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30230849001	IB7@2'	EPA 3050B	272917	EPA 6010B	273046
30230849002	IB7@8'	EPA 3050B	274621	EPA 6010B	274739
30230849003	IB8@2'	EPA 3050B	272917	EPA 6010B	273046
30230849004	IB8@8'	EPA 3050B	274621	EPA 6010B	274739
30230849005	IB9@2'	EPA 3050B	272917	EPA 6010B	273046
30230849006	IB9@8'	EPA 3050B	274621	EPA 6010B	274739
30230849007	IB12@2'	EPA 3050B	272917	EPA 6010B	273046
30230849008	IB11@2'	EPA 3050B	272917	EPA 6010B	273046
30230849009	IB11@8'	EPA 3050B	274621	EPA 6010B	274739
30230849010	IB10@2'	EPA 3050B	272917	EPA 6010B	273046
30230849011	IB11@8'	EPA 3050B	274621	EPA 6010B	274739
30230849001	IB7@2'	EPA 7471A	272962	EPA 7471A	273054
30230849002	IB7@8'	EPA 7471A	274637	EPA 7471A	274688
30230849003	IB8@2'	EPA 7471A	272962	EPA 7471A	273054
30230849004	IB8@8'	EPA 7471A	274637	EPA 7471A	274688
30230849005	IB9@2'	EPA 7471A	272962	EPA 7471A	273054
30230849006	IB9@8'	EPA 7471A	274637	EPA 7471A	274688
30230849007	IB12@2'	EPA 7471A	272962	EPA 7471A	273054
30230849008	IB11@2'	EPA 7471A	272962	EPA 7471A	273054
30230849009	IB11@8'	EPA 7471A	274637	EPA 7471A	274688
30230849010	IB10@2'	EPA 7471A	272962	EPA 7471A	273054
30230849011	IB11@8'	EPA 7471A	274637	EPA 7471A	274688
30230849001	IB7@2'	EPA 3546	273360	EPA 8270C	273475
30230849003	IB8@2'	EPA 3546	273360	EPA 8270C	273475
30230849005	IB9@2'	EPA 3546	273360	EPA 8270C	273475
30230849007	IB12@2'	EPA 3546	273360	EPA 8270C	273475
30230849008	IB11@2'	EPA 3546	273360	EPA 8270C	273475
30230849010	IB10@2'	EPA 3546	273360	EPA 8270C	273475
30230849001	IB7@2'	EPA 5035A	273625	EPA 8260B	273642
30230849003	IB8@2'	EPA 5035A	273625	EPA 8260B	273642
30230849005	IB9@2'	EPA 5035A	273625	EPA 8260B	273642
30230849007	IB12@2'	EPA 5035A	273625	EPA 8260B	273642
30230849008	IB11@2'	EPA 5035A	273625	EPA 8260B	273642
30230849010	IB10@2'	EPA 5035A	273625	EPA 8260B	273642
30230849001	IB7@2'	ASTM D2974-87	273488		
30230849002	IB7@8'	ASTM D2974-87	274050		
30230849003	IB8@2'	ASTM D2974-87	273488		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp

Pace Project No.: 30230849

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30230849004	IB8@8'	ASTM D2974-87	274050		
30230849005	IB9@2'	ASTM D2974-87	273488		
30230849006	IB9@8'	ASTM D2974-87	274050		
30230849007	IB12@2'	ASTM D2974-87	273488		
30230849008	IB11@2'	ASTM D2974-87	273488		
30230849009	IB11@8'	ASTM D2974-87	274050		
30230849010	IB10@2'	ASTM D2974-87	273488		
30230849011	IB11@8'	ASTM D2974-87	274050		

### REPORT OF LABORATORY ANALYSIS

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Pittsburgh Lab Sample Condition Upon Receipt



Client Name: BL Compliance

Project # 30230849

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7702 5892

Label Z11  
LIMS Login JSA

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

Thermometer Used 6 Type of Ice Wet Blue None

Cooler Temperature Observed Temp 3.8 °C Correction Factor 0.0 °C Final Temp: 3.8 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/22/17 CC

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>3</u>	/			
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered	/			12.
Hex Cr Aqueous Compliance/NPDES sample field filtered	/			13.
Organic Samples checked for dechlorination:	/			14.
Filtered volume received for Dissolved tests	/			15.
All containers have been checked for preservation.	/			16.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed <u>CC</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	/			17.
Trip Blank Present:	/			18. <u>APM 9/22/17</u>
Trip Blank Custody Seals Present	/			
Rad Aqueous Samples Screened > 0.5 mrem/hr	/			Initial when completed: Date:

Client Notification/ Resolution:  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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)  
 \*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

## **APPENDIX F**

### Laboratory Reports – 2020 Delineation Soil Samples

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*  
*Automated Report*

**Technical Report for**

**BL Companies**

Former TCCA, Oreland, PA

17L5438

SGS Job Number: JD13820

Sampling Date: 09/28/20

**Report to:**

BL Companies  
535 Route 38, Suite 250  
Cherry Hill, NJ 08002  
mmcgowan@blcompanies.com

ATTN: Mike McGowan

Total number of pages in report: 149



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.



Caitlin Brice, M.S.  
General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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Test results relate only to samples analyzed.

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## Sample Summary

**BL Companies**

**Job No: JD13820**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
---------------	----------------	---------	----------	-------------	------	------------------

**This report contains results reported as ND = Not detected. The following applies:  
Organics ND = Not detected above the MDL**

JD13820-1	09/28/20	09:30	SCS	09/29/20	SO	Soil	B-1A
JD13820-2	09/28/20	09:45	SCS	09/29/20	SO	Soil	B-1B
JD13820-3	09/28/20	10:05	SCS	09/29/20	SO	Soil	B-2A
JD13820-4	09/28/20	10:20	SCS	09/29/20	SO	Soil	B-2B
JD13820-5	09/28/20	10:50	SCS	09/29/20	SO	Soil	B-3A
JD13820-6	09/28/20	11:05	SCS	09/29/20	SO	Soil	B-3B
JD13820-7	09/28/20	11:30	SCS	09/29/20	SO	Soil	B-4A
JD13820-8	09/28/20	11:40	SCS	09/29/20	SO	Soil	B-4B
JD13820-9	09/28/20	12:10	SCS	09/29/20	SO	Soil	B-5A
JD13820-10	09/28/20	12:20	SCS	09/29/20	SO	Soil	B-5B
JD13820-11	09/28/20	13:35	SCS	09/29/20	SO	Soil	B-6A
JD13820-12	09/28/20	13:45	SCS	09/29/20	SO	Soil	B-6B

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



### Sample Summary (continued)

**BL Companies**

**Job No: JD13820**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JD13820-13	09/28/20	14:10	SCS	09/29/20	SO Soil	B-7A
JD13820-14	09/28/20	14:10	SCS	09/29/20	SO Soil	B-7B
JD13820-15	09/28/20	14:50	SCS	09/29/20	SO Soil	B-8A
JD13820-16	09/28/20	15:00	SCS	09/29/20	SO Soil	B-8B

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** BL Companies

**Job No** JD13820

**Site:** Former TCCA, Oreland, PA

**Report Date** 10/6/2020 10:41:44 A

On 09/29/2020, 16 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 0.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD13820 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

### MS Volatiles By Method SW846 8260C

**Matrix:** SO

**Batch ID:** VY8312

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD13860-1MS, JD13860-2DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

## MS Volatiles By Method SW846 8260D

**Matrix:** SO

**Batch ID:** VIC7606

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD13820-5MS, JD13820-6DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Bromomethane are outside control limits. High percent recovery and no associated positive reported in the QC batch.
- Matrix Spike Recovery(s) for Bromomethane are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for Duplicate for Acetone are outside control limits for sample JD13820-6DUP. RPD acceptable due to low DUP and sample concentrations.
- JD13820-13 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- VIC7606-BSD for Bromomethane: High percent recovery and no associated positive reported in the QC batch.
- JD13820-5 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-6 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-7 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-11 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-12 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-9 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-8 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD13820-10 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

**Matrix:** SO

**Batch ID:** VI9484

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD13820-1MS, JD13820-2DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Acetone are outside control limits for sample JD13820-2DUP. RPD acceptable due to low DUP and sample concentrations.
- JD13820-2 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND.
- JD13820-4 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND.
- JD13820-3 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND.
- JD13820-1 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND.

## MS Semi-volatiles By Method SW846 8270E

**Matrix:** SO

**Batch ID:** OP29781

- All samples were extracted within the recommended method holding time.
- Sample(s) JD13820-1MS, JD13820-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD13820-7: Dilution required due to viscosity of the extract matrix.
- JD13820-10: Dilution required due to viscosity of the extract matrix.

## Metals Analysis By Method SW846 6010D

**Matrix:** SO

**Batch ID:** MP23013

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13820-1MS, JD13820-1MSD, JD13820-1PS, JD13820-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- RPD(s) for Serial Dilution for Arsenic, Cadmium, Silver, Thallium are outside control limits for sample MP23013-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD13820-6 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-5 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-14 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-11 for Selenium: Elevated detection limit due to dilution required for high interfering element.

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## Metals Analysis By Method SW846 6010D

**Matrix:** SO

**Batch ID:** MP23013

- JD13820-3 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-6 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-14 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-9 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-15 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-15 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-14 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-15 for Zinc: Elevated detection limit due to dilution required for high interfering element.
- JD13820-15 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- MP23013-SD1 for Copper: Serial dilution indicates possible matrix interference.
- JD13820-2 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-13 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13820-16 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13820-2 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Cadmium: Elevated detection limit due to dilution required for high interfering element.

Tuesday, October 06, 2020

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## Metals Analysis By Method SW846 6010D

**Matrix:** SO                      **Batch ID:** MP23013

- JD13820-3 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13820-4 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-7 for Zinc: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-1 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13820-3 for Lead: Elevated detection limit due to dilution required for high interfering element.

## Metals Analysis By Method SW846 7471B

**Matrix:** SO                      **Batch ID:** MP23063

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13820-1MS, JD13820-1MSD were used as the QC samples for metals.

## General Chemistry By Method SM2540 G 18TH ED MOD

**Matrix:** SO                      **Batch ID:** GN11893

- Sample(s) JD13764-54DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover



# Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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**JD13820-1 B-1A**

Benzo(a)anthracene	96.6	36	10	ug/kg	SW846 8270E
Benzo(a)pyrene	100	36	17	ug/kg	SW846 8270E
Benzo(b)fluoranthene	140	36	16	ug/kg	SW846 8270E
Benzo(g,h,i)perylene	59.5	36	18	ug/kg	SW846 8270E
Benzo(k)fluoranthene	52.1	36	17	ug/kg	SW846 8270E
Chrysene	112	36	11	ug/kg	SW846 8270E
Fluoranthene	216	36	16	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	61.7	36	17	ug/kg	SW846 8270E
Phenanthrene	92.6	36	12	ug/kg	SW846 8270E
Pyrene	195	36	12	ug/kg	SW846 8270E
Arsenic <sup>a</sup>	7.1	4.4		mg/kg	SW846 6010D
Beryllium <sup>a</sup>	0.91	0.44		mg/kg	SW846 6010D
Chromium	28.8	1.1		mg/kg	SW846 6010D
Copper <sup>a</sup>	12.5	5.5		mg/kg	SW846 6010D
Lead <sup>a</sup>	13.2	4.4		mg/kg	SW846 6010D
Nickel	17.0	4.4		mg/kg	SW846 6010D
Zinc	41.8	5.5		mg/kg	SW846 6010D

**JD13820-2 B-1B**

Acetone	10 J	11	4.6	ug/kg	SW846 8260D
Beryllium <sup>a</sup>	8.2	1.2		mg/kg	SW846 6010D
Chromium	23.4	1.2		mg/kg	SW846 6010D
Copper <sup>a</sup>	41.9	15		mg/kg	SW846 6010D
Lead <sup>a</sup>	105	12		mg/kg	SW846 6010D
Nickel	32.7	4.7		mg/kg	SW846 6010D
Zinc	256	5.8		mg/kg	SW846 6010D

**JD13820-3 B-2A**

Arsenic <sup>a</sup>	7.9	4.6		mg/kg	SW846 6010D
Beryllium <sup>a</sup>	1.1	0.46		mg/kg	SW846 6010D
Chromium	32.7	1.1		mg/kg	SW846 6010D
Copper <sup>a</sup>	18.8	5.7		mg/kg	SW846 6010D
Lead <sup>a</sup>	13.3	4.6		mg/kg	SW846 6010D
Mercury	0.052	0.037		mg/kg	SW846 7471B
Nickel	20.2	4.6		mg/kg	SW846 6010D
Zinc	50.0	5.7		mg/kg	SW846 6010D

**JD13820-4 B-2B**

Beryllium <sup>a</sup>	2.0	0.46		mg/kg	SW846 6010D
Chromium	20.7	1.2		mg/kg	SW846 6010D

## Summary of Hits

**Job Number:** JD13820  
**Account:** BL Companies  
**Project:** Former TCCA, Oreland, PA  
**Collected:** 09/28/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Copper <sup>a</sup>		9.7	5.8		mg/kg	SW846 6010D
Lead <sup>a</sup>		8.9	4.6		mg/kg	SW846 6010D
Mercury		0.049	0.035		mg/kg	SW846 7471B
Nickel		27.1	4.6		mg/kg	SW846 6010D
Silver <sup>a</sup>		1.6	1.2		mg/kg	SW846 6010D
Zinc		68.2	5.8		mg/kg	SW846 6010D

JD13820-5      B-3A

Total TIC, Volatile		6.5 J			ug/kg	
Acenaphthylene		39.9	38	19	ug/kg	SW846 8270E
Anthracene		41.6	38	23	ug/kg	SW846 8270E
Benzo(a)anthracene		127	38	11	ug/kg	SW846 8270E
Benzo(a)pyrene		117	38	17	ug/kg	SW846 8270E
Benzo(b)fluoranthene		107	38	17	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		60.2	38	19	ug/kg	SW846 8270E
Benzo(k)fluoranthene		31.9 J	38	18	ug/kg	SW846 8270E
Chrysene		149	38	12	ug/kg	SW846 8270E
Fluoranthene		170	38	17	ug/kg	SW846 8270E
Fluorene		26.4 J	38	18	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		53.8	38	18	ug/kg	SW846 8270E
Naphthalene		15.2 J	38	11	ug/kg	SW846 8270E
Phenanthrene		165	38	13	ug/kg	SW846 8270E
Pyrene		314	38	12	ug/kg	SW846 8270E
Arsenic <sup>a</sup>		8.3	4.7		mg/kg	SW846 6010D
Beryllium <sup>a</sup>		1.6	0.47		mg/kg	SW846 6010D
Chromium		30.1	1.2		mg/kg	SW846 6010D
Copper <sup>a</sup>		30.7	5.9		mg/kg	SW846 6010D
Lead <sup>a</sup>		19.1	4.7		mg/kg	SW846 6010D
Mercury		0.053	0.036		mg/kg	SW846 7471B
Nickel		21.6	4.7		mg/kg	SW846 6010D
Zinc		122	5.9		mg/kg	SW846 6010D

JD13820-6      B-3B

Acetone		5.8 J	9.7	4.0	ug/kg	SW846 8260D
Acenaphthene		16.6 J	36	13	ug/kg	SW846 8270E
Acenaphthylene		138	36	18	ug/kg	SW846 8270E
Anthracene		118	36	22	ug/kg	SW846 8270E
Benzo(a)anthracene		421	36	10	ug/kg	SW846 8270E
Benzo(a)pyrene		369	36	16	ug/kg	SW846 8270E
Benzo(b)fluoranthene		376	36	16	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		242	36	18	ug/kg	SW846 8270E
Benzo(k)fluoranthene		109	36	17	ug/kg	SW846 8270E
Chrysene		476	36	11	ug/kg	SW846 8270E

## Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Dibenzo(a,h)anthracene		51.6	36	16	ug/kg	SW846 8270E
Fluoranthene		494	36	16	ug/kg	SW846 8270E
Fluorene		52.4	36	17	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		208	36	17	ug/kg	SW846 8270E
Naphthalene		35.1 J	36	10	ug/kg	SW846 8270E
Phenanthrene		293	36	12	ug/kg	SW846 8270E
Pyrene		1010	36	12	ug/kg	SW846 8270E
Beryllium <sup>a</sup>		4.0	1.1		mg/kg	SW846 6010D
Chromium		16.0	1.1		mg/kg	SW846 6010D
Copper <sup>a</sup>		14.1	14		mg/kg	SW846 6010D
Nickel		41.8	4.6		mg/kg	SW846 6010D
Zinc		185	5.7		mg/kg	SW846 6010D

JD13820-7      B-4A

Acenaphthene <sup>b</sup>		657	180	64	ug/kg	SW846 8270E
Acenaphthylene <sup>b</sup>		698	180	94	ug/kg	SW846 8270E
Anthracene <sup>b</sup>		2740	180	110	ug/kg	SW846 8270E
Benzo(a)anthracene <sup>b</sup>		10300	180	52	ug/kg	SW846 8270E
Benzo(a)pyrene <sup>b</sup>		11400	180	84	ug/kg	SW846 8270E
Benzo(b)fluoranthene <sup>b</sup>		13100	180	82	ug/kg	SW846 8270E
Benzo(g,h,i)perylene <sup>b</sup>		7550	180	92	ug/kg	SW846 8270E
Benzo(k)fluoranthene <sup>b</sup>		4960	180	86	ug/kg	SW846 8270E
Chrysene <sup>b</sup>		10300	180	58	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene <sup>b</sup>		1760	180	82	ug/kg	SW846 8270E
Fluoranthene <sup>b</sup>		18100	180	82	ug/kg	SW846 8270E
Fluorene <sup>b</sup>		799	180	85	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene <sup>b</sup>		8110	180	87	ug/kg	SW846 8270E
Naphthalene <sup>b</sup>		220	180	52	ug/kg	SW846 8270E
Phenanthrene <sup>b</sup>		9770	180	62	ug/kg	SW846 8270E
Pyrene		21500	920	300	ug/kg	SW846 8270E
Antimony		4.5	2.3		mg/kg	SW846 6010D
Beryllium <sup>a</sup>		14.2	1.1		mg/kg	SW846 6010D
Chromium		57.2	1.1		mg/kg	SW846 6010D
Copper <sup>a</sup>		574	14		mg/kg	SW846 6010D
Lead <sup>a</sup>		440	11		mg/kg	SW846 6010D
Mercury		0.11	0.036		mg/kg	SW846 7471B
Nickel		70.2	4.6		mg/kg	SW846 6010D
Zinc <sup>a</sup>		3640	29		mg/kg	SW846 6010D

JD13820-8      B-4B

Acenaphthene		19.4 J	38	13	ug/kg	SW846 8270E
Anthracene		44.6	38	23	ug/kg	SW846 8270E
Benzo(a)anthracene		114	38	11	ug/kg	SW846 8270E

## Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
		118	38	17	ug/kg	SW846 8270E
		148	38	17	ug/kg	SW846 8270E
		68.6	38	19	ug/kg	SW846 8270E
		52.8	38	18	ug/kg	SW846 8270E
		113	38	12	ug/kg	SW846 8270E
		255	38	17	ug/kg	SW846 8270E
		19.5 J	38	17	ug/kg	SW846 8270E
		79.7	38	18	ug/kg	SW846 8270E
		13.4 J	38	11	ug/kg	SW846 8270E
		183	38	13	ug/kg	SW846 8270E
		225	38	12	ug/kg	SW846 8270E
		2.2	1.1		mg/kg	SW846 6010D
		25.2	1.1		mg/kg	SW846 6010D
		35.5	14		mg/kg	SW846 6010D
		17.9	11		mg/kg	SW846 6010D
		25.1	4.5		mg/kg	SW846 6010D
		111	5.6		mg/kg	SW846 6010D
<b>JD13820-9 B-5A</b>						
		12.6 J	39	11	ug/kg	SW846 8270E
		13.8 J	39	13	ug/kg	SW846 8270E
		1.6	0.25		mg/kg	SW846 6010D
		4.2	1.2		mg/kg	SW846 6010D
		13.1	3.1		mg/kg	SW846 6010D
		0.14	0.040		mg/kg	SW846 7471B
		8.6	5.0		mg/kg	SW846 6010D
		56.3	6.2		mg/kg	SW846 6010D
<b>JD13820-10 B-5B</b>						
		184	10	4.3	ug/kg	SW846 8260D
		27.7	10	8.8	ug/kg	SW846 8260D
		3.0	2.1	0.56	ug/kg	SW846 8260D
		57 J			ug/kg	
		773	70	24	ug/kg	SW846 8270E
		958	70	35	ug/kg	SW846 8270E
		21800	350	210	ug/kg	SW846 8270E
		3080	350	99	ug/kg	SW846 8270E
		3340	350	160	ug/kg	SW846 8270E
		3940	350	150	ug/kg	SW846 8270E
		1940	350	170	ug/kg	SW846 8270E
		1550	350	160	ug/kg	SW846 8270E
		3340	350	110	ug/kg	SW846 8270E
		464	350	150	ug/kg	SW846 8270E

## Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method	
		Fluoranthene <sup>b</sup>	5930	70	31	ug/kg	SW846 8270E
		Fluorene <sup>b</sup>	2580	70	32	ug/kg	SW846 8270E
		Indeno(1,2,3-cd)pyrene	2160	350	160	ug/kg	SW846 8270E
		Naphthalene <sup>b</sup>	1570	70	20	ug/kg	SW846 8270E
		Phenanthrene	8360	350	120	ug/kg	SW846 8270E
		Pyrene	6280	350	110	ug/kg	SW846 8270E
		Arsenic <sup>a</sup>	12.9	11		mg/kg	SW846 6010D
		Beryllium <sup>a</sup>	43.1	1.1		mg/kg	SW846 6010D
		Chromium	73.9	1.1		mg/kg	SW846 6010D
		Copper <sup>a</sup>	1570	14		mg/kg	SW846 6010D
		Lead <sup>a</sup>	793	11		mg/kg	SW846 6010D
		Mercury	0.24	0.035		mg/kg	SW846 7471B
		Nickel	127	4.4		mg/kg	SW846 6010D
		Silver <sup>a</sup>	2.9	2.7		mg/kg	SW846 6010D
		Zinc	11800	110		mg/kg	SW846 6010D
<b>JD13820-11 B-6A</b>							
		Beryllium <sup>a</sup>	4.3	1.3		mg/kg	SW846 6010D
		Chromium	15.6	1.3		mg/kg	SW846 6010D
		Copper <sup>a</sup>	198	16		mg/kg	SW846 6010D
		Lead <sup>a</sup>	75.7	13		mg/kg	SW846 6010D
		Mercury	0.11	0.038		mg/kg	SW846 7471B
		Nickel	44.6	5.0		mg/kg	SW846 6010D
		Zinc	250	6.3		mg/kg	SW846 6010D
<b>JD13820-12 B-6B</b>							
		Anthracene	30.2 J	39	24	ug/kg	SW846 8270E
		Benzo(a)anthracene	61.3	39	11	ug/kg	SW846 8270E
		Benzo(a)pyrene	71.4	39	18	ug/kg	SW846 8270E
		Benzo(b)fluoranthene	80.8	39	17	ug/kg	SW846 8270E
		Benzo(g,h,i)perylene	40.8	39	19	ug/kg	SW846 8270E
		Benzo(k)fluoranthene	34.2 J	39	18	ug/kg	SW846 8270E
		Chrysene	69.4	39	12	ug/kg	SW846 8270E
		Fluoranthene	111	39	17	ug/kg	SW846 8270E
		Indeno(1,2,3-cd)pyrene	43.7	39	18	ug/kg	SW846 8270E
		Naphthalene	16.8 J	39	11	ug/kg	SW846 8270E
		Phenanthrene	67.9	39	13	ug/kg	SW846 8270E
		Pyrene	111	39	12	ug/kg	SW846 8270E
		Beryllium <sup>a</sup>	7.5	1.2		mg/kg	SW846 6010D
		Chromium	41.9	1.2		mg/kg	SW846 6010D
		Copper <sup>a</sup>	159	15		mg/kg	SW846 6010D
		Lead <sup>a</sup>	66.0	12		mg/kg	SW846 6010D
		Nickel	52.9	4.7		mg/kg	SW846 6010D

## Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Zinc		753	5.8		mg/kg	SW846 6010D
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**JD13820-13 B-7A**

Benzo(a)anthracene	15.3 J	38	11	ug/kg	SW846 8270E
Benzo(b)fluoranthene	17.3 J	38	17	ug/kg	SW846 8270E
Chrysene	12.4 J	38	12	ug/kg	SW846 8270E
Fluoranthene	20.5 J	38	17	ug/kg	SW846 8270E
Pyrene	18.9 J	38	12	ug/kg	SW846 8270E
Beryllium <sup>a</sup>	2.4	1.2		mg/kg	SW846 6010D
Chromium	15.1	1.2		mg/kg	SW846 6010D
Copper <sup>a</sup>	62.9	15		mg/kg	SW846 6010D
Lead <sup>a</sup>	23.5	12		mg/kg	SW846 6010D
Nickel	28.9	4.7		mg/kg	SW846 6010D
Zinc	117	5.9		mg/kg	SW846 6010D

**JD13820-14 B-7B**

Acetone	17.3	11	4.7	ug/kg	SW846 8260C
Benzo(a)anthracene	20.0 J	40	11	ug/kg	SW846 8270E
Benzo(a)pyrene	22.4 J	40	18	ug/kg	SW846 8270E
Benzo(b)fluoranthene	30.1 J	40	18	ug/kg	SW846 8270E
Benzo(g,h,i)perylene	22.2 J	40	20	ug/kg	SW846 8270E
Chrysene	21.5 J	40	13	ug/kg	SW846 8270E
Fluoranthene	33.5 J	40	18	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	22.3 J	40	19	ug/kg	SW846 8270E
Pyrene	30.0 J	40	13	ug/kg	SW846 8270E
Beryllium <sup>a</sup>	13.3	1.2		mg/kg	SW846 6010D
Chromium <sup>a</sup>	30.4	6.0		mg/kg	SW846 6010D
Copper <sup>a</sup>	487	15		mg/kg	SW846 6010D
Lead <sup>a</sup>	153	12		mg/kg	SW846 6010D
Nickel	74.8	4.8		mg/kg	SW846 6010D
Silver <sup>a</sup>	3.4	3.0		mg/kg	SW846 6010D
Zinc <sup>a</sup>	2260	30		mg/kg	SW846 6010D

**JD13820-15 B-8A**

Benzo(a)anthracene	92.4	33	9.3	ug/kg	SW846 8270E
Benzo(a)pyrene	135	33	15	ug/kg	SW846 8270E
Benzo(b)fluoranthene	173	33	15	ug/kg	SW846 8270E
Benzo(g,h,i)perylene	117	33	16	ug/kg	SW846 8270E
Benzo(k)fluoranthene	65.9	33	15	ug/kg	SW846 8270E
Chrysene	120	33	10	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene	18.0 J	33	15	ug/kg	SW846 8270E
Fluoranthene	170	33	15	ug/kg	SW846 8270E

## Summary of Hits

Job Number: JD13820  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/28/20



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
		Indeno(1,2,3-cd)pyrene	107	33	15	ug/kg SW846 8270E
		Phenanthrene	70.3	33	11	ug/kg SW846 8270E
		Pyrene	190	33	11	ug/kg SW846 8270E
		Arsenic <sup>a</sup>	6.6	6.3		mg/kg SW846 6010D
		Beryllium <sup>a</sup>	8.3	0.63		mg/kg SW846 6010D
		Chromium	22.2	1.0		mg/kg SW846 6010D
		Copper <sup>a</sup>	449	7.9		mg/kg SW846 6010D
		Lead <sup>a</sup>	223	6.3		mg/kg SW846 6010D
		Nickel	81.5	4.2		mg/kg SW846 6010D
		Silver <sup>a</sup>	1.8	1.6		mg/kg SW846 6010D
		Zinc <sup>a</sup>	2100	16		mg/kg SW846 6010D
<b>JD13820-16 B-8B</b>						
		Acetone	21.3	20	8.4	ug/kg SW846 8260C
		Benzo(a)anthracene	20.0 J	40	11	ug/kg SW846 8270E
		Benzo(b)fluoranthene	19.1 J	40	18	ug/kg SW846 8270E
		Chrysene	20.3 J	40	13	ug/kg SW846 8270E
		Fluoranthene	34.3 J	40	18	ug/kg SW846 8270E
		Phenanthrene	30.7 J	40	13	ug/kg SW846 8270E
		Pyrene	36.9 J	40	13	ug/kg SW846 8270E
		Arsenic <sup>a</sup>	8.8	5.0		mg/kg SW846 6010D
		Beryllium <sup>a</sup>	1.5	0.50		mg/kg SW846 6010D
		Chromium	38.2	1.2		mg/kg SW846 6010D
		Copper <sup>a</sup>	22.5	6.2		mg/kg SW846 6010D
		Lead <sup>a</sup>	14.0	5.0		mg/kg SW846 6010D
		Nickel	23.3	5.0		mg/kg SW846 6010D
		Silver <sup>a</sup>	1.2	1.2		mg/kg SW846 6010D
		Zinc	73.5	6.2		mg/kg SW846 6010D

(a) Elevated detection limit due to dilution required for high interfering element.

(b) Dilution required due to viscosity of the extract matrix.

**Sample Results**

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**Report of Analysis**

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# Report of Analysis

<b>Client Sample ID:</b> B-1A		
<b>Lab Sample ID:</b> JD13820-1		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8260D SW846 5035		<b>Percent Solids:</b> 88.4
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I234265.D	1	10/01/20 12:49	TDN	09/29/20 23:08	n/a	VI9484
Run #2							

Run #	Initial Weight
Run #1	3.6 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	16	6.5	ug/kg	
71-43-2	Benzene	ND	0.79	0.71	ug/kg	
74-97-5	Bromochloromethane	ND	7.9	0.88	ug/kg	
75-27-4	Bromodichloromethane	ND	3.1	0.67	ug/kg	
75-25-2	Bromoform	ND	7.9	2.1	ug/kg	
74-83-9	Bromomethane	ND	7.9	1.2	ug/kg	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	16	13	ug/kg	
75-15-0	Carbon disulfide	ND	3.1	0.84	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.1	0.97	ug/kg	
108-90-7	Chlorobenzene	ND	3.1	0.72	ug/kg	
75-00-3	Chloroethane	ND	7.9	0.93	ug/kg	
67-66-3	Chloroform	ND	3.1	0.82	ug/kg	
74-87-3	Chloromethane	ND	7.9	3.1	ug/kg	
110-82-7	Cyclohexane	ND	3.1	1.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.1	1.1	ug/kg	
124-48-1	Dibromochloromethane	ND	3.1	0.88	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.6	0.66	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.6	0.86	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.6	0.78	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.6	0.78	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.9	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.6	0.78	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.6	0.74	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.6	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.6	1.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.96	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.1	0.74	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.1	0.75	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.1	0.72	ug/kg	
100-41-4	Ethylbenzene	ND	1.6	0.71	ug/kg	
76-13-1	Freon 113	ND	7.9	4.2	ug/kg	
591-78-6	2-Hexanone	ND	7.9	3.3	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> B-1A <b>Lab Sample ID:</b> JD13820-1 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 88.4
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.1	2.2	ug/kg	
79-20-9	Methyl Acetate	ND	7.9	2.2	ug/kg	
108-87-2	Methylcyclohexane	ND	3.1	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.6	0.74	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.9	3.6	ug/kg	
75-09-2	Methylene chloride	ND	7.9	4.1	ug/kg	
100-42-5	Styrene	ND	3.1	2.1	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.1	0.94	ug/kg	
127-18-4	Tetrachloroethene	ND	3.1	0.91	ug/kg	
108-88-3	Toluene	ND	1.6	0.82	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.9	3.9	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.9	3.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.1	0.76	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.1	0.87	ug/kg	
79-01-6	Trichloroethene	ND	1.6	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.9	1.1	ug/kg	
75-01-4	Vinyl chloride	ND	3.1	0.76	ug/kg	
	m,p-Xylene	ND	1.6	1.4	ug/kg	
95-47-6	o-Xylene	ND	1.6	0.72	ug/kg	
1330-20-7	Xylene (total)	ND	1.6	0.92	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		75-127%
17060-07-0	1,2-Dichloroethane-D4	102%		75-130%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-1A <b>Lab Sample ID:</b> JD13820-1 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 88.4
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139544.D	1	10/02/20 05:16	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	36	13	ug/kg	
208-96-8	Acenaphthylene	ND	36	19	ug/kg	
120-12-7	Anthracene	ND	36	22	ug/kg	
56-55-3	Benzo(a)anthracene	96.6	36	10	ug/kg	
50-32-8	Benzo(a)pyrene	100	36	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	140	36	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	59.5	36	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	52.1	36	17	ug/kg	
218-01-9	Chrysene	112	36	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	36	16	ug/kg	
206-44-0	Fluoranthene	216	36	16	ug/kg	
86-73-7	Fluorene	ND	36	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	61.7	36	17	ug/kg	
91-20-3	Naphthalene	ND	36	10	ug/kg	
85-01-8	Phenanthrene	92.6	36	12	ug/kg	
129-00-0	Pyrene	195	36	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		15-114%
321-60-8	2-Fluorobiphenyl	54%		22-104%
1718-51-0	Terphenyl-d14	59%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> B-1A <b>Lab Sample ID:</b> JD13820-1 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 88.4
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.2	2.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	7.1	4.4	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	0.91	0.44	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.1	1.1	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	28.8	1.1	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	12.5	5.5	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	13.2	4.4	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.037	0.037	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	17.0	4.4	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 4.4	4.4	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 1.1	1.1	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.2	2.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	41.8	5.5	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> B-1B <b>Lab Sample ID:</b> JD13820-2 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 83.9
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Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234266.D	1	10/01/20 13:19	TDN	09/29/20 23:08	n/a	VI9484

Run #1	Initial Weight
Run #2	5.4 g

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	10	11	4.6	ug/kg	J
71-43-2	Benzene	ND	0.55	0.50	ug/kg	
74-97-5	Bromochloromethane	ND	5.5	0.62	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.47	ug/kg	
75-25-2	Bromoform	ND	5.5	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.5	0.84	ug/kg	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	11	9.4	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.59	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.68	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.51	ug/kg	
75-00-3	Chloroethane	ND	5.5	0.65	ug/kg	
67-66-3	Chloroform	ND	2.2	0.57	ug/kg	
74-87-3	Chloromethane	ND	5.5	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.2	0.73	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.77	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.62	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.46	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.60	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.55	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.5	0.80	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.52	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.72	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.93	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.67	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.52	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.52	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.50	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.50	ug/kg	
76-13-1	Freon 113	ND	5.5	2.9	ug/kg	
591-78-6	2-Hexanone	ND	5.5	2.3	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

Report of Analysis

Client Sample ID: B-1B	Date Sampled: 09/28/20
Lab Sample ID: JD13820-2	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 83.9
Method: SW846 8260D SW846 5035	
Project: Former TCCA, Oreland, PA	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.2	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.5	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	2.2	0.97	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.52	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.5	2.5	ug/kg	
75-09-2	Methylene chloride	ND	5.5	2.9	ug/kg	
100-42-5	Styrene	ND	2.2	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.66	ug/kg	
127-18-4	Tetrachloroethene	ND	2.2	0.64	ug/kg	
108-88-3	Toluene	ND	1.1	0.58	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.5	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.5	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.53	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.61	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.84	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.5	0.75	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.53	ug/kg	
	m,p-Xylene	ND	1.1	0.99	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.51	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.64	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		75-127%
17060-07-0	1,2-Dichloroethane-D4	104%		75-130%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
 4

## Report of Analysis

<b>Client Sample ID:</b> B-1B <b>Lab Sample ID:</b> JD13820-2 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 83.9
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139530.D	1	10/01/20 22:56	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.1 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	ND	38	19	ug/kg	
120-12-7	Anthracene	ND	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	ND	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	38	18	ug/kg	
218-01-9	Chrysene	ND	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	ND	38	17	ug/kg	
86-73-7	Fluorene	ND	38	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	38	18	ug/kg	
91-20-3	Naphthalene	ND	38	11	ug/kg	
85-01-8	Phenanthrene	ND	38	13	ug/kg	
129-00-0	Pyrene	ND	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		15-114%
321-60-8	2-Fluorobiphenyl	78%		22-104%
1718-51-0	Terphenyl-d14	80%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> B-1B	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-2	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 83.9
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	8.2	1.2	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	23.4	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	41.9	15	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	105	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.035	0.035	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	32.7	4.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.8	5.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	256	5.8	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

(1) Instrument QC Batch: MA49384

(2) Instrument QC Batch: MA49395

(3) Instrument QC Batch: MA49404

(4) Prep QC Batch: MP23013

(5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.2  
4



# Report of Analysis

<b>Client Sample ID:</b> B-2A		
<b>Lab Sample ID:</b> JD13820-3		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8260D SW846 5035		<b>Percent Solids:</b> 85.0
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I234267.D	1	10/01/20 13:49	TDN	09/29/20 23:08	n/a	VI9484
Run #2							

Run #	Initial Weight
Run #1	4.9 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	5.0	ug/kg	
71-43-2	Benzene	ND	0.60	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	6.0	0.67	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.52	ug/kg	
75-25-2	Bromoform	ND	6.0	1.6	ug/kg	
74-83-9	Bromomethane	ND	6.0	0.92	ug/kg	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	12	10	ug/kg	
75-15-0	Carbon disulfide	ND	2.4	0.64	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.4	0.74	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.55	ug/kg	
75-00-3	Chloroethane	ND	6.0	0.71	ug/kg	
67-66-3	Chloroform	ND	2.4	0.62	ug/kg	
74-87-3	Chloromethane	ND	6.0	2.4	ug/kg	
110-82-7	Cyclohexane	ND	2.4	0.79	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.83	ug/kg	
124-48-1	Dibromochloromethane	ND	2.4	0.67	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.66	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.60	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.59	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.0	0.87	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.59	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.56	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.79	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.73	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.57	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.57	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.54	ug/kg	
76-13-1	Freon 113	ND	6.0	3.2	ug/kg	
591-78-6	2-Hexanone	ND	6.0	2.5	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> B-2A <b>Lab Sample ID:</b> JD13820-3 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 85.0
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
79-20-9	Methyl Acetate	ND	6.0	1.7	ug/kg	
108-87-2	Methylcyclohexane	ND	2.4	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.56	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.0	2.7	ug/kg	
75-09-2	Methylene chloride	ND	6.0	3.1	ug/kg	
100-42-5	Styrene	ND	2.4	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.72	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.70	ug/kg	
108-88-3	Toluene	ND	1.2	0.63	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.0	3.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.0	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.58	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.67	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.91	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.0	0.82	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.58	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.70	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		75-127%
17060-07-0	1,2-Dichloroethane-D4	105%		75-130%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	103%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

# Report of Analysis

<b>Client Sample ID:</b> B-2A		
<b>Lab Sample ID:</b> JD13820-3		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8270E SW846 3510C		<b>Percent Solids:</b> 85.0
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139531.D	1	10/01/20 23:23	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	ND	38	19	ug/kg	
120-12-7	Anthracene	ND	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	ND	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	38	18	ug/kg	
218-01-9	Chrysene	ND	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	ND	38	17	ug/kg	
86-73-7	Fluorene	ND	38	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	38	18	ug/kg	
91-20-3	Naphthalene	ND	38	11	ug/kg	
85-01-8	Phenanthrene	ND	38	13	ug/kg	
129-00-0	Pyrene	ND	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		15-114%
321-60-8	2-Fluorobiphenyl	64%		22-104%
1718-51-0	Terphenyl-d14	66%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> B-2A <b>Lab Sample ID:</b> JD13820-3 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 85.0
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	7.9	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	1.1	0.46	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.1	1.1	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	32.7	1.1	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	18.8	5.7	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	13.3	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.052	0.037	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	20.2	4.6	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 4.6	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 1.1	1.1	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.3	2.3	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	50.0	5.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.3  
4

## Report of Analysis

Client Sample ID: B-2B	Date Sampled: 09/28/20
Lab Sample ID: JD13820-4	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 84.7
Method: SW846 8260D SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234268.D	1	10/01/20 14:18	TDN	09/29/20 23:08	n/a	VI9484

Run #1	Initial Weight
Run #2	5.3 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	4.6	ug/kg	
71-43-2	Benzene	ND	0.56	0.51	ug/kg	
74-97-5	Bromochloromethane	ND	5.6	0.62	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.48	ug/kg	
75-25-2	Bromoform	ND	5.6	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.6	0.85	ug/kg	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	11	9.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.60	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.69	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.51	ug/kg	
75-00-3	Chloroethane	ND	5.6	0.66	ug/kg	
67-66-3	Chloroform	ND	2.2	0.58	ug/kg	
74-87-3	Chloromethane	ND	5.6	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.2	0.73	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.77	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.62	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.47	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.61	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.55	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.6	0.81	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.52	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.73	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.94	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.68	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.53	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.53	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.51	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.50	ug/kg	
76-13-1	Freon 113	ND	5.6	3.0	ug/kg	
591-78-6	2-Hexanone	ND	5.6	2.4	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-2B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-4		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 84.7
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.2	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.6	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	2.2	0.97	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.52	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.6	2.5	ug/kg	
75-09-2	Methylene chloride	ND	5.6	2.9	ug/kg	
100-42-5	Styrene	ND	2.2	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.67	ug/kg	
127-18-4	Tetrachloroethene	ND	2.2	0.65	ug/kg	
108-88-3	Toluene	ND	1.1	0.58	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.6	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.54	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.62	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.85	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.6	0.76	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.54	ug/kg	
	m,p-Xylene	ND	1.1	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.51	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.65	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		75-127%
17060-07-0	1,2-Dichloroethane-D4	105%		75-130%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	104%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-2B <b>Lab Sample ID:</b> JD13820-4 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 84.7
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139532.D	1	10/01/20 23:50	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	13	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	ND	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	39	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	18	ug/kg	
218-01-9	Chrysene	ND	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	ND	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	39	18	ug/kg	
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	ND	39	13	ug/kg	
129-00-0	Pyrene	ND	39	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	39%		15-114%
321-60-8	2-Fluorobiphenyl	39%		22-104%
1718-51-0	Terphenyl-d14	38%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-2B <b>Lab Sample ID:</b> JD13820-4 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 84.7
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 4.6	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	2.0	0.46	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.2	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	20.7	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	9.7	5.8	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	8.9	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.049	0.035	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	27.1	4.6	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 4.6	4.6	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	1.6	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.3	2.3	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	68.2	5.8	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.4  
4



## Report of Analysis

<b>Client Sample ID:</b> B-3A <b>Lab Sample ID:</b> JD13820-5 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 85.9
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174121.D	1	10/02/20 14:26	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	4.8 g
Run #2	

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	5.0	ug/kg	
71-43-2	Benzene	ND	0.61	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	6.1	0.68	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.52	ug/kg	
75-25-2	Bromoform	ND	6.1	1.6	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	6.1	0.93	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	10	ug/kg	
75-15-0	Carbon disulfide	ND	2.4	0.65	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.4	0.75	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.56	ug/kg	
75-00-3	Chloroethane	ND	6.1	0.72	ug/kg	
67-66-3	Chloroform	ND	2.4	0.63	ug/kg	
74-87-3	Chloromethane	ND	6.1	2.4	ug/kg	
110-82-7	Cyclohexane	ND	2.4	0.80	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.84	ug/kg	
124-48-1	Dibromochloromethane	ND	2.4	0.68	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.66	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.60	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.60	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.1	0.88	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.60	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.57	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.79	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.74	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.57	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.58	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.55	ug/kg	
76-13-1	Freon 113	ND	6.1	3.2	ug/kg	
591-78-6	2-Hexanone	ND	6.1	2.6	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

Client Sample ID: B-3A		Date Sampled: 09/28/20
Lab Sample ID: JD13820-5		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 85.9
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
79-20-9	Methyl Acetate	ND	6.1	1.7	ug/kg	
108-87-2	Methylcyclohexane	ND	2.4	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.57	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.1	2.8	ug/kg	
75-09-2	Methylene chloride	ND	6.1	3.2	ug/kg	
100-42-5	Styrene	ND	2.4	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.73	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.70	ug/kg	
108-88-3	Toluene	ND	1.2	0.64	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.1	3.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.1	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.59	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.67	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.92	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.1	0.83	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.58	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.56	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.71	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		75-127%
17060-07-0	1,2-Dichloroethane-D4	114%		75-130%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Naphthalene, methyl- isomer	19.22	6.5	ug/kg	J
	Total TIC, Volatile		6.5	ug/kg	J

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

Client Sample ID:	B-3A	Date Sampled:	09/28/20
Lab Sample ID:	JD13820-5	Date Received:	09/29/20
Matrix:	SO - Soil	Percent Solids:	85.9
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139538.D	1	10/02/20 02:33	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	39.9	38	19	ug/kg	
120-12-7	Anthracene	41.6	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	127	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	117	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	107	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	60.2	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	31.9	38	18	ug/kg	J
218-01-9	Chrysene	149	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	170	38	17	ug/kg	
86-73-7	Fluorene	26.4	38	18	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	53.8	38	18	ug/kg	
91-20-3	Naphthalene	15.2	38	11	ug/kg	J
85-01-8	Phenanthrene	165	38	13	ug/kg	
129-00-0	Pyrene	314	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		15-114%
321-60-8	2-Fluorobiphenyl	54%		22-104%
1718-51-0	Terphenyl-d14	56%		23-121%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-3A <b>Lab Sample ID:</b> JD13820-5 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 85.9
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.4	2.4	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	8.3	4.7	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	1.6	0.47	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.2	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	30.1	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	30.7	5.9	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	19.1	4.7	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.053	0.036	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	21.6	4.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 4.7	4.7	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 1.2	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.4	2.4	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	122	5.9	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.5  
4

## Report of Analysis

Client Sample ID: B-3B	Date Sampled: 09/28/20
Lab Sample ID: JD13820-6	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 88.7
Method: SW846 8260D SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174122.D	1	10/02/20 14:48	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	5.8 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.8	9.7	4.0	ug/kg	J
71-43-2	Benzene	ND	0.49	0.44	ug/kg	
74-97-5	Bromochloromethane	ND	4.9	0.54	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	0.42	ug/kg	
75-25-2	Bromoform	ND	4.9	1.3	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	4.9	0.74	ug/kg	
78-93-3	2-Butanone (MEK)	ND	9.7	8.3	ug/kg	
75-15-0	Carbon disulfide	ND	1.9	0.52	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	0.60	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	0.45	ug/kg	
75-00-3	Chloroethane	ND	4.9	0.57	ug/kg	
67-66-3	Chloroform	ND	1.9	0.50	ug/kg	
74-87-3	Chloromethane	ND	4.9	1.9	ug/kg	
110-82-7	Cyclohexane	ND	1.9	0.64	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.67	ug/kg	
124-48-1	Dibromochloromethane	ND	1.9	0.54	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.97	0.41	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.97	0.53	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.97	0.48	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.97	0.48	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.9	0.71	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.97	0.48	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.97	0.46	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.97	0.64	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.97	0.82	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.97	0.59	ug/kg	
78-87-5	1,2-Dichloropropane	ND	1.9	0.46	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.46	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.44	ug/kg	
100-41-4	Ethylbenzene	ND	0.97	0.44	ug/kg	
76-13-1	Freon 113	ND	4.9	2.6	ug/kg	
591-78-6	2-Hexanone	ND	4.9	2.1	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-3B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-6		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 88.7
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.9	1.4	ug/kg	
79-20-9	Methyl Acetate	ND	4.9	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	1.9	0.85	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.97	0.46	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.9	2.2	ug/kg	
75-09-2	Methylene chloride	ND	4.9	2.5	ug/kg	
100-42-5	Styrene	ND	1.9	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.58	ug/kg	
127-18-4	Tetrachloroethene	ND	1.9	0.56	ug/kg	
108-88-3	Toluene	ND	0.97	0.51	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.9	2.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.9	2.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.47	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.54	ug/kg	
79-01-6	Trichloroethene	ND	0.97	0.74	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.9	0.66	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	0.47	ug/kg	
	m,p-Xylene	ND	0.97	0.87	ug/kg	
95-47-6	o-Xylene	ND	0.97	0.45	ug/kg	
1330-20-7	Xylene (total)	ND	0.97	0.57	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		75-127%
17060-07-0	1,2-Dichloroethane-D4	115%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	106%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> B-3B <b>Lab Sample ID:</b> JD13820-6 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 88.7
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139558.D	1	10/02/20 13:35	HSS	10/01/20 10:00	OP29781	EP6356
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.1 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	16.6	36	13	ug/kg	J
208-96-8	Acenaphthylene	138	36	18	ug/kg	
120-12-7	Anthracene	118	36	22	ug/kg	
56-55-3	Benzo(a)anthracene	421	36	10	ug/kg	
50-32-8	Benzo(a)pyrene	369	36	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	376	36	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	242	36	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	109	36	17	ug/kg	
218-01-9	Chrysene	476	36	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	51.6	36	16	ug/kg	
206-44-0	Fluoranthene	494	36	16	ug/kg	
86-73-7	Fluorene	52.4	36	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	208	36	17	ug/kg	
91-20-3	Naphthalene	35.1	36	10	ug/kg	J
85-01-8	Phenanthrene	293	36	12	ug/kg	
129-00-0	Pyrene	1010	36	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	35%		15-114%
321-60-8	2-Fluorobiphenyl	36%		22-104%
1718-51-0	Terphenyl-d14	40%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> B-3B <b>Lab Sample ID:</b> JD13820-6 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 88.7
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	4.0	1.1	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.8	2.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	16.0	1.1	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	14.1	14	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.035	0.035	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	41.8	4.6	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.8	2.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.7	5.7	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	185	5.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.6  
4



## Report of Analysis

<b>Client Sample ID:</b> B-4A <b>Lab Sample ID:</b> JD13820-7 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 90.0
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Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1C174123.D	1	10/02/20 15:15	PS	09/29/20 23:08	n/a	V1C7606

Run #1	Initial Weight
Run #2	5.9 g

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	9.4	3.9	ug/kg	
71-43-2	Benzene	ND	0.47	0.43	ug/kg	
74-97-5	Bromochloromethane	ND	4.7	0.53	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	0.40	ug/kg	
75-25-2	Bromoform	ND	4.7	1.3	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	4.7	0.72	ug/kg	
78-93-3	2-Butanone (MEK)	ND	9.4	8.0	ug/kg	
75-15-0	Carbon disulfide	ND	1.9	0.50	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	0.58	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	0.43	ug/kg	
75-00-3	Chloroethane	ND	4.7	0.56	ug/kg	
67-66-3	Chloroform	ND	1.9	0.49	ug/kg	
74-87-3	Chloromethane	ND	4.7	1.8	ug/kg	
110-82-7	Cyclohexane	ND	1.9	0.62	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.65	ug/kg	
124-48-1	Dibromochloromethane	ND	1.9	0.53	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.94	0.40	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.94	0.51	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.94	0.47	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.94	0.47	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.7	0.68	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.94	0.47	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.94	0.44	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.94	0.62	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.94	0.79	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.94	0.58	ug/kg	
78-87-5	1,2-Dichloropropane	ND	1.9	0.45	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.45	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.43	ug/kg	
100-41-4	Ethylbenzene	ND	0.94	0.43	ug/kg	
76-13-1	Freon 113	ND	4.7	2.5	ug/kg	
591-78-6	2-Hexanone	ND	4.7	2.0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> B-4A <b>Lab Sample ID:</b> JD13820-7 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 90.0
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.9	1.3	ug/kg	
79-20-9	Methyl Acetate	ND	4.7	1.3	ug/kg	
108-87-2	Methylcyclohexane	ND	1.9	0.82	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.94	0.44	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.7	2.1	ug/kg	
75-09-2	Methylene chloride	ND	4.7	2.5	ug/kg	
100-42-5	Styrene	ND	1.9	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.56	ug/kg	
127-18-4	Tetrachloroethene	ND	1.9	0.55	ug/kg	
108-88-3	Toluene	ND	0.94	0.49	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.7	2.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.7	2.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.45	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.52	ug/kg	
79-01-6	Trichloroethene	ND	0.94	0.72	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.7	0.64	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	0.45	ug/kg	
	m,p-Xylene	ND	0.94	0.84	ug/kg	
95-47-6	o-Xylene	ND	0.94	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	0.94	0.55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		75-127%
17060-07-0	1,2-Dichloroethane-D4	117%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> B-4A <b>Lab Sample ID:</b> JD13820-7 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 90.0
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	P139547.D	5	10/02/20 06:37	CS	10/01/20 10:00	OP29781	EP6355
Run #2	P139557.D	25	10/02/20 13:08	HSS	10/01/20 10:00	OP29781	EP6356

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2	30.1 g	1.0 ml

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	657	180	64	ug/kg	
208-96-8	Acenaphthylene	698	180	94	ug/kg	
120-12-7	Anthracene	2740	180	110	ug/kg	
56-55-3	Benzo(a)anthracene	10300	180	52	ug/kg	
50-32-8	Benzo(a)pyrene	11400	180	84	ug/kg	
205-99-2	Benzo(b)fluoranthene	13100	180	82	ug/kg	
191-24-2	Benzo(g,h,i)perylene	7550	180	92	ug/kg	
207-08-9	Benzo(k)fluoranthene	4960	180	86	ug/kg	
218-01-9	Chrysene	10300	180	58	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1760	180	82	ug/kg	
206-44-0	Fluoranthene	18100	180	82	ug/kg	
86-73-7	Fluorene	799	180	85	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	8110	180	87	ug/kg	
91-20-3	Naphthalene	220	180	52	ug/kg	
85-01-8	Phenanthrene	9770	180	62	ug/kg	
129-00-0	Pyrene	21500 <sup>b</sup>	920	300	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%	59%	15-114%
321-60-8	2-Fluorobiphenyl	55%	60%	22-104%
1718-51-0	Terphenyl-d14	62%	64%	23-121%

(a) Dilution required due to viscosity of the extract matrix.  
 (b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-4A	Date Sampled: 09/28/20
Lab Sample ID: JD13820-7	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 90.0
Project: Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	4.5	2.3	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	14.2	1.1	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	57.2	1.1	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	574	14	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	440	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.11	0.036	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	70.2	4.6	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.7	5.7	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	3640	29	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.7  
4

## Report of Analysis

Client Sample ID: B-4B	Date Sampled: 09/28/20
Lab Sample ID: JD13820-8	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 86.1
Method: SW846 8260D SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174127.D	1	10/02/20 17:03	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	4.8 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	5.0	ug/kg	
71-43-2	Benzene	ND	0.60	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	6.0	0.68	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.52	ug/kg	
75-25-2	Bromoform	ND	6.0	1.6	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	6.0	0.92	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	10	ug/kg	
75-15-0	Carbon disulfide	ND	2.4	0.65	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.4	0.75	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.56	ug/kg	
75-00-3	Chloroethane	ND	6.0	0.72	ug/kg	
67-66-3	Chloroform	ND	2.4	0.63	ug/kg	
74-87-3	Chloromethane	ND	6.0	2.4	ug/kg	
110-82-7	Cyclohexane	ND	2.4	0.79	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.84	ug/kg	
124-48-1	Dibromochloromethane	ND	2.4	0.68	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.66	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.60	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.60	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.0	0.88	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.60	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.57	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.79	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.74	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.57	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.57	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.55	ug/kg	
76-13-1	Freon 113	ND	6.0	3.2	ug/kg	
591-78-6	2-Hexanone	ND	6.0	2.6	ug/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-4B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-8		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 86.1
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
79-20-9	Methyl Acetate	ND	6.0	1.7	ug/kg	
108-87-2	Methylcyclohexane	ND	2.4	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.57	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.0	2.7	ug/kg	
75-09-2	Methylene chloride	ND	6.0	3.2	ug/kg	
100-42-5	Styrene	ND	2.4	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.72	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.70	ug/kg	
108-88-3	Toluene	ND	1.2	0.64	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.0	3.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.0	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.58	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.67	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.92	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.0	0.83	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.58	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.71	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		75-127%
17060-07-0	1,2-Dichloroethane-D4	115%		75-130%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.8  
4

## Report of Analysis

<b>Client Sample ID:</b> B-4B <b>Lab Sample ID:</b> JD13820-8 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270E SW846 3510C <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 86.1
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139540.D	1	10/02/20 03:27	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	19.4	38	13	ug/kg	J
208-96-8	Acenaphthylene	ND	38	19	ug/kg	
120-12-7	Anthracene	44.6	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	114	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	118	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	148	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	68.6	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	52.8	38	18	ug/kg	
218-01-9	Chrysene	113	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	255	38	17	ug/kg	
86-73-7	Fluorene	19.5	38	17	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	79.7	38	18	ug/kg	
91-20-3	Naphthalene	13.4	38	11	ug/kg	J
85-01-8	Phenanthrene	183	38	13	ug/kg	
129-00-0	Pyrene	225	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%		15-114%
321-60-8	2-Fluorobiphenyl	47%		22-104%
1718-51-0	Terphenyl-d14	50%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.8  
4

## Report of Analysis

<b>Client Sample ID:</b> B-4B <b>Lab Sample ID:</b> JD13820-8 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 86.1
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	2.2	1.1	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.8	2.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	25.2	1.1	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	35.5	14	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	17.9	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.037	0.037	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	25.1	4.5	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.8	2.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.6	5.6	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	111	5.6	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.8  
4



## Report of Analysis

Client Sample ID: B-5A	Date Sampled: 09/28/20
Lab Sample ID: JD13820-9	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 80.7
Method: SW846 8260D SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174128.D	1	10/02/20 17:30	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	6.0 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.3	ug/kg	
71-43-2	Benzene	ND	0.52	0.47	ug/kg	
74-97-5	Bromochloromethane	ND	5.2	0.58	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.44	ug/kg	
75-25-2	Bromoform	ND	5.2	1.4	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	5.2	0.79	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	8.8	ug/kg	
75-15-0	Carbon disulfide	ND	2.1	0.55	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.1	0.64	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.47	ug/kg	
75-00-3	Chloroethane	ND	5.2	0.61	ug/kg	
67-66-3	Chloroform	ND	2.1	0.54	ug/kg	
74-87-3	Chloromethane	ND	5.2	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.1	0.68	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.72	ug/kg	
124-48-1	Dibromochloromethane	ND	2.1	0.58	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.43	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.56	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.51	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.2	0.75	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.51	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.49	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.68	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.87	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.63	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.49	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.47	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.47	ug/kg	
76-13-1	Freon 113	ND	5.2	2.8	ug/kg	
591-78-6	2-Hexanone	ND	5.2	2.2	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-5A		
Lab Sample ID: JD13820-9		Date Sampled: 09/28/20
Matrix: SO - Soil		Date Received: 09/29/20
Method: SW846 8260D SW846 5035		Percent Solids: 80.7
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
79-20-9	Methyl Acetate	ND	5.2	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.1	0.90	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.48	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.2	2.3	ug/kg	
75-09-2	Methylene chloride	ND	5.2	2.7	ug/kg	
100-42-5	Styrene	ND	2.1	1.4	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.62	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.60	ug/kg	
108-88-3	Toluene	ND	1.0	0.54	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.2	2.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	2.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.50	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.57	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.79	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.2	0.71	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.50	ug/kg	
	m,p-Xylene	ND	1.0	0.93	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.47	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.60	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		75-127%
17060-07-0	1,2-Dichloroethane-D4	113%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	107%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.9  
4

# Report of Analysis

<b>Client Sample ID:</b> B-5A	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-9	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 80.7
<b>Method:</b> SW846 8270E SW846 3510C	
<b>Project:</b> Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139537.D	1	10/02/20 02:06	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.4 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	14	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	12.6	39	11	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	39	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	18	ug/kg	
218-01-9	Chrysene	ND	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	ND	39	18	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	39	19	ug/kg	
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	ND	39	13	ug/kg	
129-00-0	Pyrene	13.8	39	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	29%		15-114%
321-60-8	2-Fluorobiphenyl	29%		22-104%
1718-51-0	Terphenyl-d14	31%		23-121%

ND = Not detected    MDL = Method Detection Limit    J = Indicates an estimated value  
 RL = Reporting Limit    B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range    N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-5A	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-9	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 80.7
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.5	2.5	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic	< 2.5	2.5	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Beryllium	1.6	0.25	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium	< 0.62	0.62	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Chromium	4.2	1.2	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper	13.1	3.1	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.14	0.040	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	8.6	5.0	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium	< 2.5	2.5	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Silver	< 0.62	0.62	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Thallium	< 1.2	1.2	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Zinc	56.3	6.2	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.9  
4

# Report of Analysis

<b>Client Sample ID:</b> B-5B		
<b>Lab Sample ID:</b> JD13820-10		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8260D SW846 5035		<b>Percent Solids:</b> 92.6
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174132.D	1	10/02/20 19:18	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	5.2 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	184	10	4.3	ug/kg	
71-43-2	Benzene	ND	0.52	0.47	ug/kg	
74-97-5	Bromochloromethane	ND	5.2	0.58	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.45	ug/kg	
75-25-2	Bromoform	ND	5.2	1.4	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	5.2	0.79	ug/kg	
78-93-3	2-Butanone (MEK)	27.7	10	8.8	ug/kg	
75-15-0	Carbon disulfide	3.0	2.1	0.56	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.1	0.64	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.48	ug/kg	
75-00-3	Chloroethane	ND	5.2	0.61	ug/kg	
67-66-3	Chloroform	ND	2.1	0.54	ug/kg	
74-87-3	Chloromethane	ND	5.2	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.1	0.68	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.72	ug/kg	
124-48-1	Dibromochloromethane	ND	2.1	0.58	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.57	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.52	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.2	0.75	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.51	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.49	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.68	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.87	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.63	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.49	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.47	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.47	ug/kg	
76-13-1	Freon 113	ND	5.2	2.8	ug/kg	
591-78-6	2-Hexanone	ND	5.2	2.2	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.10 4

## Report of Analysis

Client Sample ID: B-5B		
Lab Sample ID: JD13820-10		Date Sampled: 09/28/20
Matrix: SO - Soil		Date Received: 09/29/20
Method: SW846 8260D SW846 5035		Percent Solids: 92.6
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
79-20-9	Methyl Acetate	ND	5.2	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.1	0.91	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.49	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.2	2.4	ug/kg	
75-09-2	Methylene chloride	ND	5.2	2.7	ug/kg	
100-42-5	Styrene	ND	2.1	1.4	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.62	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.60	ug/kg	
108-88-3	Toluene	ND	1.0	0.55	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.2	2.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	2.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.50	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.58	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.79	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.2	0.71	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.50	ug/kg	
	m,p-Xylene	ND	1.0	0.93	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.48	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.61	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		75-127%
17060-07-0	1,2-Dichloroethane-D4	115%		75-130%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
91-20-3	Naphthalene	18.08	29	ug/kg	JN
91-57-6	Naphthalene, 2-methyl-	19.04	15	ug/kg	JN
	Naphthalene, methyl- isomer	19.22	13	ug/kg	J
	Total TIC, Volatile		57	ug/kg	J

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-5B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-10		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 92.6
Method: SW846 8270E SW846 3510C		
Project: Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	P139546.D	2	10/02/20 06:10	CS	10/01/20 10:00	OP29781	EP6355
Run #2	P139556.D	10	10/02/20 12:42	HSS	10/01/20 10:00	OP29781	EP6356

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2	31.0 g	1.0 ml

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	773	70	24	ug/kg	
208-96-8	Acenaphthylene	958	70	35	ug/kg	
120-12-7	Anthracene	21800 <sup>b</sup>	350	210	ug/kg	
56-55-3	Benzo(a)anthracene	3080 <sup>b</sup>	350	99	ug/kg	
50-32-8	Benzo(a)pyrene	3340 <sup>b</sup>	350	160	ug/kg	
205-99-2	Benzo(b)fluoranthene	3940 <sup>b</sup>	350	150	ug/kg	
191-24-2	Benzo(g,h,i)perylene	1940 <sup>b</sup>	350	170	ug/kg	
207-08-9	Benzo(k)fluoranthene	1550 <sup>b</sup>	350	160	ug/kg	
218-01-9	Chrysene	3340 <sup>b</sup>	350	110	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	464 <sup>b</sup>	350	150	ug/kg	
206-44-0	Fluoranthene	5930	70	31	ug/kg	
86-73-7	Fluorene	2580	70	32	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2160 <sup>b</sup>	350	160	ug/kg	
91-20-3	Naphthalene	1570	70	20	ug/kg	
85-01-8	Phenanthrene	8360 <sup>b</sup>	350	120	ug/kg	
129-00-0	Pyrene	6280 <sup>b</sup>	350	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%	51%	15-114%
321-60-8	2-Fluorobiphenyl	45%	48%	22-104%
1718-51-0	Terphenyl-d14	47%	50%	23-121%

- (a) Dilution required due to viscosity of the extract matrix.  
 (b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.10  
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## Report of Analysis

<b>Client Sample ID:</b> B-5B	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-10	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 92.6
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	12.9	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	43.1	1.1	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.7	2.7	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	73.9	1.1	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	1570	14	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	793	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.24	0.035	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	127	4.4	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 11	11	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	2.9	2.7	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.5	5.5	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	11800	110	mg/kg	20	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.10  
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## Report of Analysis

<b>Client Sample ID:</b> B-6A <b>Lab Sample ID:</b> JD13820-11 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260D SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 81.4
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174129.D	1	10/02/20 17:57	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	4.1 g
Run #2	

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	15	6.2	ug/kg	
71-43-2	Benzene	ND	0.75	0.68	ug/kg	
74-97-5	Bromochloromethane	ND	7.5	0.84	ug/kg	
75-27-4	Bromodichloromethane	ND	3.0	0.64	ug/kg	
75-25-2	Bromoform	ND	7.5	2.0	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	7.5	1.1	ug/kg	
78-93-3	2-Butanone (MEK)	ND	15	13	ug/kg	
75-15-0	Carbon disulfide	ND	3.0	0.80	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.0	0.93	ug/kg	
108-90-7	Chlorobenzene	ND	3.0	0.69	ug/kg	
75-00-3	Chloroethane	ND	7.5	0.89	ug/kg	
67-66-3	Chloroform	ND	3.0	0.78	ug/kg	
74-87-3	Chloromethane	ND	7.5	2.9	ug/kg	
110-82-7	Cyclohexane	ND	3.0	0.98	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	3.0	0.84	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.5	0.63	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.5	0.82	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.5	0.74	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.5	0.74	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.5	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.5	0.74	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.5	0.70	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.5	0.98	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	1.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.92	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.0	0.71	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.0	0.71	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.0	0.68	ug/kg	
100-41-4	Ethylbenzene	ND	1.5	0.68	ug/kg	
76-13-1	Freon 113	ND	7.5	4.0	ug/kg	
591-78-6	2-Hexanone	ND	7.5	3.2	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.11  
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## Report of Analysis

Client Sample ID: B-6A		Date Sampled: 09/28/20
Lab Sample ID: JD13820-11		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 81.4
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.0	2.1	ug/kg	
79-20-9	Methyl Acetate	ND	7.5	2.1	ug/kg	
108-87-2	Methylcyclohexane	ND	3.0	1.3	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.5	0.70	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.5	3.4	ug/kg	
75-09-2	Methylene chloride	ND	7.5	3.9	ug/kg	
100-42-5	Styrene	ND	3.0	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.0	0.90	ug/kg	
127-18-4	Tetrachloroethene	ND	3.0	0.87	ug/kg	
108-88-3	Toluene	ND	1.5	0.79	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.5	3.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.5	3.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.0	0.72	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.0	0.83	ug/kg	
79-01-6	Trichloroethene	ND	1.5	1.1	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.5	1.0	ug/kg	
75-01-4	Vinyl chloride	ND	3.0	0.72	ug/kg	
	m,p-Xylene	ND	1.5	1.3	ug/kg	
95-47-6	o-Xylene	ND	1.5	0.69	ug/kg	
1330-20-7	Xylene (total)	ND	1.5	0.87	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		75-127%
17060-07-0	1,2-Dichloroethane-D4	116%		75-130%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.11  
4

# Report of Analysis

<b>Client Sample ID:</b> B-6A		
<b>Lab Sample ID:</b> JD13820-11		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8270E SW846 3510C		<b>Percent Solids:</b> 81.4
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139533.D	1	10/02/20 00:17	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	14	ug/kg	
208-96-8	Acenaphthylene	ND	40	20	ug/kg	
120-12-7	Anthracene	ND	40	24	ug/kg	
56-55-3	Benzo(a)anthracene	ND	40	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	40	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	40	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	40	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	40	19	ug/kg	
218-01-9	Chrysene	ND	40	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	40	18	ug/kg	
206-44-0	Fluoranthene	ND	40	18	ug/kg	
86-73-7	Fluorene	ND	40	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	40	19	ug/kg	
91-20-3	Naphthalene	ND	40	11	ug/kg	
85-01-8	Phenanthrene	ND	40	13	ug/kg	
129-00-0	Pyrene	ND	40	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%		15-114%
321-60-8	2-Fluorobiphenyl	54%		22-104%
1718-51-0	Terphenyl-d14	58%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.11 4

## Report of Analysis

<b>Client Sample ID:</b> B-6A <b>Lab Sample ID:</b> JD13820-11 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 81.4
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.5	2.5	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 13	13	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	4.3	1.3	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.1	3.1	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	15.6	1.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	198	16	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	75.7	13	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.11	0.038	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	44.6	5.0	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 13	13	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 3.1	3.1	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 6.3	6.3	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	250	6.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.11  
4

# Report of Analysis

<b>Client Sample ID:</b> B-6B		
<b>Lab Sample ID:</b> JD13820-12		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8260D SW846 5035		<b>Percent Solids:</b> 83.3
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174130.D	1	10/02/20 18:24	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	5.1 g
Run #2	

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	4.9	ug/kg	
71-43-2	Benzene	ND	0.59	0.54	ug/kg	
74-97-5	Bromochloromethane	ND	5.9	0.66	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.50	ug/kg	
75-25-2	Bromoform	ND	5.9	1.6	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	5.9	0.90	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	10	ug/kg	
75-15-0	Carbon disulfide	ND	2.4	0.63	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.4	0.73	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.54	ug/kg	
75-00-3	Chloroethane	ND	5.9	0.70	ug/kg	
67-66-3	Chloroform	ND	2.4	0.61	ug/kg	
74-87-3	Chloromethane	ND	5.9	2.3	ug/kg	
110-82-7	Cyclohexane	ND	2.4	0.77	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.82	ug/kg	
124-48-1	Dibromochloromethane	ND	2.4	0.66	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.50	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.64	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.58	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.58	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.9	0.86	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.58	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.55	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.77	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	0.99	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.72	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.56	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.56	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.54	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.53	ug/kg	
76-13-1	Freon 113	ND	5.9	3.1	ug/kg	
591-78-6	2-Hexanone	ND	5.9	2.5	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-6B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-12		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 83.3
Method: SW846 8260D SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
79-20-9	Methyl Acetate	ND	5.9	1.6	ug/kg	
108-87-2	Methylcyclohexane	ND	2.4	1.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.55	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.9	2.7	ug/kg	
75-09-2	Methylene chloride	ND	5.9	3.1	ug/kg	
100-42-5	Styrene	ND	2.4	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.70	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.68	ug/kg	
108-88-3	Toluene	ND	1.2	0.62	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.9	2.9	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.9	2.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.57	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.65	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.90	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.9	0.81	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.57	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.54	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.69	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		75-127%
17060-07-0	1,2-Dichloroethane-D4	116%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	108%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.12  
4

## Report of Analysis

Client Sample ID: B-6B		Date Sampled: 09/28/20
Lab Sample ID: JD13820-12		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 83.3
Method: SW846 8270E SW846 3510C		
Project: Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	P139539.D	1	10/02/20 03:00	CS	10/01/20 10:00	OP29781	EP6355

Run #1	Initial Weight	Final Volume
Run #2	30.9 g	1.0 ml

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	13	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	30.2	39	24	ug/kg	J
56-55-3	Benzo(a)anthracene	61.3	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	71.4	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	80.8	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	40.8	39	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	34.2	39	18	ug/kg	J
218-01-9	Chrysene	69.4	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	111	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	43.7	39	18	ug/kg	
91-20-3	Naphthalene	16.8	39	11	ug/kg	J
85-01-8	Phenanthrene	67.9	39	13	ug/kg	
129-00-0	Pyrene	111	39	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	42%		15-114%
321-60-8	2-Fluorobiphenyl	43%		22-104%
1718-51-0	Terphenyl-d14	46%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.12  
4

## Report of Analysis

<b>Client Sample ID:</b> B-6B <b>Lab Sample ID:</b> JD13820-12 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 83.3
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.3	2.3	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	7.5	1.2	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	41.9	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	159	15	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	66.0	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.038	0.038	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	52.9	4.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.8	5.8	mg/kg	5	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	753	5.8	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.12  
4



## Report of Analysis

Client Sample ID:	B-7A	Date Sampled:	09/28/20
Lab Sample ID:	JD13820-13	Date Received:	09/29/20
Matrix:	SO - Soil	Percent Solids:	86.8
Method:	SW846 8260D SW846 5035		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C174131.D	1	10/02/20 18:50	PS	09/29/20 23:08	n/a	V1C7606
Run #2							

Run #	Initial Weight
Run #1	5.2 g
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	4.6	ug/kg	
71-43-2	Benzene	ND	0.55	0.50	ug/kg	
74-97-5	Bromochloromethane	ND	5.5	0.62	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.48	ug/kg	
75-25-2	Bromoform	ND	5.5	1.5	ug/kg	
74-83-9	Bromomethane <sup>a</sup>	ND	5.5	0.85	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	9.4	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.59	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.68	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.51	ug/kg	
75-00-3	Chloroethane	ND	5.5	0.65	ug/kg	
67-66-3	Chloroform	ND	2.2	0.57	ug/kg	
74-87-3	Chloromethane	ND	5.5	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.2	0.73	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.77	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.62	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.47	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.60	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.55	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.5	0.81	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.52	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.73	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.93	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.68	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.52	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.53	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.51	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.50	ug/kg	
76-13-1	Freon 113	ND	5.5	3.0	ug/kg	
591-78-6	2-Hexanone	ND	5.5	2.3	ug/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-7A		
Lab Sample ID: JD13820-13		Date Sampled: 09/28/20
Matrix: SO - Soil		Date Received: 09/29/20
Method: SW846 8260D SW846 5035		Percent Solids: 86.8
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.2	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.5	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	2.2	0.97	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.52	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.5	2.5	ug/kg	
75-09-2	Methylene chloride	ND	5.5	2.9	ug/kg	
100-42-5	Styrene	ND	2.2	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.66	ug/kg	
127-18-4	Tetrachloroethene	ND	2.2	0.64	ug/kg	
108-88-3	Toluene	ND	1.1	0.58	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.5	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.5	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.54	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.61	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.84	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.5	0.76	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.53	ug/kg	
	m,p-Xylene	ND	1.1	0.99	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.51	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.65	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		75-127%
17060-07-0	1,2-Dichloroethane-D4	116%		75-130%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	109%		79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.13  
4

## Report of Analysis

Client Sample ID: B-7A		Date Sampled: 09/28/20
Lab Sample ID: JD13820-13		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 86.8
Method: SW846 8270E SW846 3510C		
Project: Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139534.D	1	10/02/20 00:44	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	ND	38	19	ug/kg	
120-12-7	Anthracene	ND	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	15.3	38	11	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	17.3	38	17	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	ND	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	38	18	ug/kg	
218-01-9	Chrysene	12.4	38	12	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	20.5	38	17	ug/kg	J
86-73-7	Fluorene	ND	38	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	38	18	ug/kg	
91-20-3	Naphthalene	ND	38	11	ug/kg	
85-01-8	Phenanthrene	ND	38	13	ug/kg	
129-00-0	Pyrene	18.9	38	12	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%		15-114%
321-60-8	2-Fluorobiphenyl	48%		22-104%
1718-51-0	Terphenyl-d14	49%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.13  
4

## Report of Analysis

<b>Client Sample ID:</b> B-7A	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-13	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.8
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.4	2.4	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	2.4	1.2	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	15.1	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	62.9	15	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	23.5	12	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.037	0.037	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	28.9	4.7	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.9	2.9	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.9	5.9	mg/kg	5	09/30/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	117	5.9	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> B-7B <b>Lab Sample ID:</b> JD13820-14 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 82.3
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Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	Y190547.D	1	10/03/20 18:49	PS	09/29/20 23:08	n/a	VY8312

Run #1	Initial Weight
Run #2	5.4 g

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	17.3	11	4.7	ug/kg	
71-43-2	Benzene	ND	0.56	0.51	ug/kg	
74-97-5	Bromochloromethane	ND	5.6	0.63	ug/kg	
75-27-4	Bromodichloromethane	ND	2.3	0.48	ug/kg	
75-25-2	Bromoform	ND	5.6	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.6	0.86	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	9.6	ug/kg	
75-15-0	Carbon disulfide	ND	2.3	0.60	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.3	0.70	ug/kg	
108-90-7	Chlorobenzene	ND	2.3	0.52	ug/kg	
75-00-3	Chloroethane	ND	5.6	0.66	ug/kg	
67-66-3	Chloroform	ND	2.3	0.58	ug/kg	
74-87-3	Chloromethane	ND	5.6	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.3	0.74	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.3	0.78	ug/kg	
124-48-1	Dibromochloromethane	ND	2.3	0.63	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.47	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.61	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.56	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.56	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.6	0.82	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.56	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.53	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.74	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.95	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.69	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.3	0.53	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.3	0.53	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.3	0.51	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.51	ug/kg	
76-13-1	Freon 113	ND	5.6	3.0	ug/kg	
591-78-6	2-Hexanone	ND	5.6	2.4	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.14  
4

## Report of Analysis

<b>Client Sample ID:</b> B-7B	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-14	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 82.3
<b>Method:</b> SW846 8260C SW846 5035	
<b>Project:</b> Former TCCA, Oreland, PA	

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.3	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.6	1.6	ug/kg	
108-87-2	Methylcyclohexane	ND	2.3	0.98	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.53	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.6	2.6	ug/kg	
75-09-2	Methylene chloride	ND	5.6	2.9	ug/kg	
100-42-5	Styrene	ND	2.3	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.3	0.67	ug/kg	
127-18-4	Tetrachloroethene	ND	2.3	0.65	ug/kg	
108-88-3	Toluene	ND	1.1	0.59	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.6	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.3	0.54	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.3	0.62	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.86	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.6	0.77	ug/kg	
75-01-4	Vinyl chloride	ND	2.3	0.54	ug/kg	
	m,p-Xylene	ND	1.1	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.52	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.66	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		72-130%
17060-07-0	1,2-Dichloroethane-D4	106%		75-131%
2037-26-5	Toluene-D8	99%		81-121%
460-00-4	4-Bromofluorobenzene	97%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.59	41	ug/kg	J
	system artifact	3.89	280	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.14  
4

### Report of Analysis

<b>Client Sample ID:</b> B-7B		
<b>Lab Sample ID:</b> JD13820-14		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8270E SW846 3510C		<b>Percent Solids:</b> 82.3
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139536.D	1	10/02/20 01:39	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	14	ug/kg	
208-96-8	Acenaphthylene	ND	40	20	ug/kg	
120-12-7	Anthracene	ND	40	25	ug/kg	
56-55-3	Benzo(a)anthracene	20.0	40	11	ug/kg	J
50-32-8	Benzo(a)pyrene	22.4	40	18	ug/kg	J
205-99-2	Benzo(b)fluoranthene	30.1	40	18	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	22.2	40	20	ug/kg	J
207-08-9	Benzo(k)fluoranthene	ND	40	19	ug/kg	
218-01-9	Chrysene	21.5	40	13	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	40	18	ug/kg	
206-44-0	Fluoranthene	33.5	40	18	ug/kg	J
86-73-7	Fluorene	ND	40	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	22.3	40	19	ug/kg	J
91-20-3	Naphthalene	ND	40	11	ug/kg	
85-01-8	Phenanthrene	ND	40	14	ug/kg	
129-00-0	Pyrene	30.0	40	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	50%		15-114%
321-60-8	2-Fluorobiphenyl	49%		22-104%
1718-51-0	Terphenyl-d14	50%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.14  
4

## Report of Analysis

<b>Client Sample ID:</b> B-7B	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-14	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 82.3
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.4	2.4	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	13.3	1.2	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.0	3.0	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium <sup>a</sup>	30.4	6.0	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	487	15	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	153	12	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.038	0.038	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	74.8	4.8	mg/kg	1	09/30/20	10/01/20	GT SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	3.4	3.0	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 6.0	6.0	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	2260	30	mg/kg	5	09/30/20	10/02/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.14  
4



## Report of Analysis

<b>Client Sample ID:</b> B-8A <b>Lab Sample ID:</b> JD13820-15 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/28/20 <b>Date Received:</b> 09/29/20 <b>Percent Solids:</b> 97.3
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Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	Y190548.D	1	10/03/20 19:17	PS	09/29/20 23:08	n/a	VY8312

Run #1	Initial Weight
Run #2	5.5 g

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	9.3	3.9	ug/kg	
71-43-2	Benzene	ND	0.47	0.43	ug/kg	
74-97-5	Bromochloromethane	ND	4.7	0.52	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	0.40	ug/kg	
75-25-2	Bromoform	ND	4.7	1.3	ug/kg	
74-83-9	Bromomethane	ND	4.7	0.71	ug/kg	
78-93-3	2-Butanone (MEK)	ND	9.3	8.0	ug/kg	
75-15-0	Carbon disulfide	ND	1.9	0.50	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	0.58	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	0.43	ug/kg	
75-00-3	Chloroethane	ND	4.7	0.55	ug/kg	
67-66-3	Chloroform	ND	1.9	0.48	ug/kg	
74-87-3	Chloromethane	ND	4.7	1.8	ug/kg	
110-82-7	Cyclohexane	ND	1.9	0.61	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.65	ug/kg	
124-48-1	Dibromochloromethane	ND	1.9	0.52	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.93	0.39	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.93	0.51	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.93	0.46	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.93	0.46	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.7	0.68	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.93	0.46	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.93	0.44	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.93	0.61	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.93	0.78	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.93	0.57	ug/kg	
78-87-5	1,2-Dichloropropane	ND	1.9	0.44	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.44	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.43	ug/kg	
100-41-4	Ethylbenzene	ND	0.93	0.42	ug/kg	
76-13-1	Freon 113	ND	4.7	2.5	ug/kg	
591-78-6	2-Hexanone	ND	4.7	2.0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4

## Report of Analysis

Client Sample ID: B-8A		Date Sampled: 09/28/20
Lab Sample ID: JD13820-15		Date Received: 09/29/20
Matrix: SO - Soil		Percent Solids: 97.3
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.9	1.3	ug/kg	
79-20-9	Methyl Acetate	ND	4.7	1.3	ug/kg	
108-87-2	Methylcyclohexane	ND	1.9	0.82	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.93	0.44	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.7	2.1	ug/kg	
75-09-2	Methylene chloride	ND	4.7	2.4	ug/kg	
100-42-5	Styrene	ND	1.9	1.2	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.56	ug/kg	
127-18-4	Tetrachloroethene	ND	1.9	0.54	ug/kg	
108-88-3	Toluene	ND	0.93	0.49	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.7	2.3	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.7	2.3	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.45	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.52	ug/kg	
79-01-6	Trichloroethene	ND	0.93	0.71	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.7	0.64	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	0.45	ug/kg	
	m,p-Xylene	ND	0.93	0.84	ug/kg	
95-47-6	o-Xylene	ND	0.93	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	0.93	0.54	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%		72-130%
17060-07-0	1,2-Dichloroethane-D4	107%		75-131%
2037-26-5	Toluene-D8	101%		81-121%
460-00-4	4-Bromofluorobenzene	99%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	35	ug/kg	J
	system artifact	3.89	250	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4

# Report of Analysis

<b>Client Sample ID:</b> B-8A		
<b>Lab Sample ID:</b> JD13820-15		<b>Date Sampled:</b> 09/28/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/29/20
<b>Method:</b> SW846 8270E SW846 3510C		<b>Percent Solids:</b> 97.3
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139555.D	1	10/02/20 12:15	HSS	10/01/20 10:00	OP29781	EP6356
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.2 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	92.4	33	9.3	ug/kg	
50-32-8	Benzo(a)pyrene	135	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	173	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	117	33	16	ug/kg	
207-08-9	Benzo(k)fluoranthene	65.9	33	15	ug/kg	
218-01-9	Chrysene	120	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	18.0	33	15	ug/kg	J
206-44-0	Fluoranthene	170	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	107	33	15	ug/kg	
91-20-3	Naphthalene	ND	33	9.3	ug/kg	
85-01-8	Phenanthrene	70.3	33	11	ug/kg	
129-00-0	Pyrene	190	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	39%		15-114%
321-60-8	2-Fluorobiphenyl	37%		22-104%
1718-51-0	Terphenyl-d14	40%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4

## Report of Analysis

<b>Client Sample ID:</b> B-8A	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-15	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 97.3
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.1	2.1	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	6.6	6.3	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	8.3	0.63	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.6	1.6	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	22.2	1.0	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	449	7.9	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	223	6.3	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.033	0.033	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	81.5	4.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 6.3	6.3	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	1.8	1.6	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 3.1	3.1	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	2100	16	mg/kg	3	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.15  
4

## Report of Analysis

Client Sample ID: B-8B	Date Sampled: 09/28/20
Lab Sample ID: JD13820-16	Date Received: 09/29/20
Matrix: SO - Soil	Percent Solids: 81.7
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	Y190549.D	1	10/03/20 19:46	PS	09/29/20 23:08	n/a	VY8312

Run #1	Initial Weight
Run #2	3.0 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	21.3	20	8.4	ug/kg	
71-43-2	Benzene	ND	1.0	0.93	ug/kg	
74-97-5	Bromochloromethane	ND	10	1.1	ug/kg	
75-27-4	Bromodichloromethane	ND	4.1	0.88	ug/kg	
75-25-2	Bromoform	ND	10	2.8	ug/kg	
74-83-9	Bromomethane	ND	10	1.6	ug/kg	
78-93-3	2-Butanone (MEK)	ND	20	17	ug/kg	
75-15-0	Carbon disulfide	ND	4.1	1.1	ug/kg	
56-23-5	Carbon tetrachloride	ND	4.1	1.3	ug/kg	
108-90-7	Chlorobenzene	ND	4.1	0.94	ug/kg	
75-00-3	Chloroethane	ND	10	1.2	ug/kg	
67-66-3	Chloroform	ND	4.1	1.1	ug/kg	
74-87-3	Chloromethane	ND	10	4.0	ug/kg	
110-82-7	Cyclohexane	ND	4.1	1.3	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.1	1.4	ug/kg	
124-48-1	Dibromochloromethane	ND	4.1	1.1	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.0	0.86	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	1.1	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	10	1.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.96	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	1.7	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	1.2	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.1	0.96	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.1	0.97	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.1	0.93	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.92	ug/kg	
76-13-1	Freon 113	ND	10	5.4	ug/kg	
591-78-6	2-Hexanone	ND	10	4.3	ug/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-8B		
Lab Sample ID: JD13820-16		Date Sampled: 09/28/20
Matrix: SO - Soil		Date Received: 09/29/20
Method: SW846 8260C SW846 5035		Percent Solids: 81.7
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	4.1	2.9	ug/kg	
79-20-9	Methyl Acetate	ND	10	2.8	ug/kg	
108-87-2	Methylcyclohexane	ND	4.1	1.8	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.96	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	10	4.6	ug/kg	
75-09-2	Methylene chloride	ND	10	5.3	ug/kg	
100-42-5	Styrene	ND	4.1	2.7	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.1	1.2	ug/kg	
127-18-4	Tetrachloroethene	ND	4.1	1.2	ug/kg	
108-88-3	Toluene	ND	2.0	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	10	5.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	10	5.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.1	0.99	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.1	1.1	ug/kg	
79-01-6	Trichloroethene	ND	2.0	1.6	ug/kg	
75-69-4	Trichlorofluoromethane	ND	10	1.4	ug/kg	
75-01-4	Vinyl chloride	ND	4.1	0.98	ug/kg	
	m,p-Xylene	ND	2.0	1.8	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.93	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	1.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		72-130%
17060-07-0	1,2-Dichloroethane-D4	112%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.59	100	ug/kg	J
	system artifact	3.77	18	ug/kg	J
	system artifact	3.90	320	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.16  
4

### Report of Analysis

<b>Client Sample ID:</b>	B-8B	<b>Date Sampled:</b>	09/28/20
<b>Lab Sample ID:</b>	JD13820-16	<b>Date Received:</b>	09/29/20
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.7
<b>Method:</b>	SW846 8270E SW846 3510C		
<b>Project:</b>	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P139535.D	1	10/02/20 01:12	CS	10/01/20 10:00	OP29781	EP6355
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	14	ug/kg	
208-96-8	Acenaphthylene	ND	40	20	ug/kg	
120-12-7	Anthracene	ND	40	24	ug/kg	
56-55-3	Benzo(a)anthracene	20.0	40	11	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	40	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	19.1	40	18	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	ND	40	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	40	19	ug/kg	
218-01-9	Chrysene	20.3	40	13	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	40	18	ug/kg	
206-44-0	Fluoranthene	34.3	40	18	ug/kg	J
86-73-7	Fluorene	ND	40	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	40	19	ug/kg	
91-20-3	Naphthalene	ND	40	11	ug/kg	
85-01-8	Phenanthrene	30.7	40	13	ug/kg	J
129-00-0	Pyrene	36.9	40	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		15-114%
321-60-8	2-Fluorobiphenyl	62%		22-104%
1718-51-0	Terphenyl-d14	64%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.16  
4

## Report of Analysis

<b>Client Sample ID:</b> B-8B	<b>Date Sampled:</b> 09/28/20
<b>Lab Sample ID:</b> JD13820-16	<b>Date Received:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 81.7
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.5	2.5	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	8.8	5.0	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	1.5	0.50	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.2	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	38.2	1.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	22.5	6.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	14.0	5.0	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.041	0.041	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	23.3	5.0	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 5.0	5.0	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	1.2	1.2	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.5	2.5	mg/kg	2	09/30/20	10/02/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	73.5	6.2	mg/kg	1	09/30/20	10/01/20	GT	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49395
- (3) Instrument QC Batch: MA49404
- (4) Prep QC Batch: MP23013
- (5) Prep QC Batch: MP23063

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit



**Misc. Forms**

**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody



SO  
SLL

### CHAIN OF CUSTODY

SGS North America Inc. - Dayton  
2235 Route 130, Dayton, NJ 08810  
TEL 732-329-0209 FAX 732-329-3499/3480  
www.sgs.com/ehusa

<b>Client / Reporting Information</b> Company Name: <u>BL Companies</u> Street Address: <u>1100 First Ave Ste 104</u> City: <u>Livermore, PA</u> State: <u>PA</u> Zip: <u>19706</u> Project Contact: <u>Mike McGowan</u> E-mail: <u>mike@blcompanies.com</u> Phone #: <u>856 985 8906</u> Sample(s) Name(s): <u>Community, Enviro</u>		<b>Project Information</b> Project Name: <u>Former TCCA, Oreland PA</u> Street: <u>1725 Walnut Ave</u> City: <u>Oreland, PA</u> State: <u>PA</u> Zip: <u>175438</u> Project #: Client Purchase Order #: Project Manager: <u>A.K. McGowan</u> Attention:		FEDEX Tracking # SGS Case # <u>MB-012320-159</u> SGS Job # <u>JD 13820</u>																	
<b>Requested Analysis</b> <u>PA VOC (VOC6 TOC6)</u> <u>PAH (88.70 PAH)</u> <u>PP Metals (Mn, Pb)</u>		<b>Matrix Codes</b> DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste FB - Field Blank EB - Equipment Blank RB - Rinse Blank IS - Inp. Blank		<b>LAB USE ONLY</b> <u>D54</u> <u>P24</u> <u>14F3</u> <u>U0117</u>																	
Sample #	Field ID / Point of Collection	MEQNDI Val #	Date	Time	Sampled by	Qas (Q) (Cont. Ct)	Matrix	# of bottles	PC	NIOSH	MMS	MSDC	SW/WR	MECH	ENCORE	PA VOC (VOC6 TOC6)	PAH (88.70 PAH)	PP METALS (Mn, Pb)			
1	B-1A		9/28/20	9:30	SES	G	SO	5								X	X	X			
2	B-1B			9:45																	
3	B-2A			10:05																	
4	B-2B			10:20																	
5	B-3A			10:50																	
6	B-3B			11:05																	
7	B-4A			11:30																	
8	B-4B			11:40																	
9	B-5A			12:10																	
10	B-5B			12:20																	
11	B-6A			13:35																	
12	B-6B			13:45																	
Turn Around Time (Business Days)		Approved By (SGS PM) / Date:		Deliverable		Comments / Special Instructions															
<input type="checkbox"/> 10 Business Days <input checked="" type="checkbox"/> 5 Business Days <u>Standard</u> <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 2 Business Days <input type="checkbox"/> 1 Business Day <input type="checkbox"/> Other		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NJ Reduced (Level 3) <input type="checkbox"/> Full Tier 1 (Level 4) <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ DKQP		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> MA MCP Criteria <input type="checkbox"/> CT RCP Criteria <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format		<input type="checkbox"/> DOD-GSM5 • 3 x 5g gram ENCORE Initial Assessment <u>3A/cg</u> Label Verification _____															
Requisitioned by: <u>Stan Anton</u> Date / Time: <u>9/28 7:15</u> Requisitioned by: <u>Robin Perry</u> Date / Time: <u>9/29 1:30</u> Requisitioned by: <u>Robin Perry</u> Date / Time: <u>9/29 3:0</u> Requisitioned by: <u>Robin Perry</u> Date / Time: <u>9/29 3:0</u>		Approved By (SGS PM) / Date: Approved By (SGS PM) / Date: Approved By (SGS PM) / Date:		Sample Custody must be documented below each time sample change possession, including courier delivery.		Requisitioned By: <u>Robin Perry</u> Date / Time: <u>9/29 1:30</u> Requisitioned By: <u>Robin Perry</u> Date / Time: <u>9/29 3:0</u> Requisitioned By: <u>Robin Perry</u> Date / Time: <u>9/29 3:0</u> Requisitioned By: <u>Robin Perry</u> Date / Time: <u>9/29 3:0</u>		Custody Seal # _____ Intact _____ _____ Not Intact _____ Preserved where applicable _____ _____ Absent _____ Therm. ID: <u>1-2 CIP</u>													

5.1  
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EHSA-QAC-0023-02-FORM-Dayton - Standard COC.doc





CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08510
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/en/usa

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Turn Around Time, Deliverables, and Chain of Custody table with sample details and signatures.

5.1
5



## SGS Sample Receipt Summary

Job Number: JD13820

Client: BL COMPANIES

Project: FORMER TCCA, ORELAND, PA

Date / Time Received: 9/29/2020 1:30:00 PM

Delivery Method: \_\_\_\_\_

Airbill #s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (1.2);

Cooler Temps (Corrected) °C: Cooler 1: (0.9);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 229517	pH 12+: 208717	Other: (Specify) _____
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Comments

SM089-03  
Rev. Date 12/7/17

JD13820: Chain of Custody

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## MS Volatiles

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## QC Data Summaries

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### Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8312-MB	Y190535.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	8.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
76-13-1	Freon 113	ND	5.0	2.7	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
79-20-9	Methyl Acetate	ND	5.0	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.0	0.88	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	

# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8312-MB	Y190535.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
100-42-5	Styrene	ND	2.0	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	106%	72-130%
17060-07-0	1,2-Dichloroethane-D4	102%	75-131%
2037-26-5	Toluene-D8	100%	81-121%
460-00-4	4-Bromofluorobenzene	100%	60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	39	ug/kg	J
	system artifact	3.77	11	ug/kg	J
	system artifact	3.89	80	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

## Method Blank Summary

Job Number: JD13820  
Account: BLNJCH BL Companies  
Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9484-MB	I234264.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	8.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
76-13-1	Freon 113	ND	5.0	2.7	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
79-20-9	Methyl Acetate	ND	5.0	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.0	0.88	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	



# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9484-MB	I234264.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
100-42-5	Styrene	ND	2.0	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	99% 75-127%
17060-07-0	1,2-Dichloroethane-D4	94% 75-130%
2037-26-5	Toluene-D8	98% 80-120%
460-00-4	4-Bromofluorobenzene	98% 79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

6.1.2  
6

# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7606-MB	1C174114.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	8.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
76-13-1	Freon 113	ND	5.0	2.7	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
79-20-9	Methyl Acetate	ND	5.0	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.0	0.88	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	

# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7606-MB	1C174114.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
100-42-5	Styrene	ND	2.0	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	108% 75-127%
17060-07-0	1,2-Dichloroethane-D4	110% 75-130%
2037-26-5	Toluene-D8	102% 80-120%
460-00-4	4-Bromofluorobenzene	108% 79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

# Blank Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8312-BS	Y190533.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	229	115	67-130
71-43-2	Benzene	50	52.0	104	80-115
74-97-5	Bromochloromethane	50	55.0	110	82-121
75-27-4	Bromodichloromethane	50	50.6	101	83-121
75-25-2	Bromoform	50	53.7	107	80-141
74-83-9	Bromomethane	50	51.6	103	56-146
78-93-3	2-Butanone (MEK)	200	232	116	72-134
75-15-0	Carbon disulfide	50	52.3	105	65-125
56-23-5	Carbon tetrachloride	50	51.8	104	75-126
108-90-7	Chlorobenzene	50	49.7	99	81-115
75-00-3	Chloroethane	50	52.2	104	72-133
67-66-3	Chloroform	50	52.0	104	75-114
74-87-3	Chloromethane	50	53.4	107	57-135
110-82-7	Cyclohexane	50	51.8	104	73-126
96-12-8	1,2-Dibromo-3-chloropropane	50	53.6	107	72-129
124-48-1	Dibromochloromethane	50	51.8	104	82-133
106-93-4	1,2-Dibromoethane	50	53.0	106	81-126
95-50-1	1,2-Dichlorobenzene	50	51.6	103	83-114
541-73-1	1,3-Dichlorobenzene	50	50.2	100	81-112
106-46-7	1,4-Dichlorobenzene	50	50.6	101	79-113
75-71-8	Dichlorodifluoromethane	50	56.7	113	50-150
75-34-3	1,1-Dichloroethane	50	54.2	108	75-120
107-06-2	1,2-Dichloroethane	50	49.1	98	72-117
75-35-4	1,1-Dichloroethene	50	51.1	102	69-124
156-59-2	cis-1,2-Dichloroethene	50	52.1	104	73-119
156-60-5	trans-1,2-Dichloroethene	50	54.2	108	70-123
78-87-5	1,2-Dichloropropane	50	53.7	107	80-118
10061-01-5	cis-1,3-Dichloropropene	50	52.4	105	83-121
10061-02-6	trans-1,3-Dichloropropene	50	55.4	111	83-125
100-41-4	Ethylbenzene	50	49.6	99	80-114
76-13-1	Freon 113	50	52.6	105	69-130
591-78-6	2-Hexanone	200	223	112	77-126
98-82-8	Isopropylbenzene	50	52.7	105	76-121
79-20-9	Methyl Acetate	50	55.2	110	63-132
108-87-2	Methylcyclohexane	50	52.7	105	73-125
1634-04-4	Methyl Tert Butyl Ether	50	53.4	107	76-127

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8312-BS	Y190533.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	200	232	116	75-129
75-09-2	Methylene chloride	50	51.8	104	71-120
100-42-5	Styrene	50	52.3	105	83-118
79-34-5	1,1,2,2-Tetrachloroethane	50	49.8	100	76-120
127-18-4	Tetrachloroethene	50	50.3	101	75-125
108-88-3	Toluene	50	52.3	105	79-115
87-61-6	1,2,3-Trichlorobenzene	50	58.0	116	75-131
120-82-1	1,2,4-Trichlorobenzene	50	57.3	115	76-130
71-55-6	1,1,1-Trichloroethane	50	51.7	103	77-122
79-00-5	1,1,2-Trichloroethane	50	53.0	106	82-119
79-01-6	Trichloroethene	50	52.9	106	82-119
75-69-4	Trichlorofluoromethane	50	49.9	100	70-134
75-01-4	Vinyl chloride	50	53.0	106	60-139
	m,p-Xylene	100	104	104	81-115
95-47-6	o-Xylene	50	53.1	106	82-117
1330-20-7	Xylene (total)	150	158	105	81-116

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	72-130%
17060-07-0	1,2-Dichloroethane-D4	99%	75-131%
2037-26-5	Toluene-D8	100%	81-121%
460-00-4	4-Bromofluorobenzene	95%	60-141%

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9484-BS	I234262.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	206	103	48-149
71-43-2	Benzene	50	50.0	100	74-117
74-97-5	Bromochloromethane	50	50.8	102	82-121
75-27-4	Bromodichloromethane	50	45.8	92	78-119
75-25-2	Bromoform	50	49.4	99	76-130
74-83-9	Bromomethane	50	51.1	102	58-137
78-93-3	2-Butanone (MEK)	200	229	115	65-143
75-15-0	Carbon disulfide	50	47.0	94	66-140
56-23-5	Carbon tetrachloride	50	45.4	91	69-136
108-90-7	Chlorobenzene	50	49.8	100	79-117
75-00-3	Chloroethane	50	54.4	109	62-139
67-66-3	Chloroform	50	46.3	93	76-119
74-87-3	Chloromethane	50	48.1	96	52-144
110-82-7	Cyclohexane	50	50.4	101	64-136
96-12-8	1,2-Dibromo-3-chloropropane	50	51.3	103	72-124
124-48-1	Dibromochloromethane	50	48.8	98	78-122
106-93-4	1,2-Dibromoethane	50	51.9	104	80-116
95-50-1	1,2-Dichlorobenzene	50	47.6	95	77-117
541-73-1	1,3-Dichlorobenzene	50	48.8	98	75-117
106-46-7	1,4-Dichlorobenzene	50	47.6	95	76-115
75-71-8	Dichlorodifluoromethane	50	51.1	102	43-156
75-34-3	1,1-Dichloroethane	50	46.8	94	75-124
107-06-2	1,2-Dichloroethane	50	44.5	89	74-124
75-35-4	1,1-Dichloroethene	50	47.9	96	64-129
156-59-2	cis-1,2-Dichloroethene	50	46.2	92	74-118
156-60-5	trans-1,2-Dichloroethene	50	48.8	98	71-125
78-87-5	1,2-Dichloropropane	50	48.5	97	80-119
10061-01-5	cis-1,3-Dichloropropene	50	49.2	98	80-119
10061-02-6	trans-1,3-Dichloropropene	50	51.0	102	78-119
100-41-4	Ethylbenzene	50	50.1	100	75-118
76-13-1	Freon 113	50	47.1	94	60-181
591-78-6	2-Hexanone	200	210	105	63-138
98-82-8	Isopropylbenzene	50	50.4	101	74-122
79-20-9	Methyl Acetate	50	53.2	106	61-140
108-87-2	Methylcyclohexane	50	44.9	90	67-136
1634-04-4	Methyl Tert Butyl Ether	50	47.6	95	75-123

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9484-BS	I234262.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	200	200	100	73-136
75-09-2	Methylene chloride	50	50.0	100	73-120
100-42-5	Styrene	50	52.8	106	78-120
79-34-5	1,1,2,2-Tetrachloroethane	50	51.2	102	72-120
127-18-4	Tetrachloroethene	50	49.4	99	69-128
108-88-3	Toluene	50	49.4	99	74-117
87-61-6	1,2,3-Trichlorobenzene	50	51.5	103	72-133
120-82-1	1,2,4-Trichlorobenzene	50	49.8	100	73-132
71-55-6	1,1,1-Trichloroethane	50	46.3	93	73-131
79-00-5	1,1,2-Trichloroethane	50	50.4	101	79-117
79-01-6	Trichloroethene	50	49.1	98	80-120
75-69-4	Trichlorofluoromethane	50	46.3	93	63-141
75-01-4	Vinyl chloride	50	51.1	102	55-145
	m,p-Xylene	100	101	101	75-120
95-47-6	o-Xylene	50	51.5	103	75-119
1330-20-7	Xylene (total)	150	152	101	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	75-127%
17060-07-0	1,2-Dichloroethane-D4	90%	75-130%
2037-26-5	Toluene-D8	101%	80-120%
460-00-4	4-Bromofluorobenzene	96%	79-127%

\* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7606-BS	1C174111.D	1	10/02/20	PS	n/a	n/a	V1C7606
V1C7606-BSD	1C174112.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	233	117	237	119	2	48-149/30
71-43-2	Benzene	50	52.9	106	53.3	107	1	74-117/20
74-97-5	Bromochloromethane	50	55.5	111	55.3	111	0	82-121/20
75-27-4	Bromodichloromethane	50	48.9	98	48.9	98	0	78-119/20
75-25-2	Bromoform	50	50.0	100	50.8	102	2	76-130/20
74-83-9	Bromomethane	50	76.3	153* a	78.0	156* a	2	58-137/20
78-93-3	2-Butanone (MEK)	200	246	123	247	124	0	65-143/20
75-15-0	Carbon disulfide	50	61.9	124	62.2	124	0	66-140/21
56-23-5	Carbon tetrachloride	50	58.4	117	58.3	117	0	69-136/20
108-90-7	Chlorobenzene	50	51.8	104	51.9	104	0	79-117/20
75-00-3	Chloroethane	50	56.4	113	57.4	115	2	62-139/20
67-66-3	Chloroform	50	54.0	108	53.5	107	1	76-119/20
74-87-3	Chloromethane	50	41.9	84	43.5	87	4	52-144/22
110-82-7	Cyclohexane	50	60.4	121	59.2	118	2	64-136/20
96-12-8	1,2-Dibromo-3-chloropropane	50	55.2	110	55.6	111	1	72-124/20
124-48-1	Dibromochloromethane	50	52.1	104	51.8	104	1	78-122/20
106-93-4	1,2-Dibromoethane	50	52.7	105	53.0	106	1	80-116/20
95-50-1	1,2-Dichlorobenzene	50	50.6	101	51.3	103	1	77-117/20
541-73-1	1,3-Dichlorobenzene	50	50.5	101	50.6	101	0	75-117/20
106-46-7	1,4-Dichlorobenzene	50	48.5	97	49.2	98	1	76-115/20
75-71-8	Dichlorodifluoromethane	50	53.5	107	53.4	107	0	43-156/22
75-34-3	1,1-Dichloroethane	50	58.3	117	57.7	115	1	75-124/20
107-06-2	1,2-Dichloroethane	50	53.3	107	52.8	106	1	74-124/20
75-35-4	1,1-Dichloroethene	50	55.5	111	55.4	111	0	64-129/25
156-59-2	cis-1,2-Dichloroethene	50	55.2	110	55.2	110	0	74-118/20
156-60-5	trans-1,2-Dichloroethene	50	53.3	107	52.9	106	1	71-125/20
78-87-5	1,2-Dichloropropane	50	51.2	102	50.7	101	1	80-119/20
10061-01-5	cis-1,3-Dichloropropene	50	50.3	101	49.9	100	1	80-119/20
10061-02-6	trans-1,3-Dichloropropene	50	55.7	111	55.9	112	0	78-119/20
100-41-4	Ethylbenzene	50	52.4	105	53.2	106	2	75-118/20
76-13-1	Freon 113	50	54.3	109	55.4	111	2	60-181/23
591-78-6	2-Hexanone	200	228	114	231	116	1	63-138/20
98-82-8	Isopropylbenzene	50	51.7	103	52.1	104	1	74-122/20
79-20-9	Methyl Acetate	50	58.3	117	59.5	119	2	61-140/23
108-87-2	Methylcyclohexane	50	50.8	102	50.9	102	0	67-136/20
1634-04-4	Methyl Tert Butyl Ether	50	59.5	119	59.7	119	0	75-123/21

\* = Outside of Control Limits.



# Blank Spike/Blank Spike Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7606-BS	1C174111.D	1	10/02/20	PS	n/a	n/a	V1C7606
V1C7606-BSD	1C174112.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples: Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
108-10-1	4-Methyl-2-pentanone(MIBK)	200	203	102	205	103	1	73-136/20
75-09-2	Methylene chloride	50	54.6	109	54.4	109	0	73-120/20
100-42-5	Styrene	50	53.7	107	54.0	108	1	78-120/20
79-34-5	1,1,2,2-Tetrachloroethane	50	53.2	106	53.4	107	0	72-120/20
127-18-4	Tetrachloroethene	50	50.2	100	50.6	101	1	69-128/20
108-88-3	Toluene	50	53.4	107	54.6	109	2	74-117/20
87-61-6	1,2,3-Trichlorobenzene	50	48.0	96	48.5	97	1	72-133/20
120-82-1	1,2,4-Trichlorobenzene	50	47.5	95	48.2	96	1	73-132/20
71-55-6	1,1,1-Trichloroethane	50	56.7	113	57.2	114	1	73-131/18
79-00-5	1,1,2-Trichloroethane	50	52.9	106	51.8	104	2	79-117/20
79-01-6	Trichloroethene	50	47.5	95	47.9	96	1	80-120/20
75-69-4	Trichlorofluoromethane	50	55.6	111	56.0	112	1	63-141/20
75-01-4	Vinyl chloride	50	47.1	94	48.9	98	4	55-145/23
	m,p-Xylene	100	106	106	107	107	1	75-120/20
95-47-6	o-Xylene	50	53.9	108	53.5	107	1	75-119/20
1330-20-7	Xylene (total)	150	160	107	161	107	1	76-119/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	107%	75-127%
17060-07-0	1,2-Dichloroethane-D4	110%	110%	75-130%
2037-26-5	Toluene-D8	103%	103%	80-120%
460-00-4	4-Bromofluorobenzene	106%	107%	79-127%

(a) High percent recovery and no associated positive reported in the QC batch.

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13860-1MS	Y190542.D	1	10/03/20	PS	n/a	n/a	VY8312
JD13860-1	Y190536.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	JD13860-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
67-64-1	Acetone	ND	170	161	95	31-142
71-43-2	Benzene	ND	42.5	43.0	101	62-126
74-97-5	Bromochloromethane	ND	42.5	43.0	101	68-125
75-27-4	Bromodichloromethane	ND	42.5	38.7	91	63-132
75-25-2	Bromoform	ND	42.5	37.4	88	59-138
74-83-9	Bromomethane	ND	42.5	42.9	101	13-164
78-93-3	2-Butanone (MEK)	ND	170	157	92	51-135
75-15-0	Carbon disulfide	ND	42.5	47.5	112	49-134
56-23-5	Carbon tetrachloride	ND	42.5	46.7	110	60-133
108-90-7	Chlorobenzene	ND	42.5	39.4	93	58-126
75-00-3	Chloroethane	ND	42.5	45.0	106	18-165
67-66-3	Chloroform	ND	42.5	43.2	102	60-125
74-87-3	Chloromethane	ND	42.5	45.3	106	43-145
110-82-7	Cyclohexane	ND	42.5	45.9	108	50-136
96-12-8	1,2-Dibromo-3-chloropropane	ND	42.5	36.8	86	43-133
124-48-1	Dibromochloromethane	ND	42.5	37.7	89	68-131
106-93-4	1,2-Dibromoethane	ND	42.5	37.2	87	63-127
95-50-1	1,2-Dichlorobenzene	ND	42.5	39.3	92	46-130
541-73-1	1,3-Dichlorobenzene	ND	42.5	39.7	93	45-129
106-46-7	1,4-Dichlorobenzene	ND	42.5	39.3	92	43-129
75-71-8	Dichlorodifluoromethane	ND	42.5	50.3	118	35-157
75-34-3	1,1-Dichloroethane	ND	42.5	46.1	108	63-130
107-06-2	1,2-Dichloroethane	ND	42.5	35.7	84	61-118
75-35-4	1,1-Dichloroethene	ND	42.5	45.5	107	55-135
156-59-2	cis-1,2-Dichloroethene	ND	42.5	42.8	101	55-131
156-60-5	trans-1,2-Dichloroethene	ND	42.5	47.5	112	54-135
78-87-5	1,2-Dichloropropane	ND	42.5	41.6	98	68-123
10061-01-5	cis-1,3-Dichloropropene	ND	42.5	38.6	91	65-123
10061-02-6	trans-1,3-Dichloropropene	ND	42.5	40.1	94	63-128
100-41-4	Ethylbenzene	ND	42.5	40.7	96	48-135
76-13-1	Freon 113	ND	42.5	47.9	113	51-138
591-78-6	2-Hexanone	ND	170	143	84	55-127
98-82-8	Isopropylbenzene	ND	42.5	42.7	100	46-139
79-20-9	Methyl Acetate	ND	42.5	38.8	91	28-170
108-87-2	Methylcyclohexane	ND	42.5	43.6	102	33-145
1634-04-4	Methyl Tert Butyl Ether	ND	42.5	37.2	87	62-128

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13860-1MS	Y190542.D	1	10/03/20	PS	n/a	n/a	VY8312
JD13860-1	Y190536.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	JD13860-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	170	153	90	59-125
75-09-2	Methylene chloride	ND	42.5	41.7	98	59-127
100-42-5	Styrene	ND	42.5	40.7	96	52-136
79-34-5	1,1,2,2-Tetrachloroethane	ND	42.5	34.9	82	53-127
127-18-4	Tetrachloroethene	ND	42.5	43.2	102	50-138
108-88-3	Toluene	ND	42.5	43.2	102	57-129
87-61-6	1,2,3-Trichlorobenzene	ND	42.5	40.7	96	13-152
120-82-1	1,2,4-Trichlorobenzene	ND	42.5	41.6	98	15-153
71-55-6	1,1,1-Trichloroethane	ND	42.5	45.5	107	60-134
79-00-5	1,1,2-Trichloroethane	ND	42.5	39.3	92	56-137
79-01-6	Trichloroethene	ND	42.5	46.3	109	52-144
75-69-4	Trichlorofluoromethane	ND	42.5	45.7	107	48-144
75-01-4	Vinyl chloride	ND	42.5	48.0	113	44-152
	m,p-Xylene	ND	85.1	85.3	100	53-130
95-47-6	o-Xylene	ND	42.5	42.4	100	52-135
1330-20-7	Xylene (total)	ND	128	128	100	54-131

CAS No.	Surrogate Recoveries	MS	JD13860-1	Limits
1868-53-7	Dibromofluoromethane	105%	113%	72-130%
17060-07-0	1,2-Dichloroethane-D4	95%	110%	75-131%
2037-26-5	Toluene-D8	100%	99%	81-121%
460-00-4	4-Bromofluorobenzene	95%	100%	60-141%

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-1MS	I234274.D	1	10/01/20	TDN	n/a	n/a	VI9484
JD13820-1	I234265.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	JD13820-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
67-64-1	Acetone	ND	222	155	70	10-157
71-43-2	Benzene	ND	55.5	52.0	94	58-125
74-97-5	Bromochloromethane	ND	55.5	52.9	95	60-127
75-27-4	Bromodichloromethane	ND	55.5	46.1	83	57-128
75-25-2	Bromoform	ND	55.5	49.2	89	48-133
74-83-9	Bromomethane	ND	55.5	45.7	82	31-141
78-93-3	2-Butanone (MEK)	ND	222	194	87	29-146
75-15-0	Carbon disulfide	ND	55.5	49.5	89	47-145
56-23-5	Carbon tetrachloride	ND	55.5	47.9	86	51-143
108-90-7	Chlorobenzene	ND	55.5	51.2	92	54-130
75-00-3	Chloroethane	ND	55.5	46.0	83	22-153
67-66-3	Chloroform	ND	55.5	47.6	86	61-125
74-87-3	Chloromethane	ND	55.5	34.0	61	43-142
110-82-7	Cyclohexane	ND	55.5	43.7	79	37-148
96-12-8	1,2-Dibromo-3-chloropropane	ND	55.5	48.0	87	41-127
124-48-1	Dibromochloromethane	ND	55.5	50.1	90	56-127
106-93-4	1,2-Dibromoethane	ND	55.5	52.4	94	54-121
95-50-1	1,2-Dichlorobenzene	ND	55.5	48.4	87	41-134
541-73-1	1,3-Dichlorobenzene	ND	55.5	48.6	88	41-135
106-46-7	1,4-Dichlorobenzene	ND	55.5	47.7	86	41-133
75-71-8	Dichlorodifluoromethane	ND	55.5	34.2	62	30-153
75-34-3	1,1-Dichloroethane	ND	55.5	45.7	82	61-131
107-06-2	1,2-Dichloroethane	ND	55.5	41.6	75	56-126
75-35-4	1,1-Dichloroethene	ND	55.5	47.6	86	53-132
156-59-2	cis-1,2-Dichloroethene	ND	55.5	48.8	88	57-125
156-60-5	trans-1,2-Dichloroethene	ND	55.5	47.2	85	56-130
78-87-5	1,2-Dichloropropane	ND	55.5	47.4	85	63-126
10061-01-5	cis-1,3-Dichloropropene	ND	55.5	46.4	84	55-126
10061-02-6	trans-1,3-Dichloropropene	ND	55.5	48.6	88	51-126
100-41-4	Ethylbenzene	ND	55.5	50.9	92	49-132
76-13-1	Freon 113	ND	55.5	51.5	93	42-179
591-78-6	2-Hexanone	ND	222	176	79	25-150
98-82-8	Isopropylbenzene	ND	55.5	51.2	92	43-141
79-20-9	Methyl Acetate	ND	55.5	50.0	90	32-158
108-87-2	Methylcyclohexane	ND	55.5	43.4	78	22-158
1634-04-4	Methyl Tert Butyl Ether	ND	55.5	46.7	84	58-123

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-1MS	I234274.D	1	10/01/20	TDN	n/a	n/a	VI9484
JD13820-1	I234265.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	JD13820-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	222	165	74	40-140
75-09-2	Methylene chloride	ND	55.5	52.5	95	57-123
100-42-5	Styrene	ND	55.5	53.6	97	46-139
79-34-5	1,1,2,2-Tetrachloroethane	ND	55.5	46.0	83	44-127
127-18-4	Tetrachloroethene	ND	55.5	53.6	97	39-154
108-88-3	Toluene	ND	55.5	52.4	94	54-127
87-61-6	1,2,3-Trichlorobenzene	ND	55.5	48.2	87	17-151
120-82-1	1,2,4-Trichlorobenzene	ND	55.5	48.9	88	19-153
71-55-6	1,1,1-Trichloroethane	ND	55.5	47.6	86	57-138
79-00-5	1,1,2-Trichloroethane	ND	55.5	50.4	91	53-127
79-01-6	Trichloroethene	ND	55.5	52.9	95	52-140
75-69-4	Trichlorofluoromethane	ND	55.5	41.2	74	46-142
75-01-4	Vinyl chloride	ND	55.5	38.7	70	43-146
	m,p-Xylene	ND	111	109	98	45-137
95-47-6	o-Xylene	ND	55.5	53.8	97	48-135
1330-20-7	Xylene (total)	ND	166	163	98	46-137

CAS No.	Surrogate Recoveries	MS	JD13820-1	Limits
1868-53-7	Dibromofluoromethane	93%	101%	75-127%
17060-07-0	1,2-Dichloroethane-D4	80%	102%	75-130%
2037-26-5	Toluene-D8	97%	100%	80-120%
460-00-4	4-Bromofluorobenzene	96%	100%	79-127%

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-5MS	1C174124.D	1	10/02/20	PS	n/a	n/a	V1C7606
JD13820-5	1C174121.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	JD13820-5 ug/kg	Spike Q	MS ug/kg	MS %	Limits
67-64-1	Acetone	ND	271	271	100	10-157
71-43-2	Benzene	ND	67.7	64.9	96	58-125
74-97-5	Bromochloromethane	ND	67.7	70.3	104	60-127
75-27-4	Bromodichloromethane	ND	67.7	60.8	90	57-128
75-25-2	Bromoform	ND	67.7	60.6	90	48-133
74-83-9	Bromomethane	ND	67.7	96.3	142* a	31-141
78-93-3	2-Butanone (MEK)	ND	271	293	108	29-146
75-15-0	Carbon disulfide	ND	67.7	74.3	110	47-145
56-23-5	Carbon tetrachloride	ND	67.7	70.7	104	51-143
108-90-7	Chlorobenzene	ND	67.7	62.2	92	54-130
75-00-3	Chloroethane	ND	67.7	70.4	104	22-153
67-66-3	Chloroform	ND	67.7	66.8	99	61-125
74-87-3	Chloromethane	ND	67.7	53.0	78	43-142
110-82-7	Cyclohexane	ND	67.7	70.4	104	37-148
96-12-8	1,2-Dibromo-3-chloropropane	ND	67.7	64.0	95	41-127
124-48-1	Dibromochloromethane	ND	67.7	63.9	94	56-127
106-93-4	1,2-Dibromoethane	ND	67.7	64.4	95	54-121
95-50-1	1,2-Dichlorobenzene	ND	67.7	60.0	89	41-134
541-73-1	1,3-Dichlorobenzene	ND	67.7	59.5	88	41-135
106-46-7	1,4-Dichlorobenzene	ND	67.7	57.2	85	41-133
75-71-8	Dichlorodifluoromethane	ND	67.7	64.3	95	30-153
75-34-3	1,1-Dichloroethane	ND	67.7	73.7	109	61-131
107-06-2	1,2-Dichloroethane	ND	67.7	65.7	97	56-126
75-35-4	1,1-Dichloroethene	ND	67.7	69.3	102	53-132
156-59-2	cis-1,2-Dichloroethene	ND	67.7	67.4	100	57-125
156-60-5	trans-1,2-Dichloroethene	ND	67.7	64.7	96	56-130
78-87-5	1,2-Dichloropropane	ND	67.7	62.8	93	63-126
10061-01-5	cis-1,3-Dichloropropene	ND	67.7	60.1	89	55-126
10061-02-6	trans-1,3-Dichloropropene	ND	67.7	66.2	98	51-126
100-41-4	Ethylbenzene	ND	67.7	62.8	93	49-132
76-13-1	Freon 113	ND	67.7	62.8	93	42-179
591-78-6	2-Hexanone	ND	271	268	99	25-150
98-82-8	Isopropylbenzene	ND	67.7	61.1	90	43-141
79-20-9	Methyl Acetate	ND	67.7	72.5	107	32-158
108-87-2	Methylcyclohexane	ND	67.7	53.8	79	22-158
1634-04-4	Methyl Tert Butyl Ether	ND	67.7	74.5	110	58-123

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-5MS	1C174124.D	1	10/02/20	PS	n/a	n/a	V1C7606
JD13820-5	1C174121.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	JD13820-5 ug/kg	Spike Q	MS ug/kg	MS %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	271	240	89	40-140
75-09-2	Methylene chloride	ND	67.7	69.5	103	57-123
100-42-5	Styrene	ND	67.7	64.2	95	46-139
79-34-5	1,1,2,2-Tetrachloroethane	ND	67.7	65.3	96	44-127
127-18-4	Tetrachloroethene	ND	67.7	59.5	88	39-154
108-88-3	Toluene	ND	67.7	64.7	96	54-127
87-61-6	1,2,3-Trichlorobenzene	ND	67.7	52.8	78	17-151
120-82-1	1,2,4-Trichlorobenzene	ND	67.7	53.1	78	19-153
71-55-6	1,1,1-Trichloroethane	ND	67.7	70.7	104	57-138
79-00-5	1,1,2-Trichloroethane	ND	67.7	63.2	93	53-127
79-01-6	Trichloroethene	ND	67.7	57.6	85	52-140
75-69-4	Trichlorofluoromethane	ND	67.7	67.4	100	46-142
75-01-4	Vinyl chloride	ND	67.7	59.5	88	43-146
	m,p-Xylene	ND	135	127	94	45-137
95-47-6	o-Xylene	ND	67.7	64.0	95	48-135
1330-20-7	Xylene (total)	ND	203	191	94	46-137

CAS No.	Surrogate Recoveries	MS	JD13820-5	Limits
1868-53-7	Dibromofluoromethane	109%	111%	75-127%
17060-07-0	1,2-Dichloroethane-D4	109%	114%	75-130%
2037-26-5	Toluene-D8	102%	103%	80-120%
460-00-4	4-Bromofluorobenzene	107%	109%	79-127%

(a) Outside control limits due to matrix interference.

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13860-2DUP	Y190544.D	1	10/03/20	PS	n/a	n/a	VY8312
JD13860-2	Y190537.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	JD13860-2 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	ND	ND		nc		108
71-43-2	Benzene	ND	ND		nc		27
74-97-5	Bromochloromethane	ND	ND		nc		30
75-27-4	Bromodichloromethane	ND	ND		nc		22
75-25-2	Bromoform	ND	ND		nc		30
74-83-9	Bromomethane	ND	ND		nc		6
78-93-3	2-Butanone (MEK)	ND	ND		nc		32
75-15-0	Carbon disulfide	ND	ND		nc		31
56-23-5	Carbon tetrachloride	ND	ND		nc		30
108-90-7	Chlorobenzene	ND	ND		nc		30
75-00-3	Chloroethane	ND	ND		nc		0
67-66-3	Chloroform	ND	ND		nc		30
74-87-3	Chloromethane	ND	ND		nc		30
110-82-7	Cyclohexane	ND	ND		nc		24
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND		nc		30
124-48-1	Dibromochloromethane	ND	ND		nc		1
106-93-4	1,2-Dibromoethane	ND	ND		nc		30
95-50-1	1,2-Dichlorobenzene	ND	ND		nc		30
541-73-1	1,3-Dichlorobenzene	ND	ND		nc		30
106-46-7	1,4-Dichlorobenzene	ND	ND		nc		2
75-71-8	Dichlorodifluoromethane	ND	ND		nc		30
75-34-3	1,1-Dichloroethane	ND	ND		nc		7
107-06-2	1,2-Dichloroethane	ND	ND		nc		7
75-35-4	1,1-Dichloroethene	ND	ND		nc		10
156-59-2	cis-1,2-Dichloroethene	ND	ND		nc		27
156-60-5	trans-1,2-Dichloroethene	ND	ND		nc		16
78-87-5	1,2-Dichloropropane	ND	ND		nc		30
10061-01-5	cis-1,3-Dichloropropene	ND	ND		nc		30
10061-02-6	trans-1,3-Dichloropropene	ND	ND		nc		30
100-41-4	Ethylbenzene	ND	ND		nc		36
76-13-1	Freon 113	ND	ND		nc		1
591-78-6	2-Hexanone	ND	ND		nc		30
98-82-8	Isopropylbenzene	ND	ND		nc		13
79-20-9	Methyl Acetate	ND	ND		nc		15
108-87-2	Methylcyclohexane	ND	ND		nc		28
1634-04-4	Methyl Tert Butyl Ether	ND	ND		nc		11

\* = Outside of Control Limits.



# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13860-2DUP	Y190544.D	1	10/03/20	PS	n/a	n/a	VY8312
JD13860-2	Y190537.D	1	10/03/20	PS	n/a	n/a	VY8312

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	JD13860-2 ug/kg	DUP Q	RPD	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	ND	nc	30
75-09-2	Methylene chloride	ND	ND	nc	31
100-42-5	Styrene	ND	ND	nc	30
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	30
127-18-4	Tetrachloroethene	ND	ND	nc	44
108-88-3	Toluene	ND	ND	nc	39
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	30
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	30
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	9
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	30
79-01-6	Trichloroethene	ND	ND	nc	29
75-69-4	Trichlorofluoromethane	ND	ND	nc	30
75-01-4	Vinyl chloride	ND	ND	nc	14
	m,p-Xylene	ND	ND	nc	39
95-47-6	o-Xylene	ND	ND	nc	36
1330-20-7	Xylene (total)	ND	ND	nc	44

CAS No.	Surrogate Recoveries	DUP	JD13860-2	Limits
1868-53-7	Dibromofluoromethane	116%	113%	72-130%
17060-07-0	1,2-Dichloroethane-D4	111%	107%	75-131%
2037-26-5	Toluene-D8	97%	98%	81-121%
460-00-4	4-Bromofluorobenzene	98%	100%	60-141%

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-2DUP	I234276.D	1	10/01/20	TDN	n/a	n/a	VI9484
JD13820-2	I234266.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	JD13820-2 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	10	J	ND		200* a	40
71-43-2	Benzene	ND		ND		nc	30
74-97-5	Bromochloromethane	ND		ND		nc	30
75-27-4	Bromodichloromethane	ND		ND		nc	30
75-25-2	Bromoform	ND		ND		nc	30
74-83-9	Bromomethane	ND		ND		nc	30
78-93-3	2-Butanone (MEK)	ND		ND		nc	30
75-15-0	Carbon disulfide	ND		ND		nc	30
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
75-00-3	Chloroethane	ND		ND		nc	30
67-66-3	Chloroform	ND		ND		nc	30
74-87-3	Chloromethane	ND		ND		nc	30
110-82-7	Cyclohexane	ND		ND		nc	30
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	30
124-48-1	Dibromochloromethane	ND		ND		nc	30
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	30
75-71-8	Dichlorodifluoromethane	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	30
75-35-4	1,1-Dichloroethene	ND		ND		nc	30
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	30
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	30
78-87-5	1,2-Dichloropropane	ND		ND		nc	30
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	30
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
76-13-1	Freon 113	ND		ND		nc	30
591-78-6	2-Hexanone	ND		ND		nc	30
98-82-8	Isopropylbenzene	ND		ND		nc	30
79-20-9	Methyl Acetate	ND		ND		nc	30
108-87-2	Methylcyclohexane	ND		ND		nc	30
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-2DUP	I234276.D	1	10/01/20	TDN	n/a	n/a	VI9484
JD13820-2	I234266.D	1	10/01/20	TDN	n/a	n/a	VI9484

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-1, JD13820-2, JD13820-3, JD13820-4

CAS No.	Compound	JD13820-2 ug/kg	DUP Q	Q	RPD	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	ND	nc		30
75-09-2	Methylene chloride	ND	ND	nc		36
100-42-5	Styrene	ND	ND	nc		30
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc		30
127-18-4	Tetrachloroethene	ND	ND	nc		30
108-88-3	Toluene	ND	ND	nc		24
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc		30
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc		30
71-55-6	1,1,1-Trichloroethane	ND	ND	nc		30
79-00-5	1,1,2-Trichloroethane	ND	ND	nc		30
79-01-6	Trichloroethene	ND	ND	nc		30
75-69-4	Trichlorofluoromethane	ND	ND	nc		30
75-01-4	Vinyl chloride	ND	ND	nc		30
	m,p-Xylene	ND	ND	nc		32
95-47-6	o-Xylene	ND	ND	nc		30
1330-20-7	Xylene (total)	ND	ND	nc		33

CAS No.	Surrogate Recoveries	DUP	JD13820-2	Limits
1868-53-7	Dibromofluoromethane	97%	104%	75-127%
17060-07-0	1,2-Dichloroethane-D4	92%	104%	75-130%
2037-26-5	Toluene-D8	97%	100%	80-120%
460-00-4	4-Bromofluorobenzene	99%	102%	79-127%

(a) RPD acceptable due to low DUP and sample concentrations.

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-6DUP	1C174126.D	1	10/02/20	PS	n/a	n/a	V1C7606
JD13820-6	1C174122.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	JD13820-6 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	5.8	J	ND		200* a	40
71-43-2	Benzene	ND		ND		nc	30
74-97-5	Bromochloromethane	ND		ND		nc	30
75-27-4	Bromodichloromethane	ND		ND		nc	30
75-25-2	Bromoform	ND		ND		nc	30
74-83-9	Bromomethane	ND		ND		nc	30
78-93-3	2-Butanone (MEK)	ND		ND		nc	30
75-15-0	Carbon disulfide	ND		ND		nc	30
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
75-00-3	Chloroethane	ND		ND		nc	30
67-66-3	Chloroform	ND		ND		nc	30
74-87-3	Chloromethane	ND		ND		nc	30
110-82-7	Cyclohexane	ND		ND		nc	30
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	30
124-48-1	Dibromochloromethane	ND		ND		nc	30
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	30
75-71-8	Dichlorodifluoromethane	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	30
75-35-4	1,1-Dichloroethene	ND		ND		nc	30
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	30
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	30
78-87-5	1,2-Dichloropropane	ND		ND		nc	30
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	30
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
76-13-1	Freon 113	ND		ND		nc	30
591-78-6	2-Hexanone	ND		ND		nc	30
98-82-8	Isopropylbenzene	ND		ND		nc	30
79-20-9	Methyl Acetate	ND		ND		nc	30
108-87-2	Methylcyclohexane	ND		ND		nc	30
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13820-6DUP	1C174126.D	1	10/02/20	PS	n/a	n/a	V1C7606
JD13820-6	1C174122.D	1	10/02/20	PS	n/a	n/a	V1C7606

The QC reported here applies to the following samples:

Method: SW846 8260D

JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13

CAS No.	Compound	JD13820-6 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		ND		nc	30
75-09-2	Methylene chloride	ND		ND		nc	36
100-42-5	Styrene	ND		ND		nc	30
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	30
127-18-4	Tetrachloroethene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	24
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	30
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	30
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	30
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	30
79-01-6	Trichloroethene	ND		ND		nc	30
75-69-4	Trichlorofluoromethane	ND		ND		nc	30
75-01-4	Vinyl chloride	ND		ND		nc	30
	m,p-Xylene	ND		ND		nc	32
95-47-6	o-Xylene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	33

CAS No.	Surrogate Recoveries	DUP	JD13820-6	Limits
1868-53-7	Dibromofluoromethane	113%	108%	75-127%
17060-07-0	1,2-Dichloroethane-D4	114%	115%	75-130%
2037-26-5	Toluene-D8	101%	101%	80-120%
460-00-4	4-Bromofluorobenzene	108%	106%	79-127%

(a) RPD acceptable due to low DUP and sample concentrations.

\* = Outside of Control Limits.

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: V1C7603-BFB	Injection Date: 09/29/20
Lab File ID: 1C174041.D	Injection Time: 16:36
Instrument ID: GCMS1C	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	25669	23.7	Pass
75	30.0 - 60.0% of mass 95	56277	52.0	Pass
95	Base peak, 100% relative abundance	108200	100.0	Pass
96	5.0 - 9.0% of mass 95	6833	6.32	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	96709	89.4	Pass
175	5.0 - 9.0% of mass 174	6799	6.28 (7.03) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	94026	86.9 (97.2) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	6429	5.94 (6.84) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7603-IC7603	1C174042.D	09/29/20	17:11	00:35	Initial cal 0.2
V1C7603-IC7603	1C174043.D	09/29/20	17:38	01:02	Initial cal 0.5
V1C7603-IC7603	1C174044.D	09/29/20	18:06	01:30	Initial cal 1
V1C7603-IC7603	1C174045.D	09/29/20	18:34	01:58	Initial cal 2
V1C7603-IC7603	1C174046.D	09/29/20	19:02	02:26	Initial cal 4
V1C7603-IC7603	1C174047.D	09/29/20	19:30	02:54	Initial cal 8
V1C7603-IC7603	1C174048.D	09/29/20	19:58	03:22	Initial cal 20
V1C7603-ICC7603	1C174049.D	09/29/20	20:26	03:50	Initial cal 50
V1C7603-IC7603	1C174050.D	09/29/20	20:54	04:18	Initial cal 100
V1C7603-IC7603	1C174051.D	09/29/20	21:22	04:46	Initial cal 200
V1C7603-ICV7603	1C174054.D	09/29/20	22:47	06:11	Initial cal verification 50
V1C7603-ICV7603	1C174055.D	09/29/20	23:15	06:39	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: V1C7603-BFB2	Injection Date: 09/30/20
Lab File ID: 1C174057.D	Injection Time: 10:37
Instrument ID: GCMS1C	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	21306	22.0	Pass
75	30.0 - 60.0% of mass 95	48928	50.4	Pass
95	Base peak, 100% relative abundance	97064	100.0	Pass
96	5.0 - 9.0% of mass 95	6684	6.89	Pass
173	Less than 2.0% of mass 174	450	0.46 (0.45) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	99077	102.1	Pass
175	5.0 - 9.0% of mass 174	7179	7.40 (7.25) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	95325	98.2 (96.2) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	6321	6.51 (6.63) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7603-ICV7603	1C174058.D	09/30/20	11:03	00:26	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	V1C7606-BFB	Injection Date:	10/02/20
Lab File ID:	1C174109.D	Injection Time:	08:58
Instrument ID:	GCMS1C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	34837	22.3	Pass
75	30.0 - 60.0% of mass 95	81653	52.2	Pass
95	Base peak, 100% relative abundance	156459	100.0	Pass
96	5.0 - 9.0% of mass 95	10739	6.86	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	129611	82.8	Pass
175	5.0 - 9.0% of mass 174	9350	5.98 (7.21) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	124323	79.5 (95.9) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	8141	5.20 (6.55) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7606-CC7603	1C174109.D	10/02/20	08:58	00:00	Continuing cal 50
V1C7606-BS	1C174111.D	10/02/20	09:51	00:53	Blank Spike
V1C7606-BSD	1C174112.D	10/02/20	10:18	01:20	Blank Spike Duplicate
ZZZZZZ	1C174114A.D	10/02/20	11:12	02:14	(unrelated sample)
V1C7606-MB	1C174114.D	10/02/20	11:12	02:14	Method Blank
ZZZZZZ	1C174115.D	10/02/20	11:39	02:41	(unrelated sample)
ZZZZZZ	1C174116.D	10/02/20	12:06	03:08	(unrelated sample)
ZZZZZZ	1C174117.D	10/02/20	12:33	03:35	(unrelated sample)
ZZZZZZ	1C174118.D	10/02/20	13:00	04:02	(unrelated sample)
ZZZZZZ	1C174119.D	10/02/20	13:27	04:29	(unrelated sample)
ZZZZZZ	1C174120.D	10/02/20	13:54	04:56	(unrelated sample)
JD13820-5	1C174121.D	10/02/20	14:26	05:28	B-3A
JD13820-6	1C174122.D	10/02/20	14:48	05:50	B-3B
JD13820-7	1C174123.D	10/02/20	15:15	06:17	B-4A
JD13820-5MS	1C174124.D	10/02/20	15:42	06:44	Matrix Spike
JD13820-6DUP	1C174126.D	10/02/20	16:36	07:38	Duplicate
JD13820-8	1C174127.D	10/02/20	17:03	08:05	B-4B
JD13820-9	1C174128.D	10/02/20	17:30	08:32	B-5A
JD13820-11	1C174129.D	10/02/20	17:57	08:59	B-6A
JD13820-12	1C174130.D	10/02/20	18:24	09:26	B-6B
JD13820-13	1C174131.D	10/02/20	18:50	09:52	B-7A
JD13820-10	1C174132.D	10/02/20	19:18	10:20	B-5B



# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VI9471-BFB	Injection Date: 09/16/20
Lab File ID: I233969.D	Injection Time: 18:04
Instrument ID: GCMSI	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	10393	19.2	Pass
75	30.0 - 60.0% of mass 95	26125	48.3	Pass
95	Base peak, 100% relative abundance	54093	100.0	Pass
96	5.0 - 9.0% of mass 95	3479	6.43	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	55744	103.1	Pass
175	5.0 - 9.0% of mass 174	4055	7.50 (7.27) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	53389	98.7 (95.8) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	3610	6.67 (6.76) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI9471-IC9471	I233970.D	09/16/20	18:44	00:40	Initial cal 0.2
VI9471-IC9471	I233971.D	09/16/20	19:13	01:09	Initial cal 0.5
VI9471-IC9471	I233972.D	09/16/20	19:43	01:39	Initial cal 1
VI9471-IC9471	I233973.D	09/16/20	20:12	02:08	Initial cal 2
VI9471-IC9471	I233974.D	09/16/20	20:41	02:37	Initial cal 4
VI9471-IC9471	I233975.D	09/16/20	21:10	03:06	Initial cal 8
VI9471-IC9471	I233976.D	09/16/20	21:39	03:35	Initial cal 20
VI9471-ICC9471	I233977.D	09/16/20	22:09	04:05	Initial cal 50
VI9471-IC9471	I233978.D	09/16/20	22:38	04:34	Initial cal 100
VI9471-IC9471	I233979.D	09/16/20	23:07	05:03	Initial cal 200
VI9471-ICV9471	I233982.D	09/17/20	00:35	06:31	Initial cal verification 50
VI9471-ICV9471	I233983.D	09/17/20	01:04	07:00	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VI9484-BFB	Injection Date: 10/01/20
Lab File ID: I234261.D	Injection Time: 10:45
Instrument ID: GCMSI	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	10581	19.3	Pass
75	30.0 - 60.0% of mass 95	26501	48.4	Pass
95	Base peak, 100% relative abundance	54779	100.0	Pass
96	5.0 - 9.0% of mass 95	3695	6.75	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	54157	98.9	Pass
175	5.0 - 9.0% of mass 174	4429	8.09 (8.18) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	52547	95.9 (97.0) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	3739	6.83 (7.12) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI9484-CC9471	I234261.D	10/01/20	10:45	00:00	Continuing cal 50
VI9484-BS	I234262.D	10/01/20	11:20	00:35	Blank Spike
VI9484-MB	I234264.D	10/01/20	12:19	01:34	Method Blank
JD13820-1	I234265.D	10/01/20	12:49	02:04	B-1A
JD13820-2	I234266.D	10/01/20	13:19	02:34	B-1B
JD13820-3	I234267.D	10/01/20	13:49	03:04	B-2A
JD13820-4	I234268.D	10/01/20	14:18	03:33	B-2B
ZZZZZZ	I234269.D	10/01/20	14:48	04:03	(unrelated sample)
ZZZZZZ	I234271.D	10/01/20	15:48	05:03	(unrelated sample)
JD13820-1MS	I234274.D	10/01/20	17:18	06:33	Matrix Spike
JD13820-2DUP	I234276.D	10/01/20	18:17	07:32	Duplicate
ZZZZZZ	I234277.D	10/01/20	18:47	08:02	(unrelated sample)
ZZZZZZ	I234278.D	10/01/20	19:17	08:32	(unrelated sample)
ZZZZZZ	I234279.D	10/01/20	19:47	09:02	(unrelated sample)
ZZZZZZ	I234283.D	10/01/20	21:46	11:01	(unrelated sample)

6.6.5  
6

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VY8281-BFB	Injection Date: 08/26/20
Lab File ID: Y189861.D	Injection Time: 17:25
Instrument ID: GCMSY	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	19866	17.4	Pass
75	30.0 - 60.0% of mass 95	53122	46.4	Pass
95	Base peak, 100% relative abundance	114488	100.0	Pass
96	5.0 - 9.0% of mass 95	7916	6.91	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	91848	80.2	Pass
175	5.0 - 9.0% of mass 174	6914	6.04 (7.53) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	88669	77.4 (96.5) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	5495	4.80 (6.20) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY8281-IC8281	Y189862.D	08/26/20	18:02	00:37	Initial cal 0.2
VY8281-IC8281	Y189863.D	08/26/20	18:31	01:06	Initial cal 0.5
VY8281-IC8281	Y189864.D	08/26/20	19:00	01:35	Initial cal 1
VY8281-IC8281	Y189865.D	08/26/20	19:28	02:03	Initial cal 2
VY8281-IC8281	Y189866.D	08/26/20	19:57	02:32	Initial cal 4
VY8281-IC8281	Y189867.D	08/26/20	20:26	03:01	Initial cal 8
VY8281-IC8281	Y189868.D	08/26/20	20:55	03:30	Initial cal 20
VY8281-ICC8281	Y189869.D	08/26/20	21:24	03:59	Initial cal 50
VY8281-IC8281	Y189870.D	08/26/20	21:53	04:28	Initial cal 100
VY8281-IC8281	Y189871.D	08/26/20	22:21	04:56	Initial cal 200
VY8281-ICV8281	Y189874.D	08/26/20	23:48	06:23	Initial cal verification 50
VY8281-ICV8281	Y189875.D	08/27/20	00:16	06:51	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	VY8312-BFB	Injection Date:	10/03/20
Lab File ID:	Y190532.D	Injection Time:	11:21
Instrument ID:	GCMSY		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	18835	16.4	Pass
75	30.0 - 60.0% of mass 95	53997	47.0	Pass
95	Base peak, 100% relative abundance	114971	100.0	Pass
96	5.0 - 9.0% of mass 95	7701	6.70	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	96667	84.1	Pass
175	5.0 - 9.0% of mass 174	7422	6.46 (7.68) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	94739	82.4 (98.0) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	6546	5.69 (6.91) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY8312-CC8281	Y190532.D	10/03/20	11:21	00:00	Continuing cal 50
VY8312-BS	Y190533.D	10/03/20	11:58	00:37	Blank Spike
VY8312-MB	Y190535.D	10/03/20	13:06	01:45	Method Blank
JD13860-1	Y190536.D	10/03/20	13:35	02:14	(used for QC only; not part of job JD13820)
JD13860-2	Y190537.D	10/03/20	14:04	02:43	(used for QC only; not part of job JD13820)
ZZZZZZ	Y190538.D	10/03/20	14:32	03:11	(unrelated sample)
ZZZZZZ	Y190539.D	10/03/20	15:00	03:39	(unrelated sample)
ZZZZZZ	Y190540.D	10/03/20	15:29	04:08	(unrelated sample)
ZZZZZZ	Y190541.D	10/03/20	15:57	04:36	(unrelated sample)
JD13860-1MS	Y190542.D	10/03/20	16:25	05:04	Matrix Spike
JD13860-2DUP	Y190544.D	10/03/20	17:23	06:02	Duplicate
ZZZZZZ	Y190545.D	10/03/20	17:51	06:30	(unrelated sample)
ZZZZZZ	Y190546.D	10/03/20	18:20	06:59	(unrelated sample)
JD13820-14	Y190547.D	10/03/20	18:49	07:28	B-7B
JD13820-15	Y190548.D	10/03/20	19:17	07:56	B-8A
JD13820-16	Y190549.D	10/03/20	19:46	08:25	B-8B
ZZZZZZ	Y190550.D	10/03/20	20:14	08:53	(unrelated sample)
ZZZZZZ	Y190551.D	10/03/20	20:42	09:21	(unrelated sample)
ZZZZZZ	Y190552.D	10/03/20	21:11	09:50	(unrelated sample)
ZZZZZZ	Y190553.D	10/03/20	21:39	10:18	(unrelated sample)
ZZZZZZ	Y190554.D	10/03/20	22:07	10:46	(unrelated sample)
ZZZZZZ	Y190555.D	10/03/20	22:36	11:15	(unrelated sample)
ZZZZZZ	Y190556.D	10/03/20	23:04	11:43	(unrelated sample)

6.6.7  
6

# Surrogate Recovery Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Method: SW846 8260C	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD13820-14	Y190547.D	115	106	99	97
JD13820-15	Y190548.D	116	107	101	99
JD13820-16	Y190549.D	119	112	100	96
JD13860-1MS	Y190542.D	105	95	100	95
JD13860-2DUP	Y190544.D	116	111	97	98
VY8312-BS	Y190533.D	103	99	100	95
VY8312-MB	Y190535.D	106	102	100	100

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	72-130%
S2 = 1,2-Dichloroethane-D4	75-131%
S3 = Toluene-D8	81-121%
S4 = 4-Bromofluorobenzene	60-141%

6.7.1  
6

# Surrogate Recovery Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Method: SW846 8260D	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD13820-1	I234265.D	101	102	100	100
JD13820-2	I234266.D	104	104	100	102
JD13820-3	I234267.D	103	105	99	103
JD13820-4	I234268.D	105	105	100	104
JD13820-5	1C174121.D	111	114	103	109
JD13820-6	1C174122.D	108	115	101	106
JD13820-7	1C174123.D	112	117	101	109
JD13820-8	1C174127.D	112	115	102	109
JD13820-9	1C174128.D	113	113	101	107
JD13820-10	1C174132.D	113	115	103	109
JD13820-11	1C174129.D	114	116	103	109
JD13820-12	1C174130.D	114	116	101	108
JD13820-13	1C174131.D	115	116	102	109
JD13820-1MS	I234274.D	93	80	97	96
JD13820-2DUP	I234276.D	97	92	97	99
JD13820-5MS	1C174124.D	109	109	102	107
JD13820-6DUP	1C174126.D	113	114	101	108
V1C7606-BS	1C174111.D	109	110	103	106
V1C7606-BSD	1C174112.D	107	110	103	107
V1C7606-MB	1C174114.D	108	110	102	108
VI9484-BS	I234262.D	96	90	101	96
VI9484-MB	I234264.D	99	94	98	98

**Surrogate Compounds**

**Recovery Limits**

S1 = Dibromofluoromethane	75-127%
S2 = 1,2-Dichloroethane-D4	75-130%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	79-127%

6.7.2  
6

## MS Semi-volatiles

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### QC Data Summaries

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**Includes the following where applicable:**

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29781-MB1	P139527.D	1	10/01/20	CS	10/01/20	OP29781	EP6355

The QC reported here applies to the following samples: Method: SW846 8270E

JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
4165-60-0	Nitrobenzene-d5	80%	15-114%
321-60-8	2-Fluorobiphenyl	79%	22-104%
1718-51-0	Terphenyl-d14	85%	23-121%

7.1.1  
7



# Blank Spike/Blank Spike Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29781-BS1	P139528.D	1	10/01/20	CS	10/01/20	OP29781	EP6355
OP29781-BSD	P139529.D	1	10/01/20	CS	10/01/20	OP29781	EP6355

The QC reported here applies to the following samples: Method: SW846 8270E

JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1670	1320	79	1340	80	2	24-129/16
208-96-8	Acenaphthylene	1670	1310	79	1300	78	1	25-130/17
120-12-7	Anthracene	1670	1430	86	1400	84	2	28-131/18
56-55-3	Benzo(a)anthracene	1670	1360	82	1310	79	4	30-130/20
50-32-8	Benzo(a)pyrene	1670	1400	84	1350	81	4	27-139/20
205-99-2	Benzo(b)fluoranthene	1670	1380	83	1340	80	3	32-133/21
191-24-2	Benzo(g,h,i)perylene	1670	1330	80	1290	77	3	24-141/23
207-08-9	Benzo(k)fluoranthene	1670	1350	81	1300	78	4	26-135/21
218-01-9	Chrysene	1670	1360	82	1300	78	5	29-127/20
53-70-3	Dibenzo(a,h)anthracene	1670	1280	77	1230	74	4	24-135/23
206-44-0	Fluoranthene	1670	1440	86	1400	84	3	31-134/23
86-73-7	Fluorene	1670	1360	82	1350	81	1	26-136/18
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1430	86	1380	83	4	26-137/25
91-20-3	Naphthalene	1670	1370	82	1350	81	1	26-127/19
85-01-8	Phenanthrene	1670	1430	86	1410	85	1	26-131/19
129-00-0	Pyrene	1670	1410	85	1360	82	4	30-131/24

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	79%	79%	15-114%
321-60-8	2-Fluorobiphenyl	77%	79%	22-104%
1718-51-0	Terphenyl-d14	80%	79%	23-121%

\* = Outside of Control Limits.

7.2.1  
7

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29781-MS	P139542.D	1	10/02/20	CS	10/01/20	OP29781	EP6355
OP29781-MSD	P139543.D	1	10/02/20	CS	10/01/20	OP29781	EP6355
JD13820-1	P139544.D	1	10/02/20	CS	10/01/20	OP29781	EP6355

The QC reported here applies to the following samples:

Method: SW846 8270E

JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

CAS No.	Compound	JD13820-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	1870	1090	58	1830	1020	56	7	10-145/63
208-96-8	Acenaphthylene	ND	1870	1060	57	1830	1020	56	4	10-144/59
120-12-7	Anthracene	ND	1870	1170	63	1830	1130	62	3	10-153/66
56-55-3	Benzo(a)anthracene	96.6	1870	1140	56	1830	1140	57	0	10-157/71
50-32-8	Benzo(a)pyrene	100	1870	1160	57	1830	1140	57	2	10-164/67
205-99-2	Benzo(b)fluoranthene	140	1870	1200	57	1830	1170	56	3	10-154/69
191-24-2	Benzo(g,h,i)perylene	59.5	1870	1050	53	1830	991	51	6	10-156/64
207-08-9	Benzo(k)fluoranthene	52.1	1870	1120	57	1830	1110	58	1	10-156/62
218-01-9	Chrysene	112	1870	1160	56	1830	1120	55	4	10-148/70
53-70-3	Dibenzo(a,h)anthracene	ND	1870	955	51	1830	899	49	6	10-146/63
206-44-0	Fluoranthene	216	1870	1240	55	1830	1290	59	4	10-171/80
86-73-7	Fluorene	ND	1870	1070	57	1830	1060	58	1	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	61.7	1870	1070	54	1830	1030	53	4	10-152/65
91-20-3	Naphthalene	ND	1870	1160	62	1830	1070	58	8	10-147/64
85-01-8	Phenanthrene	92.6	1870	1220	60	1830	1220	62	0	10-162/81
129-00-0	Pyrene	195	1870	1350	62	1830	1360	64	1	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD13820-1	Limits
4165-60-0	Nitrobenzene-d5	61%	56%	54%	15-114%
321-60-8	2-Fluorobiphenyl	60%	58%	54%	22-104%
1718-51-0	Terphenyl-d14	62%	62%	59%	23-121%

\* = Outside of Control Limits.

7.3.1  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	EP6336-DFTPP	Injection Date:	09/15/20
Lab File ID:	P139189.D	Injection Time:	03:08
Instrument ID:	GCMSP		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	846173	32.8	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	1179029	45.7	Pass
70	Less than 2.0% of mass 69	4428	0.17 (0.38) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	1050300	40.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	2579626	100.0	Pass
199	5.0 - 9.0% of mass 198	166648	6.46	Pass
275	10.0 - 30.0% of mass 198	633621	24.6	Pass
365	1.0 - 100.0% of mass 198	76629	2.97	Pass
441	Present, but less than mass 443	229141	8.88 (73.5) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	1683840	65.3	Pass
443	17.0 - 23.0% of mass 442	311936	12.1 (18.5) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EP6336-IC6336	P139190.D	09/15/20	03:26	00:18	Initial cal 1
EP6336-IC6336	P139191.D	09/15/20	03:52	00:44	Initial cal 2
EP6336-IC6336	P139192.D	09/15/20	04:19	01:11	Initial cal 5
EP6336-IC6336	P139193.D	09/15/20	04:46	01:38	Initial cal 10
EP6336-IC6336	P139194.D	09/15/20	05:12	02:04	Initial cal 25
EP6336-ICC6336	P139195.D	09/15/20	05:39	02:31	Initial cal 50
EP6336-IC6336	P139196.D	09/15/20	06:06	02:58	Initial cal 80
EP6336-IC6336	P139197.D	09/15/20	06:32	03:24	Initial cal 100
EP6336-ICV6336	P139198.D	09/15/20	06:59	03:51	Initial cal verification 50
EP6336-ICV6336	P139199.D	09/15/20	07:26	04:18	Initial cal verification 50
EP6336-ICV6336	P139200.D	09/15/20	07:52	04:44	Initial cal verification 50
EP6336-ICV6336	P139201.D	09/15/20	08:19	05:11	Initial cal verification 50

7.4.1  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	EP6337-DFTPP	Injection Date:	09/15/20
Lab File ID:	P139202.D	Injection Time:	08:42
Instrument ID:	GCMSP		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	889777	33.8	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	1242634	47.2	Pass
70	Less than 2.0% of mass 69	5725	0.22 (0.46) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	1123306	42.6	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	2634752	100.0	Pass
199	5.0 - 9.0% of mass 198	165290	6.27	Pass
275	10.0 - 30.0% of mass 198	629418	23.9	Pass
365	1.0 - 100.0% of mass 198	74594	2.83	Pass
441	Present, but less than mass 443	211512	8.03 (76.2) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	1564096	59.4	Pass
443	17.0 - 23.0% of mass 442	277746	10.5 (17.8) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EP6337-IC6337	P139203.D	09/15/20	08:53	00:11	Initial cal 1
EP6337-IC6337	P139204.D	09/15/20	09:20	00:38	Initial cal 2
EP6337-IC6337	P139205.D	09/15/20	09:46	01:04	Initial cal 5
EP6337-IC6337	P139206.D	09/15/20	10:13	01:31	Initial cal 10
EP6337-IC6337	P139207.D	09/15/20	10:40	01:58	Initial cal 25
EP6337-ICC6337	P139208.D	09/15/20	11:06	02:24	Initial cal 50
EP6337-IC6337	P139209.D	09/15/20	11:33	02:51	Initial cal 80
EP6337-IC6337	P139210.D	09/15/20	12:00	03:18	Initial cal 100
EP6337-ICV6337	P139211.D	09/15/20	12:26	03:44	Initial cal verification 50

7.4.2  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	EP6338-DFTPP	Injection Date:	09/15/20
Lab File ID:	P139212.D	Injection Time:	12:49
Instrument ID:	GCMSP		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	715016	33.6	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	993643	46.8	Pass
70	Less than 2.0% of mass 69	3676	0.17 (0.37) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	918279	43.2	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	2125312	100.0	Pass
199	5.0 - 9.0% of mass 198	135698	6.38	Pass
275	10.0 - 30.0% of mass 198	518848	24.4	Pass
365	1.0 - 100.0% of mass 198	62954	2.96	Pass
441	Present, but less than mass 443	189677	8.92 (78.1) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	1303852	61.3	Pass
443	17.0 - 23.0% of mass 442	242826	11.4 (18.6) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EP6338-IC6338	P139213.D	09/15/20	13:01	00:12	Initial cal 1
EP6338-IC6338	P139214.D	09/15/20	13:28	00:39	Initial cal 2
EP6338-IC6338	P139215.D	09/15/20	13:55	01:06	Initial cal 5
EP6338-IC6338	P139216.D	09/15/20	14:21	01:32	Initial cal 10
EP6338-IC6338	P139217.D	09/15/20	14:48	01:59	Initial cal 25
EP6338-ICC6338	P139218.D	09/15/20	15:15	02:26	Initial cal 50
EP6338-IC6338	P139219.D	09/15/20	15:45	02:56	Initial cal 80
EP6338-IC6338	P139220.D	09/15/20	16:11	03:22	Initial cal 100
EP6338-ICV6338	P139221.D	09/15/20	16:38	03:49	Initial cal verification 50
EP6338-ICV6338	P139222.D	09/15/20	17:05	04:16	Initial cal verification 50
EP6338-ICV6338	P139223.D	09/15/20	17:32	04:43	Initial cal verification 50

7.4.3  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	EP6355-DFTPP	Injection Date:	10/01/20
Lab File ID:	P139525.D	Injection Time:	20:53
Instrument ID:	GCMSP		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	1185540	36.6	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	1644107	50.8	Pass
70	Less than 2.0% of mass 69	7393	0.23 (0.45) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	1567679	48.4	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	3239082	100.0	Pass
199	5.0 - 9.0% of mass 198	208770	6.45	Pass
275	10.0 - 30.0% of mass 198	868629	26.8	Pass
365	1.0 - 100.0% of mass 198	119645	3.69	Pass
441	Present, but less than mass 443	363434	11.2 (77.2) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	2624341	81.0	Pass
443	17.0 - 23.0% of mass 442	470826	14.5 (17.9) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EP6355-CC6336	P139526.D	10/01/20	21:06	00:13	Continuing cal 25
OP29781-MB1	P139527.D	10/01/20	21:35	00:42	Method Blank
OP29781-BS1	P139528.D	10/01/20	22:02	01:09	Blank Spike
OP29781-BSD	P139529.D	10/01/20	22:29	01:36	Blank Spike Duplicate
JD13820-2	P139530.D	10/01/20	22:56	02:03	B-1B
JD13820-3	P139531.D	10/01/20	23:23	02:30	B-2A
JD13820-4	P139532.D	10/01/20	23:50	02:57	B-2B
JD13820-11	P139533.D	10/02/20	00:17	03:24	B-6A
JD13820-13	P139534.D	10/02/20	00:44	03:51	B-7A
JD13820-16	P139535.D	10/02/20	01:12	04:19	B-8B
JD13820-14	P139536.D	10/02/20	01:39	04:46	B-7B
JD13820-9	P139537.D	10/02/20	02:06	05:13	B-5A
JD13820-5	P139538.D	10/02/20	02:33	05:40	B-3A
JD13820-12	P139539.D	10/02/20	03:00	06:07	B-6B
JD13820-8	P139540.D	10/02/20	03:27	06:34	B-4B
OP29781-MS	P139542.D	10/02/20	04:21	07:28	Matrix Spike
OP29781-MSD	P139543.D	10/02/20	04:49	07:56	Matrix Spike Duplicate
JD13820-1	P139544.D	10/02/20	05:16	08:23	B-1A
JD13820-10	P139546.D	10/02/20	06:10	09:17	B-5B

7.4.4  
7

# Instrument Performance Check (DFTPP)

**Job Number:** JD13820  
**Account:** BLNJCH BL Companies  
**Project:** Former TCCA, Oreland, PA

<b>Sample:</b> EP6355-DFTPP	<b>Injection Date:</b> 10/01/20
<b>Lab File ID:</b> P139525.D	<b>Injection Time:</b> 20:53
<b>Instrument ID:</b> GCMSP	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD13820-7	P139547.D	10/02/20	06:37	09:44	B-4A

# Instrument Performance Check (DFTPP)

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	EP6356-DFTPP	Injection Date:	10/02/20
Lab File ID:	P139549.D	Injection Time:	09:49
Instrument ID:	GCMSP		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	1292039	38.7	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	1816207	54.4	Pass
70	Less than 2.0% of mass 69	10437	0.31 (0.57) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	1628693	48.8	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	3337728	100.0	Pass
199	5.0 - 9.0% of mass 198	211346	6.33	Pass
275	10.0 - 30.0% of mass 198	835102	25.0	Pass
365	1.0 - 100.0% of mass 198	107229	3.21	Pass
441	Present, but less than mass 443	306013	9.17 (77.4) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	2219989	66.5	Pass
443	17.0 - 23.0% of mass 442	395554	11.9 (17.8) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EP6356-CC6337	P139551.D	10/02/20	10:27	00:38	Continuing cal 50
EP6356-CC6336	P139552.D	10/02/20	10:54	01:05	Continuing cal 50
EP6356-CC6338	P139553.D	10/02/20	11:21	01:32	Continuing cal 50
OP29782-MB1	P139554.D	10/02/20	11:48	01:59	Method Blank
JD13820-15	P139555.D	10/02/20	12:15	02:26	B-8A
JD13820-10	P139556.D	10/02/20	12:42	02:53	B-5B
JD13820-7	P139557.D	10/02/20	13:08	03:19	B-4A
JD13820-6	P139558.D	10/02/20	13:35	03:46	B-3B
ZZZZZZ	P139559.D	10/02/20	14:02	04:13	(unrelated sample)
ZZZZZZ	P139565.D	10/02/20	16:43	06:54	(unrelated sample)
ZZZZZZ	P139567.D	10/02/20	17:10	07:21	(unrelated sample)
ZZZZZZ	P139568.D	10/02/20	17:37	07:48	(unrelated sample)
ZZZZZZ	P139569.D	10/02/20	18:04	08:15	(unrelated sample)
ZZZZZZ	P139570.D	10/02/20	18:31	08:42	(unrelated sample)
ZZZZZZ	P139571.D	10/02/20	18:58	09:09	(unrelated sample)

7.4.5  
7



# Surrogate Recovery Summary

Job Number: JD13820  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Method: SW846 8270E	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD13820-1	P139544.D	54	54	59
JD13820-2	P139530.D	79	78	80
JD13820-3	P139531.D	65	64	66
JD13820-4	P139532.D	39	39	38
JD13820-5	P139538.D	54	54	56
JD13820-6	P139558.D	35	36	40
JD13820-7	P139557.D	59	60	64
JD13820-7	P139547.D	54	55	62
JD13820-8	P139540.D	48	47	50
JD13820-9	P139537.D	29	29	31
JD13820-10	P139556.D	51	48	50
JD13820-10	P139546.D	48	45	47
JD13820-11	P139533.D	55	54	58
JD13820-12	P139539.D	42	43	46
JD13820-13	P139534.D	48	48	49
JD13820-14	P139536.D	50	49	50
JD13820-15	P139555.D	39	37	40
JD13820-16	P139535.D	64	62	64
OP29781-BS1	P139528.D	79	77	80
OP29781-BSD	P139529.D	79	79	79
OP29781-MB1	P139527.D	80	79	85
OP29781-MS	P139542.D	61	60	62
OP29781-MSD	P139543.D	56	58	62

Surrogate Compounds                      Recovery Limits

S1 = Nitrobenzene-d5	15-114%
S2 = 2-Fluorobiphenyl	22-104%
S3 = Terphenyl-d14	23-121%

7.5.1  
7

## Metals Analysis

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### QC Data Summaries



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#### Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13820  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 09/30/20

Metal	RL	IDL	MDL	MB raw	final
Aluminum	51	1.6	8.2		
Antimony	2.0	.26	.42	-0.061	<2.0
Arsenic	2.0	.2	.29	0.051	<2.0
Barium	20	.041	1.9		
Beryllium	0.20	.01	.082	0.0	<0.20
Bismuth	2.0	.37	.53		
Boron	10	.19	1.5		
Cadmium	0.51	.041	.071	0.0	<0.51
Calcium	510	.57	45		
Chromium	1.0	.051	.38	0.071	<1.0
Cobalt	5.1	.051	.29		
Copper	2.6	.1	.86	0.16	<2.6
Iron	51	1.1	20		
Lead	2.0	.12	.42	0.031	<2.0
Lithium	5.1	.23	.94		
Magnesium	510	6.6	14		
Manganese	1.5	.02	.42		
Molybdenum	2.0	.041	.33		
Nickel	4.1	.031	.36	0.061	<4.1
Phosphorus	20	.42	3.3		
Potassium	1000	5.6	32		
Selenium	2.0	.36	.66	0.0	<2.0
Silicon	20	.16	11		
Silver	0.51	.11	.17	0.0	<0.51
Sodium	1000	1.1	79		
Strontium	5.1	.01	.18		
Sulfur	10	.45	9.6		
Thallium	1.0	.26	.59	-0.17	<1.0
Tin	20	.1	3.9		
Titanium	1.0	.041	.35		
Tungsten	5.1	.29	1.8		
Vanadium	5.1	.061	.19		
Zinc	5.1	.01	2.3	0.58	<5.1

8.1.1  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13820  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 09/30/20

Metal	RL	IDL	MDL	MB	
				raw	final

Zirconium 2.0 .041 .23

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.1.1

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	JD13820-1 Original MS		SpikeLot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	0.0	99.5	220	45.3N(a)	75-125
Arsenic	7.1	210	220	92.4	75-125
Barium					
Beryllium	0.91	211	220	95.6	75-125
Bismuth					
Boron					
Cadmium	0.25	206	220	93.7	75-125
Calcium					
Chromium	28.8	235	220	93.9	75-125
Cobalt					
Copper	12.5	218	220	93.6	75-125
Iron					
Lead	13.2	219	220	93.7	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	17.0	221	220	92.9	75-125
Phosphorus					
Potassium					
Selenium	0.0	193	220	87.9	75-125
Silicon					
Silver	0.67	27.1	27.5	96.3	75-125
Sodium					
Strontium					
Sulfur					
Thallium	1.2	207	220	93.7	75-125
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	41.8	242	220	91.1	75-125

8.12  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	JD13820-1 Original MS	Spike lot MPSPK2	% Rec	QC Limits
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Zirconium

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes

- (\*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

8.1.2  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	JD13820-1 Original MSD		SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.0	101	220	46.0N(a)	1.5	20
Arsenic	7.1	215	220	94.6	2.4	20
Barium						
Beryllium	0.91	217	220	98.4	2.8	20
Bismuth						
Boron						
Cadmium	0.25	213	220	96.9	3.3	20
Calcium						
Chromium	28.8	236	220	94.3	0.4	20
Cobalt						
Copper	12.5	215	220	92.2	1.4	20
Iron						
Lead	13.2	225	220	96.4	2.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	17.0	221	220	92.9	0.0	20
Phosphorus						
Potassium						
Selenium	0.0	196	220	89.2	1.5	20
Silicon						
Silver	0.67	27.0	27.5	95.9	0.4	20
Sodium						
Strontium						
Sulfur						
Thallium	1.2	202	220	91.4	2.4	20
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	41.8	243	220	91.6	0.4	20

8.1.2  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	JD13820-1 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
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Zirconium

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes

- (\*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

8.1.2  
8



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	196	200	98.0	80-120
Arsenic	195	200	97.5	80-120
Barium				
Beryllium	192	200	96.0	80-120
Bismuth				
Boron				
Cadmium	191	200	95.5	80-120
Calcium				
Chromium	191	200	95.5	80-120
Cobalt				
Copper	189	200	94.5	80-120
Iron				
Lead	191	200	95.5	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	189	200	94.5	80-120
Phosphorus				
Potassium				
Selenium	187	200	93.5	80-120
Silicon				
Silver	24.1	25	96.4	80-120
Sodium				
Strontium				
Sulfur				
Thallium	188	200	94.0	80-120
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	193	200	96.5	80-120

8.1.3  
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 09/30/20

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
-------	---------------	--------------------	-------	--------------

Zirconium

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits  
 (anr) Analyte not requested

8.1.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 09/30/20

Metal	JD13820-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	0.00	0.00	NC	0-10
Arsenic	64.7	75.0	15.9 (a)	0-10
Barium				
Beryllium	8.30	8.50	2.4	0-10
Bismuth				
Boron				
Cadmium	2.30	0.00	100.0(a)	0-10
Calcium				
Chromium	262	280	6.7	0-10
Cobalt				
Copper	114	126	10.2*(b)	0-10
Iron				
Lead	120	124	3.2	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	155	159	2.6	0-10
Phosphorus				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	6.10	0.00	100.0(a)	0-10
Sodium				
Strontium				
Sulfur				
Thallium	10.9	0.00	100.0(a)	0-10
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	380	414	8.8	0-10

8.1.4  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD13820  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: ug/l

Prep Date: 09/30/20

Metal	JD13820-1	QC
	Original SDL 1:5	%DIF Limits

Zirconium

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

8.1.4  
8

POST DIGESTATE SPIKE SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date:

09/30/20

Metal	Sample ml	Final ml	JD13820-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony	19.25	20			1865	0.2	200	2000	93.3	80-120
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

8.1.5  
8

POST DIGESTATE SPIKE SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23013  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date:

09/30/20

Metal	Sample ml	Final ml	JD13820-1 Raw	PS Corr.**	ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
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Zirconium

Associated samples MP23013: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (\*\*) Corr. sample result = Raw \* (sample volume / final volume)  
 (anr) Analyte not requested

8.1.5  
 8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13820  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23063  
Matrix Type: SOLID

Methods: SW846 7471B  
Units: mg/kg

Prep Date: 10/01/20

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0036	.015	-0.0027	<0.033

Associated samples MP23063: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.2.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23063  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13820-1 Original MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.024	0.36	0.368	91.3 80-120

Associated samples MP23063: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2  
8



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23063  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13820-1 Original MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit	
Mercury	0.024	0.37	0.373	92.8	2.7	20

Associated samples MP23063: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2  
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13820  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23063  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20 10/01/20

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	LCS Result	Spikelot HGLC540108%	QC Limits
Mercury	0.30	0.333	90.0	80-120	22.3	27.9	71-124

Associated samples MP23063: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.2.3  
 8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13820  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23063  
Matrix Type: SOLID

Methods: SW846 7471B  
Units: mg/kg

Prep Date: 10/01/20

Metal	LCS Result	Spikelot HGLC540108% Rec	QC Limits
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Mercury 22.1 27.9 79.2 71-124

Associated samples MP23063: JD13820-1, JD13820-2, JD13820-3, JD13820-4, JD13820-5, JD13820-6, JD13820-7, JD13820-8, JD13820-9, JD13820-10, JD13820-11, JD13820-12, JD13820-13, JD13820-14, JD13820-15, JD13820-16

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.2.3

8

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*  
*Automated Report*

**Technical Report for**

**BL Companies**

**Former TCCA, Oreland, PA**

**17L5438**

**SGS Job Number: JD13892**

**Sampling Date: 09/29/20**



**Report to:**

**BL Companies**  
**535 Route 38, Suite 250**  
**Cherry Hill, NJ 08002**  
**mmcgowan@blcompanies.com**

**ATTN: Mike McGowan**

**Total number of pages in report: 141**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

**Caitlin Brice, M.S.**  
**General Manager**

**Client Service contact: Tammy McCloskey 732-329-0200**

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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Test results relate only to samples analyzed.

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## Sample Summary

**BL Companies**

**Job No: JD13892**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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**This report contains results reported as ND = Not detected. The following applies:  
Organics ND = Not detected above the MDL**

JD13892-1	09/29/20	09:20 JS	09/30/20	SO	Soil	B-9A
JD13892-2	09/29/20	09:25 JS	09/30/20	SO	Soil	B-9B
JD13892-3	09/29/20	09:50 JS	09/30/20	SO	Soil	B-10A
JD13892-4	09/29/20	10:00 JS	09/30/20	SO	Soil	B-10B
JD13892-5	09/29/20	10:10 JS	09/30/20	SO	Soil	B-11A
JD13892-6	09/29/20	11:10 JS	09/30/20	SO	Soil	B-12A
JD13892-7	09/29/20	11:15 JS	09/30/20	SO	Soil	B-12B
JD13892-8	09/29/20	11:30 JS	09/30/20	SO	Soil	B-13A
JD13892-9	09/29/20	11:35 JS	09/30/20	SO	Soil	B-13B
JD13892-10	09/29/20	11:50 JS	09/30/20	SO	Soil	B-14A
JD13892-11	09/29/20	12:10 JS	09/30/20	SO	Soil	B-14B
JD13892-12	09/29/20	12:30 JS	09/30/20	SO	Soil	B-15A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



### Sample Summary (continued)

**BL Companies**

**Job No: JD13892**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD13892-13	09/29/20	12:40 JS	09/30/20	SO	Soil	B-15B
JD13892-14	09/29/20	13:25 JS	09/30/20	SO	Soil	B-16A
JD13892-15	09/29/20	13:10 JS	09/30/20	SO	Soil	B-16B

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** BL Companies

**Job No** JD13892

**Site:** Former TCCA, Oreland, PA

**Report Date** 10/8/2020 12:57:51 P

On 09/30/2020, 15 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD13892 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

### MS Volatiles By Method SW846 8260C

**Matrix:** SO

**Batch ID:** VD10966

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD13892-2MS, JD13892-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD13892-2: Diluted due to high concentration of non-target compound.
- JD13892-2 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low.
- JD13892-2 for 1,2,3-Trichlorobenzene: Associated CCV outside of control limits low.

**Matrix:** SO

**Batch ID:** VD10967

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13892-5MS, JD13892-5MSD were used as the QC samples indicated.
- JD13892-5: Dilution required due to high concentration of non-target compound.
- JD13892-5 for 1,2,3-Trichlorobenzene: Associated CCV outside of control limits low.

**Matrix:** SO

**Batch ID:** VI9486

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD13892-4MS, JD13892-6DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Acetone are outside control limits for sample JD13892-6DUP. High RPD due to possible sample nonhomogeneity.

### MS Semi-volatiles By Method SW846 8270D

**Matrix:** SO

**Batch ID:** OP29800

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13831-2MS, JD13831-2MSD were used as the QC samples indicated.
- JD13892-1: Dilution required due to viscosity of the extract matrix.



## Metals Analysis By Method SW846 6010D

**Matrix:** SO

**Batch ID:** MP23030

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13831-1MS, JD13831-1MSD, JD13831-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Beryllium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP23030-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD13892-6 for Zinc: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-5 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JD13892-7 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-4 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-13 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-13 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-6 for Silver: Elevated detection limit due to dilution required for high interfering element.

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## Metals Analysis By Method SW846 6010D

**Matrix:** SO

**Batch ID:** MP23030

- JD13892-8 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-11 for Chromium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-10 for Cadmium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-8 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-13 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Zinc: Elevated detection limit due to dilution required for high interfering element.
- JD13892-13 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-10 for Antimony: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-8 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-10 for Beryllium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-10 for Arsenic: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-9 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-10 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-9 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-8 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-10 for Silver: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-4 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JD13892-4 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD13892-4 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-4 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD13892-4 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-2 for Beryllium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-11 for Nickel: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-10 for Copper: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-10 for Nickel: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-13 for Selenium: Elevated detection limit due to dilution required for high interfering element.

Thursday, October 08, 2020

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## Metals Analysis By Method SW846 6010D

**Matrix:** SO

**Batch ID:** MP23030

- JD13892-10 for Selenium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-4 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-10 for Chromium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-13 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD13892-13 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD13892-11 for Zinc: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Silver: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Selenium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Copper: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-10 for Zinc: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Cadmium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-8 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JD13892-11 for Arsenic: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Antimony: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- JD13892-11 for Beryllium: Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

## Metals Analysis By Method SW846 7471B

**Matrix:** SO

**Batch ID:** MP23064

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD13892-11MS, JD13892-11MSD were used as the QC samples for metals.

## General Chemistry By Method SM2540 G 18TH ED MOD

**Matrix:** SO

**Batch ID:** GN11944

- Sample(s) JD13776-3DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

# Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD13892-1      B-9A

Acetone	37.8	16	6.8	ug/kg	SW846 8260C
Acenaphthene <sup>a</sup>	42300	890	310	ug/kg	SW846 8270D
Acenaphthylene <sup>a</sup>	25700	890	450	ug/kg	SW846 8270D
Anthracene	288000	8900	5500	ug/kg	SW846 8270D
Benzo(a)anthracene	151000	8900	2500	ug/kg	SW846 8270D
Benzo(a)pyrene	110000	8900	4100	ug/kg	SW846 8270D
Benzo(b)fluoranthene	144000	8900	3900	ug/kg	SW846 8270D
Benzo(g,h,i)perylene <sup>a</sup>	53500	890	450	ug/kg	SW846 8270D
Benzo(k)fluoranthene	55300	8900	4200	ug/kg	SW846 8270D
Chrysene	147000	8900	2800	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene <sup>a</sup>	17300	890	390	ug/kg	SW846 8270D
Fluoranthene	434000	8900	4000	ug/kg	SW846 8270D
Fluorene	100000	8900	4100	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene <sup>a</sup>	51100	890	420	ug/kg	SW846 8270D
Naphthalene <sup>a</sup>	12700	890	250	ug/kg	SW846 8270D
Phenanthrene	393000	8900	3000	ug/kg	SW846 8270D
Pyrene	322000	8900	2900	ug/kg	SW846 8270D
Antimony	14.3	2.6		mg/kg	SW846 6010D
Arsenic	58.2	2.6		mg/kg	SW846 6010D
Beryllium	0.43	0.26		mg/kg	SW846 6010D
Chromium	21.4	1.3		mg/kg	SW846 6010D
Copper	60.0	3.3		mg/kg	SW846 6010D
Lead	790	2.6		mg/kg	SW846 6010D
Mercury	0.79	0.043		mg/kg	SW846 7471B
Nickel	18.7	5.2		mg/kg	SW846 6010D
Selenium	3.8	2.6		mg/kg	SW846 6010D
Zinc	168	26		mg/kg	SW846 6010D

JD13892-2      B-9B

Ethylbenzene <sup>b</sup>	4350	1800	830	ug/kg	SW846 8260C
Styrene <sup>b</sup>	3090 J	3700	2400	ug/kg	SW846 8260C
Toluene <sup>b</sup>	2720	1800	960	ug/kg	SW846 8260C
m,p-Xylene <sup>b</sup>	15000	1800	1600	ug/kg	SW846 8260C
o-Xylene <sup>b</sup>	7430	1800	840	ug/kg	SW846 8260C
Xylene (total) <sup>b</sup>	22400	1800	1100	ug/kg	SW846 8260C
Total TIC, Volatile	2418000 J			ug/kg	
Acenaphthene	10400	930	320	ug/kg	SW846 8270D
Acenaphthylene	7880	930	470	ug/kg	SW846 8270D
Anthracene	36500	930	570	ug/kg	SW846 8270D
Benzo(a)anthracene	30100	930	260	ug/kg	SW846 8270D
Benzo(a)pyrene	23800	930	420	ug/kg	SW846 8270D
Benzo(b)fluoranthene	29500	930	410	ug/kg	SW846 8270D

# Summary of Hits

**Job Number:** JD13892  
**Account:** BL Companies  
**Project:** Former TCCA, Oreland, PA  
**Collected:** 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
		11900	930	460	ug/kg	SW846 8270D
		8810	930	430	ug/kg	SW846 8270D
		26000	930	290	ug/kg	SW846 8270D
		3480	46	21	ug/kg	SW846 8270D
		79100	930	410	ug/kg	SW846 8270D
		30100	930	430	ug/kg	SW846 8270D
		10800	930	440	ug/kg	SW846 8270D
		22100	930	260	ug/kg	SW846 8270D
		86400	930	310	ug/kg	SW846 8270D
		56800	930	300	ug/kg	SW846 8270D
		124	72		mg/kg	SW846 6010D
		296	72		mg/kg	SW846 6010D
		20.7	1.4		mg/kg	SW846 6010D
		476	90		mg/kg	SW846 6010D
		13200	72		mg/kg	SW846 6010D
		0.18	0.029		mg/kg	SW846 7471B
		24.9	5.8		mg/kg	SW846 6010D
		982	140		mg/kg	SW846 6010D

JD13892-3      B-10A

		36.1 J	38	13	ug/kg	SW846 8270D
		300	38	20	ug/kg	SW846 8270D
		306	38	24	ug/kg	SW846 8270D
		1020	38	11	ug/kg	SW846 8270D
		1130	38	17	ug/kg	SW846 8270D
		1550	38	17	ug/kg	SW846 8270D
		837	38	19	ug/kg	SW846 8270D
		514	38	18	ug/kg	SW846 8270D
		1330	38	12	ug/kg	SW846 8270D
		191	38	17	ug/kg	SW846 8270D
		2130	38	17	ug/kg	SW846 8270D
		75.6	38	18	ug/kg	SW846 8270D
		684	38	18	ug/kg	SW846 8270D
		76.7	38	11	ug/kg	SW846 8270D
		1090	38	13	ug/kg	SW846 8270D
		1910	38	12	ug/kg	SW846 8270D
		2.6	2.3		mg/kg	SW846 6010D
		15.5	2.3		mg/kg	SW846 6010D
		0.71	0.23		mg/kg	SW846 6010D
		3.0	0.58		mg/kg	SW846 6010D
		49.3	1.2		mg/kg	SW846 6010D
		61.7	2.9		mg/kg	SW846 6010D
		578	2.3		mg/kg	SW846 6010D
		0.12	0.039		mg/kg	SW846 7471B

# Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Nickel		17.3	4.6		mg/kg	SW846 6010D
Zinc		392	23		mg/kg	SW846 6010D

**JD13892-4 B-10B**

Phenanthrene		14.3 J	40	13	ug/kg	SW846 8270D
Arsenic <sup>c</sup>		9.0	5.1		mg/kg	SW846 6010D
Beryllium		1.9	0.25		mg/kg	SW846 6010D
Chromium		23.2	1.3		mg/kg	SW846 6010D
Copper <sup>c</sup>		20.3	6.3		mg/kg	SW846 6010D
Lead <sup>c</sup>		15.5	5.1		mg/kg	SW846 6010D
Nickel		22.8	5.1		mg/kg	SW846 6010D
Zinc		102	25		mg/kg	SW846 6010D

**JD13892-5 B-11A**

Benzene <sup>d</sup>		361	120	110	ug/kg	SW846 8260C
Ethylbenzene <sup>d</sup>		1690	250	110	ug/kg	SW846 8260C
Styrene <sup>d</sup>		1140	490	330	ug/kg	SW846 8260C
Toluene <sup>d</sup>		1320	250	130	ug/kg	SW846 8260C
m,p-Xylene <sup>d</sup>		5900	250	220	ug/kg	SW846 8260C
o-Xylene <sup>d</sup>		2880	250	110	ug/kg	SW846 8260C
Xylene (total) <sup>d</sup>		8780	250	140	ug/kg	SW846 8260C
Total TIC, Volatile		516900 J			ug/kg	
Acenaphthene		4040	43	15	ug/kg	SW846 8270D
Acenaphthylene		1170	43	22	ug/kg	SW846 8270D
Anthracene		6770	430	260	ug/kg	SW846 8270D
Benzo(a)anthracene		8090	430	120	ug/kg	SW846 8270D
Benzo(a)pyrene		6510	430	190	ug/kg	SW846 8270D
Benzo(b)fluoranthene		7980	430	190	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		3180	43	21	ug/kg	SW846 8270D
Benzo(k)fluoranthene		3100	430	200	ug/kg	SW846 8270D
Chrysene		8190	430	130	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		867	43	19	ug/kg	SW846 8270D
Fluoranthene		23200	430	190	ug/kg	SW846 8270D
Fluorene		7840	430	200	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		2880	43	20	ug/kg	SW846 8270D
Naphthalene		8580	430	120	ug/kg	SW846 8270D
Phenanthrene		19000	430	140	ug/kg	SW846 8270D
Pyrene		16700	430	140	ug/kg	SW846 8270D
Arsenic <sup>c</sup>		101	5.3		mg/kg	SW846 6010D
Beryllium		1.1	0.27		mg/kg	SW846 6010D
Chromium		20.9	1.3		mg/kg	SW846 6010D
Copper <sup>c</sup>		31.4	6.6		mg/kg	SW846 6010D
Lead <sup>c</sup>		258	5.3		mg/kg	SW846 6010D

# Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Mercury		0.15	0.036		mg/kg	SW846 7471B
Nickel		14.8	5.3		mg/kg	SW846 6010D
Selenium <sup>c</sup>		8.6	5.3		mg/kg	SW846 6010D
Zinc		199	26		mg/kg	SW846 6010D

**JD13892-6 B-12A**

Acetone		27.5	22	9.0	ug/kg	SW846 8260C
Acenaphthene		102 J	200	70	ug/kg	SW846 8270D
Acenaphthylene		186 J	200	100	ug/kg	SW846 8270D
Anthracene		341	200	120	ug/kg	SW846 8270D
Benzo(a)anthracene		756	200	57	ug/kg	SW846 8270D
Benzo(a)pyrene		791	200	92	ug/kg	SW846 8270D
Benzo(b)fluoranthene		1220	200	90	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		806	200	100	ug/kg	SW846 8270D
Benzo(k)fluoranthene		449	200	95	ug/kg	SW846 8270D
Chrysene		1020	200	64	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		189 J	200	90	ug/kg	SW846 8270D
Fluoranthene		2000	200	90	ug/kg	SW846 8270D
Fluorene		141 J	200	93	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		628	200	95	ug/kg	SW846 8270D
Naphthalene		206	200	57	ug/kg	SW846 8270D
Phenanthrene		1530	200	68	ug/kg	SW846 8270D
Pyrene		1490	200	65	ug/kg	SW846 8270D
Beryllium <sup>c</sup>		11.0	2.4		mg/kg	SW846 6010D
Cadmium <sup>c</sup>		11.8	6.0		mg/kg	SW846 6010D
Chromium		267	1.2		mg/kg	SW846 6010D
Copper <sup>c</sup>		5760	30		mg/kg	SW846 6010D
Lead <sup>c</sup>		4010	24		mg/kg	SW846 6010D
Mercury		1.2	0.15		mg/kg	SW846 7471B
Nickel		108	4.8		mg/kg	SW846 6010D
Zinc <sup>c</sup>		9180	240		mg/kg	SW846 6010D

**JD13892-7 B-12B**

Benzo(a)anthracene		17.7 J	41	12	ug/kg	SW846 8270D
Benzo(b)fluoranthene		21.1 J	41	18	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		40.6 J	41	20	ug/kg	SW846 8270D
Chrysene		17.1 J	41	13	ug/kg	SW846 8270D
Fluoranthene		28.1 J	41	18	ug/kg	SW846 8270D
Fluorene		26.1 J	41	19	ug/kg	SW846 8270D
Naphthalene		12.6 J	41	11	ug/kg	SW846 8270D
Phenanthrene		25.6 J	41	14	ug/kg	SW846 8270D
Pyrene		21.7 J	41	13	ug/kg	SW846 8270D
Beryllium <sup>c</sup>		6.1	1.2		mg/kg	SW846 6010D



## Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Chromium		17.4	1.2		mg/kg	SW846 6010D
Copper <sup>c</sup>		118	16		mg/kg	SW846 6010D
Lead <sup>c</sup>		47.0	12		mg/kg	SW846 6010D
Mercury		0.082	0.040		mg/kg	SW846 7471B
Nickel		38.8	5.0		mg/kg	SW846 6010D
Zinc		210	25		mg/kg	SW846 6010D

JD13892-8      B-13A

Acetone		16.2	15	6.4	ug/kg	SW846 8260C
Acenaphthene		27.5 J	38	13	ug/kg	SW846 8270D
Acenaphthylene		295	38	19	ug/kg	SW846 8270D
Anthracene		274	38	23	ug/kg	SW846 8270D
Benzo(a)anthracene		751	38	11	ug/kg	SW846 8270D
Benzo(a)pyrene		914	38	17	ug/kg	SW846 8270D
Benzo(b)fluoranthene		1420	38	17	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		1250	38	19	ug/kg	SW846 8270D
Benzo(k)fluoranthene		455	38	18	ug/kg	SW846 8270D
Chrysene		925	38	12	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		214	38	17	ug/kg	SW846 8270D
Fluoranthene		1520	38	17	ug/kg	SW846 8270D
Fluorene		44.8	38	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		907	38	18	ug/kg	SW846 8270D
Naphthalene		155	38	11	ug/kg	SW846 8270D
Phenanthrene		743	38	13	ug/kg	SW846 8270D
Pyrene		1230	38	12	ug/kg	SW846 8270D
Arsenic <sup>c</sup>		16.2	12		mg/kg	SW846 6010D
Beryllium <sup>c</sup>		6.0	1.2		mg/kg	SW846 6010D
Cadmium <sup>c</sup>		7.0	2.9		mg/kg	SW846 6010D
Chromium		253	1.2		mg/kg	SW846 6010D
Copper <sup>c</sup>		643	14		mg/kg	SW846 6010D
Lead <sup>c</sup>		1300	12		mg/kg	SW846 6010D
Mercury		0.35	0.037		mg/kg	SW846 7471B
Nickel		69.5	4.6		mg/kg	SW846 6010D
Zinc <sup>c</sup>		4420	110		mg/kg	SW846 6010D

JD13892-9      B-13B

Acenaphthene		27.3 J	41	14	ug/kg	SW846 8270D
Acenaphthylene		115	41	21	ug/kg	SW846 8270D
Anthracene		134	41	25	ug/kg	SW846 8270D
Benzo(a)anthracene		461	41	11	ug/kg	SW846 8270D
Benzo(a)pyrene		515	41	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene		714	41	18	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		408	41	20	ug/kg	SW846 8270D



## Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Benzo(k)fluoranthene		217	41	19	ug/kg	SW846 8270D
Chrysene		541	41	13	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		83.8	41	18	ug/kg	SW846 8270D
Fluoranthene		862	41	18	ug/kg	SW846 8270D
Fluorene		51.4	41	19	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		332	41	19	ug/kg	SW846 8270D
Naphthalene		1130	41	11	ug/kg	SW846 8270D
Phenanthrene		455	41	14	ug/kg	SW846 8270D
Pyrene		758	41	13	ug/kg	SW846 8270D
Beryllium <sup>c</sup>		2.9	1.2		mg/kg	SW846 6010D
Chromium		42.1	1.2		mg/kg	SW846 6010D
Copper <sup>c</sup>		81.7	16		mg/kg	SW846 6010D
Lead <sup>c</sup>		298	12		mg/kg	SW846 6010D
Mercury		0.064	0.041		mg/kg	SW846 7471B
Nickel		25.7	5.0		mg/kg	SW846 6010D
Zinc		318	25		mg/kg	SW846 6010D

JD13892-10 B-14A

Chloroform		1.2 J	3.5	0.90	ug/kg	SW846 8260C
Acenaphthene		14.9 J	41	14	ug/kg	SW846 8270D
Acenaphthylene		177	41	21	ug/kg	SW846 8270D
Anthracene		230	41	25	ug/kg	SW846 8270D
Benzo(a)anthracene		681	41	12	ug/kg	SW846 8270D
Benzo(a)pyrene		814	41	19	ug/kg	SW846 8270D
Benzo(b)fluoranthene		1090	41	18	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		598	41	21	ug/kg	SW846 8270D
Benzo(k)fluoranthene		348	41	19	ug/kg	SW846 8270D
Chrysene		731	41	13	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		140	41	18	ug/kg	SW846 8270D
Fluoranthene		1120	41	18	ug/kg	SW846 8270D
Fluorene		30.0 J	41	19	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		519	41	19	ug/kg	SW846 8270D
Naphthalene		67.3	41	12	ug/kg	SW846 8270D
Phenanthrene		374	41	14	ug/kg	SW846 8270D
Pyrene		926	41	13	ug/kg	SW846 8270D
Beryllium <sup>e</sup>		2.4	1.2		mg/kg	SW846 6010D
Chromium <sup>e</sup>		21.0	6.0		mg/kg	SW846 6010D
Lead		20.7	2.4		mg/kg	SW846 6010D

JD13892-11 B-14B

Benzo(a)anthracene		21.1 J	41	12	ug/kg	SW846 8270D
Chrysene		14.7 J	41	13	ug/kg	SW846 8270D
Fluoranthene		38.7 J	41	18	ug/kg	SW846 8270D

## Summary of Hits

Job Number: JD13892  
 Account: BL Companies  
 Project: Former TCCA, Oreland, PA  
 Collected: 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Pyrene		28.9 J	41	13	ug/kg	SW846 8270D
Lead		13.0	2.4		mg/kg	SW846 6010D

**JD13892-12 B-15A**

Benzo(a)anthracene		38.8 J	39	11	ug/kg	SW846 8270D
Benzo(a)pyrene		42.7	39	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene		45.6	39	17	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		32.7 J	39	19	ug/kg	SW846 8270D
Chrysene		36.4 J	39	12	ug/kg	SW846 8270D
Fluoranthene		58.1	39	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		23.4 J	39	18	ug/kg	SW846 8270D
Phenanthrene		35.0 J	39	13	ug/kg	SW846 8270D
Pyrene		68.1	39	12	ug/kg	SW846 8270D
Arsenic		6.7	2.3		mg/kg	SW846 6010D
Beryllium		1.0	0.23		mg/kg	SW846 6010D
Chromium		37.5	1.2		mg/kg	SW846 6010D
Copper		34.7	2.9		mg/kg	SW846 6010D
Lead		15.1	2.3		mg/kg	SW846 6010D
Nickel		16.3	4.6		mg/kg	SW846 6010D
Zinc		48.5	23		mg/kg	SW846 6010D

**JD13892-13 B-15B**

Arsenic <sup>c</sup>		9.4	4.7		mg/kg	SW846 6010D
Beryllium		1.0	0.24		mg/kg	SW846 6010D
Chromium		46.2	1.2		mg/kg	SW846 6010D
Copper <sup>c</sup>		20.4	5.9		mg/kg	SW846 6010D
Lead <sup>c</sup>		10.5	4.7		mg/kg	SW846 6010D
Nickel		17.1	4.7		mg/kg	SW846 6010D
Zinc		46.6	24		mg/kg	SW846 6010D

**JD13892-14 B-16A**

Benzo(a)anthracene		65.5	39	11	ug/kg	SW846 8270D
Benzo(a)pyrene		71.8	39	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene		93.5	39	17	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		57.3	39	20	ug/kg	SW846 8270D
Benzo(k)fluoranthene		32.3 J	39	18	ug/kg	SW846 8270D
Chrysene		79.3	39	12	ug/kg	SW846 8270D
Fluoranthene		154	39	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		45.1	39	18	ug/kg	SW846 8270D
Phenanthrene		72.0	39	13	ug/kg	SW846 8270D
Pyrene		130	39	13	ug/kg	SW846 8270D
Arsenic		6.1	2.3		mg/kg	SW846 6010D

## Summary of Hits

**Job Number:** JD13892  
**Account:** BL Companies  
**Project:** Former TCCA, Oreland, PA  
**Collected:** 09/29/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
		1.1	0.23		mg/kg	SW846 6010D
		19.3	1.2		mg/kg	SW846 6010D
		9.9	2.9		mg/kg	SW846 6010D
		27.7	2.3		mg/kg	SW846 6010D
		13.1	4.7		mg/kg	SW846 6010D
		41.6	23		mg/kg	SW846 6010D
<b>JD13892-15</b>	<b>B-16B</b>					
		4.7	2.4		mg/kg	SW846 6010D
		1.2	0.24		mg/kg	SW846 6010D
		19.5	1.2		mg/kg	SW846 6010D
		14.2	3.0		mg/kg	SW846 6010D
		9.2	2.4		mg/kg	SW846 6010D
		22.5	4.8		mg/kg	SW846 6010D
		50.1	24		mg/kg	SW846 6010D

- (a) Dilution required due to viscosity of the extract matrix.
- (b) Diluted due to high concentration of non-target compound.
- (c) Elevated detection limit due to dilution required for high interfering element.
- (d) Dilution required due to high concentration of non-target compound.
- (e) Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

**Sample Results**

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**Report of Analysis**

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## Report of Analysis

Client Sample ID: B-9A	Date Sampled: 09/29/20
Lab Sample ID: JD13892-1	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 74.7
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234311.D	1	10/03/20 17:20	TDN	10/01/20 08:00	n/a	VI9486

Run #1	Initial Weight
Run #2	4.1 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	37.8	16	6.8	ug/kg	
71-43-2	Benzene	ND	0.82	0.74	ug/kg	
74-97-5	Bromochloromethane	ND	8.2	0.91	ug/kg	
75-27-4	Bromodichloromethane	ND	3.3	0.70	ug/kg	
75-25-2	Bromoform	ND	8.2	2.2	ug/kg	
74-83-9	Bromomethane	ND	8.2	1.2	ug/kg	
78-93-3	2-Butanone (MEK)	ND	16	14	ug/kg	
75-15-0	Carbon disulfide	ND	3.3	0.87	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.3	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	3.3	0.75	ug/kg	
75-00-3	Chloroethane	ND	8.2	0.96	ug/kg	
67-66-3	Chloroform	ND	3.3	0.85	ug/kg	
74-87-3	Chloromethane	ND	8.2	3.2	ug/kg	
110-82-7	Cyclohexane	ND	3.3	1.1	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.3	1.1	ug/kg	
124-48-1	Dibromochloromethane	ND	3.3	0.91	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.6	0.69	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.6	0.89	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.6	0.81	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.6	0.81	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	8.2	1.2	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.6	0.81	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.6	0.77	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.6	1.1	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.6	1.4	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.6	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.3	0.77	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.3	0.78	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.3	0.75	ug/kg	
100-41-4	Ethylbenzene	ND	1.6	0.74	ug/kg	
76-13-1	Freon 113	ND	8.2	4.4	ug/kg	
591-78-6	2-Hexanone	ND	8.2	3.5	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-9A	Date Sampled: 09/29/20
Lab Sample ID: JD13892-1	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 74.7
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.3	2.3	ug/kg	
79-20-9	Methyl Acetate	ND	8.2	2.3	ug/kg	
108-87-2	Methylcyclohexane	ND	3.3	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.6	0.77	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	8.2	3.7	ug/kg	
75-09-2	Methylene chloride	ND	8.2	4.3	ug/kg	
100-42-5	Styrene	ND	3.3	2.2	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.3	0.98	ug/kg	
127-18-4	Tetrachloroethene	ND	3.3	0.95	ug/kg	
108-88-3	Toluene	ND	1.6	0.86	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	8.2	4.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	8.2	4.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.3	0.79	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.3	0.90	ug/kg	
79-01-6	Trichloroethene	ND	1.6	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	8.2	1.1	ug/kg	
75-01-4	Vinyl chloride	ND	3.3	0.79	ug/kg	
	m,p-Xylene	ND	1.6	1.5	ug/kg	
95-47-6	o-Xylene	ND	1.6	0.75	ug/kg	
1330-20-7	Xylene (total)	ND	1.6	0.95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-130%
17060-07-0	1,2-Dichloroethane-D4	104%		75-131%
2037-26-5	Toluene-D8	103%		81-121%
460-00-4	4-Bromofluorobenzene	108%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> B-9A <b>Lab Sample ID:</b> JD13892-1 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 74.7
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	14.3	2.6	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic	58.2	2.6	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Beryllium	0.43	0.26	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium	< 0.66	0.66	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Chromium	21.4	1.3	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper	60.0	3.3	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Lead	790	2.6	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Mercury	0.79	0.043	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	18.7	5.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium	3.8	2.6	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Silver	< 0.66	0.66	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Thallium	< 1.3	1.3	mg/kg	1	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	168	26	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

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RL = Reporting Limit

4.1  
4



## Report of Analysis

Client Sample ID: B-9B	Date Sampled: 09/29/20
Lab Sample ID: JD13892-2	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 69.4
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	D271943.D	1	10/05/20 13:50	TDN	10/01/20 08:00	n/a	VD10966
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.2 g	5.0 ml	5.0 ul
Run #2			

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	18000	7600	ug/kg	
71-43-2	Benzene	ND	910	830	ug/kg	
74-97-5	Bromochloromethane	ND	9100	1000	ug/kg	
75-27-4	Bromodichloromethane	ND	3700	780	ug/kg	
75-25-2	Bromoform	ND	9100	2500	ug/kg	
74-83-9	Bromomethane	ND	9100	1400	ug/kg	
78-93-3	2-Butanone (MEK)	ND	18000	16000	ug/kg	
75-15-0	Carbon disulfide	ND	3700	980	ug/kg	
56-23-5	Carbon tetrachloride	ND	3700	1100	ug/kg	
108-90-7	Chlorobenzene	ND	3700	840	ug/kg	
75-00-3	Chloroethane	ND	9100	1100	ug/kg	
67-66-3	Chloroform	ND	3700	950	ug/kg	
74-87-3	Chloromethane	ND	9100	3600	ug/kg	
110-82-7	Cyclohexane	ND	3700	1200	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan <sup>b</sup>	ND	3700	1300	ug/kg	
124-48-1	Dibromochloromethane	ND	3700	1000	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1800	770	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1800	1000	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1800	910	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1800	900	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	9100	1300	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1800	900	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1800	860	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1800	1200	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1800	1500	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1800	1100	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3700	860	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3700	870	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3700	830	ug/kg	
100-41-4	Ethylbenzene	4350	1800	830	ug/kg	
76-13-1	Freon 113	ND	9100	4900	ug/kg	
591-78-6	2-Hexanone	ND	9100	3900	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: B-9B		Date Sampled: 09/29/20
Lab Sample ID: JD13892-2		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 69.4
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3700	2600	ug/kg	
79-20-9	Methyl Acetate	ND	9100	2500	ug/kg	
108-87-2	Methylcyclohexane	ND	3700	1600	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1800	860	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	9100	4100	ug/kg	
75-09-2	Methylene chloride	ND	9100	4800	ug/kg	
100-42-5	Styrene	3090	3700	2400	ug/kg	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	3700	1100	ug/kg	
127-18-4	Tetrachloroethene	ND	3700	1100	ug/kg	
108-88-3	Toluene	2720	1800	960	ug/kg	
87-61-6	1,2,3-Trichlorobenzene <sup>b</sup>	ND	9100	4600	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	9100	4600	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3700	880	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3700	1000	ug/kg	
79-01-6	Trichloroethene	ND	1800	1400	ug/kg	
75-69-4	Trichlorofluoromethane	ND	9100	1200	ug/kg	
75-01-4	Vinyl chloride	ND	3700	880	ug/kg	
	m,p-Xylene	15000	1800	1600	ug/kg	
95-47-6	o-Xylene	7430	1800	840	ug/kg	
1330-20-7	Xylene (total)	22400	1800	1100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-130%
17060-07-0	1,2-Dichloroethane-D4	91%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
108-67-8	Benzene, 1,3,5-trimethyl-	15.70	14000	ug/kg	JN
95-63-6	Benzene, 1,2,4-trimethyl-	16.13	31000	ug/kg	JN
	Benzene, -ethenyl-methyl-isomer	16.20	11000	ug/kg	J
496-11-7	Indane	16.87	47000	ug/kg	JN
95-13-6	Indene	17.11	130000	ug/kg	JN
	Benzofuran, -methyl-isomer	17.87	18000	ug/kg	J
	1H-Indene-dihydro-methyl- isomer	18.17	11000	ug/kg	J
	1H-Indene-dihydro-methyl- isomer	18.35	12000	ug/kg	J
	1H-Indene-methyl-isomer	18.43	31000	ug/kg	J
	1H-Indene-methyl-isomer	18.55	37000	ug/kg	J

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-9B	
<b>Lab Sample ID:</b> JD13892-2	<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035	<b>Percent Solids:</b> 69.4
<b>Project:</b> Former TCCA, Oreland, PA	

**VOA TCL List**

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
91-20-3	Naphthalene	19.14	1700000	ug/kg	JN
95-15-8	Benzo[b]thiophene	19.28	36000	ug/kg	JN
	Naphthalene, methyl- isomer	20.55	240000	ug/kg	J
	Naphthalene, methyl- isomer	20.78	90000	ug/kg	J
92-52-4	Biphenyl	21.43	10000	ug/kg	JN
	Total TIC, Volatile		2418000	ug/kg	J

- (a) Diluted due to high concentration of non-target compound.
- (b) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

Client Sample ID: B-9B		Date Sampled: 09/29/20
Lab Sample ID: JD13892-2		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 69.4
Method: SW846 8270D SW846 3546		
Project: Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493904A.D	1	10/03/20 01:10	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2	6P493936.D	20	10/06/20 02:26	HSS	10/02/20 09:45	OP29800	E6P3139

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2	31.0 g	1.0 ml

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	10400 <sup>a</sup>	930	320	ug/kg	
208-96-8	Acenaphthylene	7880 <sup>a</sup>	930	470	ug/kg	
120-12-7	Anthracene	36500 <sup>a</sup>	930	570	ug/kg	
56-55-3	Benzo(a)anthracene	30100 <sup>a</sup>	930	260	ug/kg	
50-32-8	Benzo(a)pyrene	23800 <sup>a</sup>	930	420	ug/kg	
205-99-2	Benzo(b)fluoranthene	29500 <sup>a</sup>	930	410	ug/kg	
191-24-2	Benzo(g,h,i)perylene	11900 <sup>a</sup>	930	460	ug/kg	
207-08-9	Benzo(k)fluoranthene	8810 <sup>a</sup>	930	430	ug/kg	
218-01-9	Chrysene	26000 <sup>a</sup>	930	290	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	3480	46	21	ug/kg	
206-44-0	Fluoranthene	79100 <sup>a</sup>	930	410	ug/kg	
86-73-7	Fluorene	30100 <sup>a</sup>	930	430	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	10800 <sup>a</sup>	930	440	ug/kg	
91-20-3	Naphthalene	22100 <sup>a</sup>	930	260	ug/kg	
85-01-8	Phenanthrene	86400 <sup>a</sup>	930	310	ug/kg	
129-00-0	Pyrene	56800 <sup>a</sup>	930	300	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%	58%	15-114%
321-60-8	2-Fluorobiphenyl	52%	65%	22-104%
1718-51-0	Terphenyl-d14	50%	61%	23-121%

(a) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> B-9B	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-2	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 69.4
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	124	72	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	296	72	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	< 7.2	7.2	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 18	18	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Chromium	20.7	1.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	476	90	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Lead	13200	72	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Mercury	0.18	0.029	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup> SW846 7471B <sup>5</sup>
Nickel	24.9	5.8	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 72	72	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 18	18	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 36	36	mg/kg	25	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>
Zinc	982	140	mg/kg	5	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup> SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.2  
4

## Report of Analysis

Client Sample ID: B-10A	Date Sampled: 09/29/20
Lab Sample ID: JD13892-3	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 85.1
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234306.D	1	10/03/20 14:55	TDN	10/01/20 08:00	n/a	VI9486

Run #1	Initial Weight
Run #2	3.5 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	17	6.9	ug/kg	
71-43-2	Benzene	ND	0.84	0.76	ug/kg	
74-97-5	Bromochloromethane	ND	8.4	0.94	ug/kg	
75-27-4	Bromodichloromethane	ND	3.4	0.72	ug/kg	
75-25-2	Bromoform	ND	8.4	2.3	ug/kg	
74-83-9	Bromomethane	ND	8.4	1.3	ug/kg	
78-93-3	2-Butanone (MEK)	ND	17	14	ug/kg	
75-15-0	Carbon disulfide	ND	3.4	0.90	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.4	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	3.4	0.77	ug/kg	
75-00-3	Chloroethane	ND	8.4	0.99	ug/kg	
67-66-3	Chloroform	ND	3.4	0.87	ug/kg	
74-87-3	Chloromethane	ND	8.4	3.3	ug/kg	
110-82-7	Cyclohexane	ND	3.4	1.1	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.4	1.2	ug/kg	
124-48-1	Dibromochloromethane	ND	3.4	0.94	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.7	0.71	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.92	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.83	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.83	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	8.4	1.2	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.7	0.83	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.7	0.79	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.7	1.1	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.7	1.4	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.7	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.4	0.79	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.4	0.80	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.4	0.77	ug/kg	
100-41-4	Ethylbenzene	ND	1.7	0.76	ug/kg	
76-13-1	Freon 113	ND	8.4	4.5	ug/kg	
591-78-6	2-Hexanone	ND	8.4	3.6	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-10A <b>Lab Sample ID:</b> JD13892-3 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 85.1
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.4	2.4	ug/kg	
79-20-9	Methyl Acetate	ND	8.4	2.3	ug/kg	
108-87-2	Methylcyclohexane	ND	3.4	1.5	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.7	0.79	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	8.4	3.8	ug/kg	
75-09-2	Methylene chloride	ND	8.4	4.4	ug/kg	
100-42-5	Styrene	ND	3.4	2.2	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.4	1.0	ug/kg	
127-18-4	Tetrachloroethene	ND	3.4	0.97	ug/kg	
108-88-3	Toluene	ND	1.7	0.88	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	8.4	4.2	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	8.4	4.2	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.4	0.81	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.4	0.93	ug/kg	
79-01-6	Trichloroethene	ND	1.7	1.3	ug/kg	
75-69-4	Trichlorofluoromethane	ND	8.4	1.1	ug/kg	
75-01-4	Vinyl chloride	ND	3.4	0.81	ug/kg	
	m,p-Xylene	ND	1.7	1.5	ug/kg	
95-47-6	o-Xylene	ND	1.7	0.77	ug/kg	
1330-20-7	Xylene (total)	ND	1.7	0.98	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-130%
17060-07-0	1,2-Dichloroethane-D4	98%		75-131%
2037-26-5	Toluene-D8	105%		81-121%
460-00-4	4-Bromofluorobenzene	118%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

# Report of Analysis

<b>Client Sample ID:</b> B-10A		<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-3		<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 85.1
<b>Method:</b> SW846 8270D SW846 3546		
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493902.D	1	10/02/20 23:59	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	36.1	38	13	ug/kg	J
208-96-8	Acenaphthylene	300	38	20	ug/kg	
120-12-7	Anthracene	306	38	24	ug/kg	
56-55-3	Benzo(a)anthracene	1020	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	1130	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	1550	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	837	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	514	38	18	ug/kg	
218-01-9	Chrysene	1330	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	191	38	17	ug/kg	
206-44-0	Fluoranthene	2130	38	17	ug/kg	
86-73-7	Fluorene	75.6	38	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	684	38	18	ug/kg	
91-20-3	Naphthalene	76.7	38	11	ug/kg	
85-01-8	Phenanthrene	1090	38	13	ug/kg	
129-00-0	Pyrene	1910	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	56%		15-114%
321-60-8	2-Fluorobiphenyl	61%		22-104%
1718-51-0	Terphenyl-d14	62%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4



## Report of Analysis

<b>Client Sample ID:</b> B-10A <b>Lab Sample ID:</b> JD13892-3 <b>Matrix:</b> SO - Soil  <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 85.1
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	2.6	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Arsenic	15.5	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Beryllium	0.71	0.23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Cadmium	3.0	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Chromium	49.3	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Copper	61.7	2.9	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Lead	578	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Mercury	0.12	0.039	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup> SW846 7471B <sup>4</sup>
Nickel	17.3	4.6	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Selenium	< 2.3	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Silver	< 0.58	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Thallium	< 1.2	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Zinc	392	23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Prep QC Batch: MP23030
- (4) Prep QC Batch: MP23064

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RL = Reporting Limit

4.3  
4

## Report of Analysis

Client Sample ID: B-10B	Date Sampled: 09/29/20
Lab Sample ID: JD13892-4	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 81.5
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234307.D	1	10/03/20 15:24	TDN	10/01/20 08:00	n/a	VI9486

Run #1	Initial Weight
Run #2	5.6 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	4.5	ug/kg	
71-43-2	Benzene	ND	0.55	0.50	ug/kg	
74-97-5	Bromochloromethane	ND	5.5	0.61	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.47	ug/kg	
75-25-2	Bromoform	ND	5.5	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.5	0.84	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	9.3	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.59	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.68	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.50	ug/kg	
75-00-3	Chloroethane	ND	5.5	0.65	ug/kg	
67-66-3	Chloroform	ND	2.2	0.57	ug/kg	
74-87-3	Chloromethane	ND	5.5	2.1	ug/kg	
110-82-7	Cyclohexane	ND	2.2	0.72	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.76	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.61	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.46	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.60	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.54	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.54	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.5	0.80	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.54	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.51	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.72	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.92	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.67	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.52	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.52	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.50	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.50	ug/kg	
76-13-1	Freon 113	ND	5.5	2.9	ug/kg	
591-78-6	2-Hexanone	ND	5.5	2.3	ug/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-10B <b>Lab Sample ID:</b> JD13892-4 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 81.5
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.2	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.5	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	2.2	0.96	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.51	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.5	2.5	ug/kg	
75-09-2	Methylene chloride	ND	5.5	2.9	ug/kg	
100-42-5	Styrene	ND	2.2	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.66	ug/kg	
127-18-4	Tetrachloroethene	ND	2.2	0.64	ug/kg	
108-88-3	Toluene	ND	1.1	0.58	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.5	2.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.5	2.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.53	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.61	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.83	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.5	0.75	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.53	ug/kg	
	m,p-Xylene	ND	1.1	0.98	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.50	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.64	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%
17060-07-0	1,2-Dichloroethane-D4	100%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	103%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> B-10B <b>Lab Sample ID:</b> JD13892-4 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270D SW846 3546 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 81.5
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493886.D	1	10/02/20 17:44	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	14	ug/kg	
208-96-8	Acenaphthylene	ND	40	20	ug/kg	
120-12-7	Anthracene	ND	40	24	ug/kg	
56-55-3	Benzo(a)anthracene	ND	40	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	40	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	40	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	40	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	40	18	ug/kg	
218-01-9	Chrysene	ND	40	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	40	17	ug/kg	
206-44-0	Fluoranthene	ND	40	18	ug/kg	
86-73-7	Fluorene	ND	40	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	40	19	ug/kg	
91-20-3	Naphthalene	ND	40	11	ug/kg	
85-01-8	Phenanthrene	14.3	40	13	ug/kg	J
129-00-0	Pyrene	ND	40	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		15-114%
321-60-8	2-Fluorobiphenyl	64%		22-104%
1718-51-0	Terphenyl-d14	74%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> B-10B <b>Lab Sample ID:</b> JD13892-4 <b>Matrix:</b> SO - Soil  <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 81.5
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.5	2.5	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>
Arsenic <sup>a</sup>	9.0	5.1	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Beryllium	1.9	0.25	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>
Cadmium <sup>a</sup>	< 1.3	1.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Chromium	23.2	1.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>
Copper <sup>a</sup>	20.3	6.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Lead <sup>a</sup>	15.5	5.1	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Mercury	< 0.033	0.033	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>
Nickel	22.8	5.1	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>
Selenium <sup>a</sup>	< 5.1	5.1	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Silver <sup>a</sup>	< 1.3	1.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Thallium <sup>a</sup>	< 2.5	2.5	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>
Zinc	102	25	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.4  
4

## Report of Analysis

Client Sample ID:	B-11A	Date Sampled:	09/29/20
Lab Sample ID:	JD13892-5	Date Received:	09/30/20
Matrix:	SO - Soil	Percent Solids:	76.9
Method:	SW846 8260C SW846 5035		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	D271971.D	1	10/06/20 11:08	TDN	10/01/20 08:00	n/a	VD10967
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	1.4 g	5.0 ml	100 ul
Run #2			

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	2500	1000	ug/kg	
71-43-2	Benzene	361	120	110	ug/kg	
74-97-5	Bromochloromethane	ND	1200	140	ug/kg	
75-27-4	Bromodichloromethane	ND	490	110	ug/kg	
75-25-2	Bromoform	ND	1200	340	ug/kg	
74-83-9	Bromomethane	ND	1200	190	ug/kg	
78-93-3	2-Butanone (MEK)	ND	2500	2100	ug/kg	
75-15-0	Carbon disulfide	ND	490	130	ug/kg	
56-23-5	Carbon tetrachloride	ND	490	150	ug/kg	
108-90-7	Chlorobenzene	ND	490	110	ug/kg	
75-00-3	Chloroethane	ND	1200	150	ug/kg	
67-66-3	Chloroform	ND	490	130	ug/kg	
74-87-3	Chloromethane	ND	1200	480	ug/kg	
110-82-7	Cyclohexane	ND	490	160	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	490	170	ug/kg	
124-48-1	Dibromochloromethane	ND	490	140	ug/kg	
106-93-4	1,2-Dibromoethane	ND	250	100	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	250	130	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	250	120	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	250	120	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	1200	180	ug/kg	
75-34-3	1,1-Dichloroethane	ND	250	120	ug/kg	
107-06-2	1,2-Dichloroethane	ND	250	120	ug/kg	
75-35-4	1,1-Dichloroethene	ND	250	160	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	250	210	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	250	150	ug/kg	
78-87-5	1,2-Dichloropropane	ND	490	120	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	490	120	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	490	110	ug/kg	
100-41-4	Ethylbenzene	1690	250	110	ug/kg	
76-13-1	Freon 113	ND	1200	660	ug/kg	
591-78-6	2-Hexanone	ND	1200	520	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> B-11A		
<b>Lab Sample ID:</b> JD13892-5		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 76.9
<b>Project:</b> Former TCCA, Oreland, PA		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	490	350	ug/kg	
79-20-9	Methyl Acetate	ND	1200	340	ug/kg	
108-87-2	Methylcyclohexane	ND	490	220	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	250	120	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	1200	560	ug/kg	
75-09-2	Methylene chloride	ND	1200	650	ug/kg	
100-42-5	Styrene	1140	490	330	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	490	150	ug/kg	
127-18-4	Tetrachloroethene	ND	490	140	ug/kg	
108-88-3	Toluene	1320	250	130	ug/kg	
87-61-6	1,2,3-Trichlorobenzene <sup>b</sup>	ND	1200	620	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	1200	620	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	490	120	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	490	140	ug/kg	
79-01-6	Trichloroethene	ND	250	190	ug/kg	
75-69-4	Trichlorofluoromethane	ND	1200	170	ug/kg	
75-01-4	Vinyl chloride	ND	490	120	ug/kg	
	m,p-Xylene	5900	250	220	ug/kg	
95-47-6	o-Xylene	2880	250	110	ug/kg	
1330-20-7	Xylene (total)	8780	250	140	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-130%
17060-07-0	1,2-Dichloroethane-D4	94%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
108-67-8	Benzene, 1,3,5-trimethyl-	15.69	4500	ug/kg	JN
95-63-6	Benzene, 1,2,4-trimethyl-	16.13	9500	ug/kg	JN
873-49-4	Benzene, cyclopropyl-	16.19	3500	ug/kg	JN
496-11-7	Indane	16.87	14000	ug/kg	JN
95-13-6	Indene	17.11	35000	ug/kg	JN
	Benzofuran, -methyl-isomer	17.87	5200	ug/kg	J
	1H-Indene-dihydro-methyl- isomer	18.17	3200	ug/kg	J
	1H-Indene-dihydro-methyl- isomer	18.34	3700	ug/kg	J
	1H-Indene-methyl- isomer	18.42	9200	ug/kg	J
	1H-Indene-methyl-isomer	18.55	11000	ug/kg	J

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> B-11A	
<b>Lab Sample ID:</b> JD13892-5	<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035	<b>Percent Solids:</b> 76.9
<b>Project:</b> Former TCCA, Oreland, PA	

**VOA TCL List**

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
91-20-3	Naphthalene	19.16	310000	ug/kg	JN
95-15-8	Benzo[b]thiophene	19.28	9900	ug/kg	JN
91-57-6	Naphthalene, 2-methyl-	20.55	69000	ug/kg	JN
	Naphthalene, methyl- isomer	20.78	26000	ug/kg	J
92-52-4	Biphenyl	21.42	3200	ug/kg	JN
	Total TIC, Volatile		516900	ug/kg	J

- (a) Dilution required due to high concentraton of non-target compound.
- (b) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4





## Report of Analysis

<b>Client Sample ID:</b> B-11A	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-5	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 76.9
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.7	2.7	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	101	5.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium	1.1	0.27	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.3	1.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	20.9	1.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	31.4	6.6	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	258	5.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.15	0.036	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	14.8	5.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	8.6	5.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 1.3	1.3	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.7	2.7	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	199	26	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit



## Report of Analysis

Client Sample ID: B-12A		Date Sampled: 09/29/20
Lab Sample ID: JD13892-6		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 82.0
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	4.4	3.1	ug/kg	
79-20-9	Methyl Acetate	ND	11	3.0	ug/kg	
108-87-2	Methylcyclohexane	ND	4.4	1.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.2	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	11	4.9	ug/kg	
75-09-2	Methylene chloride	ND	11	5.7	ug/kg	
100-42-5	Styrene	ND	4.4	2.9	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.4	1.3	ug/kg	
127-18-4	Tetrachloroethene	ND	4.4	1.3	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	11	5.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	11	5.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.4	1.1	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.4	1.2	ug/kg	
79-01-6	Trichloroethene	ND	2.2	1.7	ug/kg	
75-69-4	Trichlorofluoromethane	ND	11	1.5	ug/kg	
75-01-4	Vinyl chloride	ND	4.4	1.0	ug/kg	
	m,p-Xylene	ND	2.2	2.0	ug/kg	
95-47-6	o-Xylene	ND	2.2	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-130%
17060-07-0	1,2-Dichloroethane-D4	102%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	102%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

# Report of Analysis

<b>Client Sample ID:</b> B-12A		
<b>Lab Sample ID:</b> JD13892-6		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8270D SW846 3546		<b>Percent Solids:</b> 82.0
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493933.D	5	10/06/20 01:15	HSS	10/02/20 09:45	OP29800	E6P3139
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	102	200	70	ug/kg	J
208-96-8	Acenaphthylene	186	200	100	ug/kg	J
120-12-7	Anthracene	341	200	120	ug/kg	
56-55-3	Benzo(a)anthracene	756	200	57	ug/kg	
50-32-8	Benzo(a)pyrene	791	200	92	ug/kg	
205-99-2	Benzo(b)fluoranthene	1220	200	90	ug/kg	
191-24-2	Benzo(g,h,i)perylene	806	200	100	ug/kg	
207-08-9	Benzo(k)fluoranthene	449	200	95	ug/kg	
218-01-9	Chrysene	1020	200	64	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	189	200	90	ug/kg	J
206-44-0	Fluoranthene	2000	200	90	ug/kg	
86-73-7	Fluorene	141	200	93	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	628	200	95	ug/kg	
91-20-3	Naphthalene	206	200	57	ug/kg	
85-01-8	Phenanthrene	1530	200	68	ug/kg	
129-00-0	Pyrene	1490	200	65	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	43%		15-114%
321-60-8	2-Fluorobiphenyl	48%		22-104%
1718-51-0	Terphenyl-d14	44%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> B-12A <b>Lab Sample ID:</b> JD13892-6 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 82.0
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 24	24	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 24	24	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	11.0	2.4	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	11.8	6.0	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	267	1.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	5760	30	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	4010	24	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	1.2	0.15	mg/kg	5	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	108	4.8	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 24	24	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 6.0	6.0	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 12	12	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	9180	240	mg/kg	10	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

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RL = Reporting Limit

4.6  
4

## Report of Analysis

Client Sample ID: B-12B	Date Sampled: 09/29/20
Lab Sample ID: JD13892-7	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 80.4
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234309.D	1	10/03/20 16:22	TDN	10/01/20 08:00	n/a	VI9486

Run #1	Initial Weight
Run #2	5.1 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	5.0	ug/kg	
71-43-2	Benzene	ND	0.61	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	6.1	0.68	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.52	ug/kg	
75-25-2	Bromoform	ND	6.1	1.7	ug/kg	
74-83-9	Bromomethane	ND	6.1	0.93	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	10	ug/kg	
75-15-0	Carbon disulfide	ND	2.4	0.65	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.4	0.75	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.56	ug/kg	
75-00-3	Chloroethane	ND	6.1	0.72	ug/kg	
67-66-3	Chloroform	ND	2.4	0.63	ug/kg	
74-87-3	Chloromethane	ND	6.1	2.4	ug/kg	
110-82-7	Cyclohexane	ND	2.4	0.80	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.85	ug/kg	
124-48-1	Dibromochloromethane	ND	2.4	0.68	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.67	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.60	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.60	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.1	0.89	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.60	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.57	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.80	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.75	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.58	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.58	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.56	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.55	ug/kg	
76-13-1	Freon 113	ND	6.1	3.3	ug/kg	
591-78-6	2-Hexanone	ND	6.1	2.6	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-12B <b>Lab Sample ID:</b> JD13892-7 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 80.4
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
79-20-9	Methyl Acetate	ND	6.1	1.7	ug/kg	
108-87-2	Methylcyclohexane	ND	2.4	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.57	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.1	2.8	ug/kg	
75-09-2	Methylene chloride	ND	6.1	3.2	ug/kg	
100-42-5	Styrene	ND	2.4	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.73	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.71	ug/kg	
108-88-3	Toluene	ND	1.2	0.64	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.1	3.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.1	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.59	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.68	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.93	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.1	0.83	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.59	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.56	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.71	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-130%
17060-07-0	1,2-Dichloroethane-D4	103%		75-131%
2037-26-5	Toluene-D8	101%		81-121%
460-00-4	4-Bromofluorobenzene	106%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4



# Report of Analysis

<b>Client Sample ID:</b> B-12B		
<b>Lab Sample ID:</b> JD13892-7		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8270D SW846 3546		<b>Percent Solids:</b> 80.4
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493931.D	1	10/06/20 00:28	HSS	10/02/20 09:45	OP29800	E6P3139
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	41	14	ug/kg	
208-96-8	Acenaphthylene	ND	41	21	ug/kg	
120-12-7	Anthracene	ND	41	25	ug/kg	
56-55-3	Benzo(a)anthracene	17.7	41	12	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	41	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	21.1	41	18	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	40.6	41	20	ug/kg	J
207-08-9	Benzo(k)fluoranthene	ND	41	19	ug/kg	
218-01-9	Chrysene	17.1	41	13	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	41	18	ug/kg	
206-44-0	Fluoranthene	28.1	41	18	ug/kg	J
86-73-7	Fluorene	26.1	41	19	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	41	19	ug/kg	
91-20-3	Naphthalene	12.6	41	11	ug/kg	J
85-01-8	Phenanthrene	25.6	41	14	ug/kg	J
129-00-0	Pyrene	21.7	41	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	46%		15-114%
321-60-8	2-Fluorobiphenyl	47%		22-104%
1718-51-0	Terphenyl-d14	46%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> B-12B <b>Lab Sample ID:</b> JD13892-7 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 80.4
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	6.1	1.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.1	3.1	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	17.4	1.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	118	16	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	47.0	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.082	0.040	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	38.8	5.0	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 3.1	3.1	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 25	25	mg/kg	20	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	210	25	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.7  
4

## Report of Analysis

Client Sample ID: B-13A	Date Sampled: 09/29/20
Lab Sample ID: JD13892-8	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 87.5
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234312.D	1	10/03/20 17:49	TDN	10/01/20 08:00	n/a	VI9486

Run #1	Initial Weight
Run #2	3.7 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	16.2	15	6.4	ug/kg	
71-43-2	Benzene	ND	0.77	0.70	ug/kg	
74-97-5	Bromochloromethane	ND	7.7	0.86	ug/kg	
75-27-4	Bromodichloromethane	ND	3.1	0.66	ug/kg	
75-25-2	Bromoform	ND	7.7	2.1	ug/kg	
74-83-9	Bromomethane	ND	7.7	1.2	ug/kg	
78-93-3	2-Butanone (MEK)	ND	15	13	ug/kg	
75-15-0	Carbon disulfide	ND	3.1	0.83	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.1	0.95	ug/kg	
108-90-7	Chlorobenzene	ND	3.1	0.71	ug/kg	
75-00-3	Chloroethane	ND	7.7	0.91	ug/kg	
67-66-3	Chloroform	ND	3.1	0.80	ug/kg	
74-87-3	Chloromethane	ND	7.7	3.0	ug/kg	
110-82-7	Cyclohexane	ND	3.1	1.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.1	1.1	ug/kg	
124-48-1	Dibromochloromethane	ND	3.1	0.86	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.5	0.65	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.5	0.84	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.5	0.77	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.5	0.76	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.7	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.5	0.76	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.5	0.73	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.5	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	1.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.94	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.1	0.73	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.1	0.73	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.1	0.71	ug/kg	
100-41-4	Ethylbenzene	ND	1.5	0.70	ug/kg	
76-13-1	Freon 113	ND	7.7	4.1	ug/kg	
591-78-6	2-Hexanone	ND	7.7	3.3	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-13A <b>Lab Sample ID:</b> JD13892-8 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 87.5
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.1	2.2	ug/kg	
79-20-9	Methyl Acetate	ND	7.7	2.1	ug/kg	
108-87-2	Methylcyclohexane	ND	3.1	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.5	0.72	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.7	3.5	ug/kg	
75-09-2	Methylene chloride	ND	7.7	4.0	ug/kg	
100-42-5	Styrene	ND	3.1	2.1	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.1	0.93	ug/kg	
127-18-4	Tetrachloroethene	ND	3.1	0.90	ug/kg	
108-88-3	Toluene	ND	1.5	0.81	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.7	3.9	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.7	3.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.1	0.75	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.1	0.86	ug/kg	
79-01-6	Trichloroethene	ND	1.5	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.7	1.1	ug/kg	
75-01-4	Vinyl chloride	ND	3.1	0.74	ug/kg	
	m,p-Xylene	ND	1.5	1.4	ug/kg	
95-47-6	o-Xylene	ND	1.5	0.71	ug/kg	
1330-20-7	Xylene (total)	ND	1.5	0.90	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-130%
17060-07-0	1,2-Dichloroethane-D4	105%		75-131%
2037-26-5	Toluene-D8	101%		81-121%
460-00-4	4-Bromofluorobenzene	103%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.8  
4

# Report of Analysis

<b>Client Sample ID:</b> B-13A		<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-8		<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 87.5
<b>Method:</b> SW846 8270D SW846 3546		
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493896.D	1	10/02/20 21:39	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	27.5	38	13	ug/kg	J
208-96-8	Acenaphthylene	295	38	19	ug/kg	
120-12-7	Anthracene	274	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	751	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	914	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	1420	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	1250	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	455	38	18	ug/kg	
218-01-9	Chrysene	925	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	214	38	17	ug/kg	
206-44-0	Fluoranthene	1520	38	17	ug/kg	
86-73-7	Fluorene	44.8	38	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	907	38	18	ug/kg	
91-20-3	Naphthalene	155	38	11	ug/kg	
85-01-8	Phenanthrene	743	38	13	ug/kg	
129-00-0	Pyrene	1230	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		15-114%
321-60-8	2-Fluorobiphenyl	73%		22-104%
1718-51-0	Terphenyl-d14	70%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.8  
4

## Report of Analysis

<b>Client Sample ID:</b> B-13A <b>Lab Sample ID:</b> JD13892-8 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 87.5
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	16.2	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	6.0	1.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	7.0	2.9	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	253	1.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	643	14	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	1300	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.35	0.037	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	69.5	4.6	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 2.9	2.9	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 5.8	5.8	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	4420	110	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.8  
4

## Report of Analysis

Client Sample ID: B-13B	Date Sampled: 09/29/20
Lab Sample ID: JD13892-9	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 81.1
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234310.D	1	10/03/20 16:51	TDN	10/01/20 10:56	n/a	VI9486

Run #1	Initial Weight
Run #2	4.6 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	13	5.5	ug/kg	
71-43-2	Benzene	ND	0.67	0.61	ug/kg	
74-97-5	Bromochloromethane	ND	6.7	0.75	ug/kg	
75-27-4	Bromodichloromethane	ND	2.7	0.57	ug/kg	
75-25-2	Bromoform	ND	6.7	1.8	ug/kg	
74-83-9	Bromomethane	ND	6.7	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	13	11	ug/kg	
75-15-0	Carbon disulfide	ND	2.7	0.72	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.7	0.83	ug/kg	
108-90-7	Chlorobenzene	ND	2.7	0.62	ug/kg	
75-00-3	Chloroethane	ND	6.7	0.79	ug/kg	
67-66-3	Chloroform	ND	2.7	0.70	ug/kg	
74-87-3	Chloromethane	ND	6.7	2.6	ug/kg	
110-82-7	Cyclohexane	ND	2.7	0.88	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.93	ug/kg	
124-48-1	Dibromochloromethane	ND	2.7	0.75	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.3	0.56	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.3	0.73	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.3	0.66	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.3	0.66	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.7	0.97	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.3	0.66	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.3	0.63	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.3	0.88	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.3	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.82	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.7	0.63	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.7	0.64	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.7	0.61	ug/kg	
100-41-4	Ethylbenzene	ND	1.3	0.61	ug/kg	
76-13-1	Freon 113	ND	6.7	3.6	ug/kg	
591-78-6	2-Hexanone	ND	6.7	2.8	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-13B <b>Lab Sample ID:</b> JD13892-9 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 81.1
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.7	1.9	ug/kg	
79-20-9	Methyl Acetate	ND	6.7	1.9	ug/kg	
108-87-2	Methylcyclohexane	ND	2.7	1.2	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.3	0.63	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.7	3.0	ug/kg	
75-09-2	Methylene chloride	ND	6.7	3.5	ug/kg	
100-42-5	Styrene	ND	2.7	1.8	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.7	0.80	ug/kg	
127-18-4	Tetrachloroethene	ND	2.7	0.78	ug/kg	
108-88-3	Toluene	ND	1.3	0.70	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.7	3.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.7	3.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.7	0.65	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.7	0.74	ug/kg	
79-01-6	Trichloroethene	ND	1.3	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.7	0.92	ug/kg	
75-01-4	Vinyl chloride	ND	2.7	0.64	ug/kg	
	m,p-Xylene	ND	1.3	1.2	ug/kg	
95-47-6	o-Xylene	ND	1.3	0.61	ug/kg	
1330-20-7	Xylene (total)	ND	1.3	0.78	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-130%
17060-07-0	1,2-Dichloroethane-D4	104%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	103%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.9  
4



# Report of Analysis

<b>Client Sample ID:</b> B-13B		
<b>Lab Sample ID:</b> JD13892-9		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8270D SW846 3546		<b>Percent Solids:</b> 81.1
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493895.D	1	10/02/20 21:15	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	27.3	41	14	ug/kg	J
208-96-8	Acenaphthylene	115	41	21	ug/kg	
120-12-7	Anthracene	134	41	25	ug/kg	
56-55-3	Benzo(a)anthracene	461	41	11	ug/kg	
50-32-8	Benzo(a)pyrene	515	41	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	714	41	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	408	41	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	217	41	19	ug/kg	
218-01-9	Chrysene	541	41	13	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	83.8	41	18	ug/kg	
206-44-0	Fluoranthene	862	41	18	ug/kg	
86-73-7	Fluorene	51.4	41	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	332	41	19	ug/kg	
91-20-3	Naphthalene	1130	41	11	ug/kg	
85-01-8	Phenanthrene	455	41	14	ug/kg	
129-00-0	Pyrene	758	41	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	62%		15-114%
321-60-8	2-Fluorobiphenyl	68%		22-104%
1718-51-0	Terphenyl-d14	73%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.9  
4

# Report of Analysis

<b>Client Sample ID:</b> B-13B	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-9	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 81.1
<b>Project:</b> Former TCCA, Oreland, PA	

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	2.9	1.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.1	3.1	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	42.1	1.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	81.7	16	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	298	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.064	0.041	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	25.7	5.0	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 3.1	3.1	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 6.2	6.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	318	25	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.9  
4

# Report of Analysis

<b>Client Sample ID:</b> B-14A		
<b>Lab Sample ID:</b> JD13892-10		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 80.3
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I234313.D	1	10/03/20 18:18	TDN	10/01/20 10:56	n/a	VI9486
Run #2							

Run #	Initial Weight
Run #1	3.6 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	17	7.2	ug/kg	
71-43-2	Benzene	ND	0.86	0.79	ug/kg	
74-97-5	Bromochloromethane	ND	8.6	0.97	ug/kg	
75-27-4	Bromodichloromethane	ND	3.5	0.74	ug/kg	
75-25-2	Bromoform	ND	8.6	2.4	ug/kg	
74-83-9	Bromomethane	ND	8.6	1.3	ug/kg	
78-93-3	2-Butanone (MEK)	ND	17	15	ug/kg	
75-15-0	Carbon disulfide	ND	3.5	0.93	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.5	1.1	ug/kg	
108-90-7	Chlorobenzene	ND	3.5	0.79	ug/kg	
75-00-3	Chloroethane	ND	8.6	1.0	ug/kg	
67-66-3	Chloroform	1.2	3.5	0.90	ug/kg	J
74-87-3	Chloromethane	ND	8.6	3.4	ug/kg	
110-82-7	Cyclohexane	ND	3.5	1.1	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.5	1.2	ug/kg	
124-48-1	Dibromochloromethane	ND	3.5	0.97	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.7	0.73	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.94	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.86	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.85	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	8.6	1.3	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.7	0.86	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.7	0.81	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.7	1.1	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.7	1.5	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.7	1.1	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.5	0.82	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.5	0.82	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.5	0.79	ug/kg	
100-41-4	Ethylbenzene	ND	1.7	0.78	ug/kg	
76-13-1	Freon 113	ND	8.6	4.6	ug/kg	
591-78-6	2-Hexanone	ND	8.6	3.7	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.10 4

## Report of Analysis

Client Sample ID: B-14A		Date Sampled: 09/29/20
Lab Sample ID: JD13892-10		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 80.3
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.5	2.5	ug/kg	
79-20-9	Methyl Acetate	ND	8.6	2.4	ug/kg	
108-87-2	Methylcyclohexane	ND	3.5	1.5	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.7	0.81	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	8.6	3.9	ug/kg	
75-09-2	Methylene chloride	ND	8.6	4.5	ug/kg	
100-42-5	Styrene	ND	3.5	2.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.5	1.0	ug/kg	
127-18-4	Tetrachloroethene	ND	3.5	1.0	ug/kg	
108-88-3	Toluene	ND	1.7	0.91	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	8.6	4.3	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	8.6	4.3	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.5	0.84	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.5	0.96	ug/kg	
79-01-6	Trichloroethene	ND	1.7	1.3	ug/kg	
75-69-4	Trichlorofluoromethane	ND	8.6	1.2	ug/kg	
75-01-4	Vinyl chloride	ND	3.5	0.83	ug/kg	
	m,p-Xylene	ND	1.7	1.5	ug/kg	
95-47-6	o-Xylene	ND	1.7	0.79	ug/kg	
1330-20-7	Xylene (total)	ND	1.7	1.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-130%
17060-07-0	1,2-Dichloroethane-D4	102%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	104%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.10  
4

## Report of Analysis

Client Sample ID: B-14A		Date Sampled: 09/29/20
Lab Sample ID: JD13892-10		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 80.3
Method: SW846 8270D SW846 3546		
Project: Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493894.D	1	10/02/20 20:52	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	14.9	41	14	ug/kg	J
208-96-8	Acenaphthylene	177	41	21	ug/kg	
120-12-7	Anthracene	230	41	25	ug/kg	
56-55-3	Benzo(a)anthracene	681	41	12	ug/kg	
50-32-8	Benzo(a)pyrene	814	41	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	1090	41	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	598	41	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	348	41	19	ug/kg	
218-01-9	Chrysene	731	41	13	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	140	41	18	ug/kg	
206-44-0	Fluoranthene	1120	41	18	ug/kg	
86-73-7	Fluorene	30.0	41	19	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	519	41	19	ug/kg	
91-20-3	Naphthalene	67.3	41	12	ug/kg	
85-01-8	Phenanthrene	374	41	14	ug/kg	
129-00-0	Pyrene	926	41	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		15-114%
321-60-8	2-Fluorobiphenyl	68%		22-104%
1718-51-0	Terphenyl-d14	69%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.10  
4

## Report of Analysis

<b>Client Sample ID:</b> B-14A <b>Lab Sample ID:</b> JD13892-10 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 80.3
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	2.4	1.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.0	3.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium <sup>a</sup>	21.0	6.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	< 15	15	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead	20.7	2.4	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.033	0.033	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel <sup>a</sup>	< 24	24	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 3.0	3.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>b</sup>	< 6.0	6.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	< 120	120	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

- (a) Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).
- (b) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

4.10  
4

# Report of Analysis

<b>Client Sample ID:</b> B-14B		
<b>Lab Sample ID:</b> JD13892-11		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 80.4
<b>Project:</b> Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234318.D	1	10/03/20 20:44	TDN	10/01/20 11:15	n/a	VI9486

Run #1	Initial Weight
Run #2	3.4 g

### VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	18	7.6	ug/kg	
71-43-2	Benzene	ND	0.91	0.83	ug/kg	
74-97-5	Bromochloromethane	ND	9.1	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	3.7	0.78	ug/kg	
75-25-2	Bromoform	ND	9.1	2.5	ug/kg	
74-83-9	Bromomethane	ND	9.1	1.4	ug/kg	
78-93-3	2-Butanone (MEK)	ND	18	16	ug/kg	
75-15-0	Carbon disulfide	ND	3.7	0.98	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.7	1.1	ug/kg	
108-90-7	Chlorobenzene	ND	3.7	0.84	ug/kg	
75-00-3	Chloroethane	ND	9.1	1.1	ug/kg	
67-66-3	Chloroform	ND	3.7	0.95	ug/kg	
74-87-3	Chloromethane	ND	9.1	3.6	ug/kg	
110-82-7	Cyclohexane	ND	3.7	1.2	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.7	1.3	ug/kg	
124-48-1	Dibromochloromethane	ND	3.7	1.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.8	0.77	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.8	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.91	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.90	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	9.1	1.3	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.8	0.91	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.8	0.86	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.8	1.2	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.8	1.5	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.8	1.1	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.7	0.87	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.7	0.87	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.7	0.84	ug/kg	
100-41-4	Ethylbenzene	ND	1.8	0.83	ug/kg	
76-13-1	Freon 113	ND	9.1	4.9	ug/kg	
591-78-6	2-Hexanone	ND	9.1	3.9	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.11  
4

## Report of Analysis

Client Sample ID: B-14B		Date Sampled: 09/29/20
Lab Sample ID: JD13892-11		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 80.4
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.7	2.6	ug/kg	
79-20-9	Methyl Acetate	ND	9.1	2.5	ug/kg	
108-87-2	Methylcyclohexane	ND	3.7	1.6	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.8	0.86	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	9.1	4.2	ug/kg	
75-09-2	Methylene chloride	ND	9.1	4.8	ug/kg	
100-42-5	Styrene	ND	3.7	2.4	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.7	1.1	ug/kg	
127-18-4	Tetrachloroethene	ND	3.7	1.1	ug/kg	
108-88-3	Toluene	ND	1.8	0.96	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	9.1	4.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	9.1	4.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.7	0.88	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.7	1.0	ug/kg	
79-01-6	Trichloroethene	ND	1.8	1.4	ug/kg	
75-69-4	Trichlorofluoromethane	ND	9.1	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	3.7	0.88	ug/kg	
	m,p-Xylene	ND	1.8	1.6	ug/kg	
95-47-6	o-Xylene	ND	1.8	0.84	ug/kg	
1330-20-7	Xylene (total)	ND	1.8	1.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%
17060-07-0	1,2-Dichloroethane-D4	98%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	99%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.11  
4





## Report of Analysis

<b>Client Sample ID:</b> B-14B	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-11	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 80.4
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium <sup>a</sup>	< 1.2	1.2	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 3.0	3.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium <sup>a</sup>	< 6.1	6.1	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	< 15	15	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead	13.0	2.4	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.039	0.039	mg/kg	1	10/01/20	10/01/20	LL SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel <sup>a</sup>	< 24	24	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 3.0	3.0	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium	< 1.2	1.2	mg/kg	1	10/01/20	10/02/20	ND SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Zinc <sup>a</sup>	< 120	120	mg/kg	5	10/01/20	10/05/20	ND SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

RL = Reporting Limit

4.11  
4

# Report of Analysis

<b>Client Sample ID:</b> B-15A		
<b>Lab Sample ID:</b> JD13892-12		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 82.1
<b>Project:</b> Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234319.D	1	10/03/20 21:13	TDN	10/01/20 11:15	n/a	VI9486

Run #1	Initial Weight
Run #2	4.1 g

### VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	15	6.1	ug/kg	
71-43-2	Benzene	ND	0.74	0.68	ug/kg	
74-97-5	Bromochloromethane	ND	7.4	0.83	ug/kg	
75-27-4	Bromodichloromethane	ND	3.0	0.64	ug/kg	
75-25-2	Bromoform	ND	7.4	2.0	ug/kg	
74-83-9	Bromomethane	ND	7.4	1.1	ug/kg	
78-93-3	2-Butanone (MEK)	ND	15	13	ug/kg	
75-15-0	Carbon disulfide	ND	3.0	0.79	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.0	0.92	ug/kg	
108-90-7	Chlorobenzene	ND	3.0	0.68	ug/kg	
75-00-3	Chloroethane	ND	7.4	0.88	ug/kg	
67-66-3	Chloroform	ND	3.0	0.77	ug/kg	
74-87-3	Chloromethane	ND	7.4	2.9	ug/kg	
110-82-7	Cyclohexane	ND	3.0	0.98	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	3.0	0.83	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.5	0.63	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.5	0.81	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.5	0.74	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.5	0.73	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.4	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.5	0.74	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.5	0.70	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.5	0.97	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	1.2	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.91	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.0	0.70	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.0	0.71	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.0	0.68	ug/kg	
100-41-4	Ethylbenzene	ND	1.5	0.67	ug/kg	
76-13-1	Freon 113	ND	7.4	4.0	ug/kg	
591-78-6	2-Hexanone	ND	7.4	3.1	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.12  
4

## Report of Analysis

Client Sample ID: B-15A		Date Sampled: 09/29/20
Lab Sample ID: JD13892-12		Date Received: 09/30/20
Matrix: SO - Soil		Percent Solids: 82.1
Method: SW846 8260C SW846 5035		
Project: Former TCCA, Oreland, PA		

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.0	2.1	ug/kg	
79-20-9	Methyl Acetate	ND	7.4	2.1	ug/kg	
108-87-2	Methylcyclohexane	ND	3.0	1.3	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.5	0.70	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.4	3.4	ug/kg	
75-09-2	Methylene chloride	ND	7.4	3.9	ug/kg	
100-42-5	Styrene	ND	3.0	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.0	0.89	ug/kg	
127-18-4	Tetrachloroethene	ND	3.0	0.86	ug/kg	
108-88-3	Toluene	ND	1.5	0.78	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.4	3.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.4	3.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.0	0.72	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.0	0.82	ug/kg	
79-01-6	Trichloroethene	ND	1.5	1.1	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.4	1.0	ug/kg	
75-01-4	Vinyl chloride	ND	3.0	0.71	ug/kg	
	m,p-Xylene	ND	1.5	1.3	ug/kg	
95-47-6	o-Xylene	ND	1.5	0.68	ug/kg	
1330-20-7	Xylene (total)	ND	1.5	0.87	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-130%
17060-07-0	1,2-Dichloroethane-D4	102%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	105%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.12  
4

## Report of Analysis

<b>Client Sample ID:</b> B-15A <b>Lab Sample ID:</b> JD13892-12 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270D SW846 3546 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 82.1
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493891.D	1	10/02/20 19:42	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.3 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	13	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	38.8	39	11	ug/kg	J
50-32-8	Benzo(a)pyrene	42.7	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	45.6	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	32.7	39	19	ug/kg	J
207-08-9	Benzo(k)fluoranthene	ND	39	18	ug/kg	
218-01-9	Chrysene	36.4	39	12	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	58.1	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	23.4	39	18	ug/kg	J
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	35.0	39	13	ug/kg	J
129-00-0	Pyrene	68.1	39	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%		15-114%
321-60-8	2-Fluorobiphenyl	55%		22-104%
1718-51-0	Terphenyl-d14	55%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.12  
4

## Report of Analysis

<b>Client Sample ID:</b> B-15A <b>Lab Sample ID:</b> JD13892-12 <b>Matrix:</b> SO - Soil <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 82.1
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**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.3	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Arsenic	6.7	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Beryllium	1.0	0.23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Cadmium	< 0.58	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Chromium	37.5	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Copper	34.7	2.9	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Lead	15.1	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Mercury	< 0.031	0.031	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup> SW846 7471B <sup>4</sup>
Nickel	16.3	4.6	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Selenium	< 2.3	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Silver	< 0.58	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Thallium	< 1.2	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Zinc	48.5	23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Prep QC Batch: MP23030
- (4) Prep QC Batch: MP23064

RL = Reporting Limit

4.12  
4

## Report of Analysis

Client Sample ID: B-15B	Date Sampled: 09/29/20
Lab Sample ID: JD13892-13	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 83.3
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234320.D	1	10/03/20 21:42	TDN	10/01/20 11:15	n/a	VI9486

Run #1	Initial Weight
Run #2	5.4 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	4.6	ug/kg	
71-43-2	Benzene	ND	0.56	0.51	ug/kg	
74-97-5	Bromochloromethane	ND	5.6	0.62	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.48	ug/kg	
75-25-2	Bromoform	ND	5.6	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.6	0.85	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	9.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.59	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.69	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.51	ug/kg	
75-00-3	Chloroethane	ND	5.6	0.66	ug/kg	
67-66-3	Chloroform	ND	2.2	0.58	ug/kg	
74-87-3	Chloromethane	ND	5.6	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.2	0.73	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.77	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.62	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.47	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.61	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.55	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.6	0.81	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.52	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.73	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.93	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.68	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.53	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.53	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.51	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.50	ug/kg	
76-13-1	Freon 113	ND	5.6	3.0	ug/kg	
591-78-6	2-Hexanone	ND	5.6	2.4	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-15B		
<b>Lab Sample ID:</b> JD13892-13		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 83.3
<b>Project:</b> Former TCCA, Oreland, PA		

### VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.2	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.6	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	2.2	0.97	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.52	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.6	2.5	ug/kg	
75-09-2	Methylene chloride	ND	5.6	2.9	ug/kg	
100-42-5	Styrene	ND	2.2	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.67	ug/kg	
127-18-4	Tetrachloroethene	ND	2.2	0.64	ug/kg	
108-88-3	Toluene	ND	1.1	0.58	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.6	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.54	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.62	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.85	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.6	0.76	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.53	ug/kg	
	m,p-Xylene	ND	1.1	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.51	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.65	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-130%
17060-07-0	1,2-Dichloroethane-D4	104%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	101%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> B-15B <b>Lab Sample ID:</b> JD13892-13 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8270D SW846 3546 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 83.3
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493890.D	1	10/02/20 19:18	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	14	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	ND	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	39	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	18	ug/kg	
218-01-9	Chrysene	ND	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	ND	39	18	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	39	19	ug/kg	
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	ND	39	13	ug/kg	
129-00-0	Pyrene	ND	39	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		15-114%
321-60-8	2-Fluorobiphenyl	73%		22-104%
1718-51-0	Terphenyl-d14	72%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.13  
4

## Report of Analysis

<b>Client Sample ID:</b> B-15B	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-13	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 83.3
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 2.4	2.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Arsenic <sup>a</sup>	9.4	4.7	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Beryllium	1.0	0.24	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium <sup>a</sup>	< 1.2	1.2	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Chromium	46.2	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper <sup>a</sup>	20.4	5.9	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Lead <sup>a</sup>	10.5	4.7	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	< 0.039	0.039	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup>	SW846 7471B <sup>5</sup>
Nickel	17.1	4.7	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium <sup>a</sup>	< 4.7	4.7	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Silver <sup>a</sup>	< 1.2	1.2	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Thallium <sup>a</sup>	< 2.4	2.4	mg/kg	2	10/01/20	10/05/20	ND	SW846 6010D <sup>3</sup>	SW846 3050B <sup>4</sup>
Zinc	46.6	24	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>4</sup>

- (1) Instrument QC Batch: MA49384
- (2) Instrument QC Batch: MA49396
- (3) Instrument QC Batch: MA49412
- (4) Prep QC Batch: MP23030
- (5) Prep QC Batch: MP23064

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

## Report of Analysis

Client Sample ID: B-16A	Date Sampled: 09/29/20
Lab Sample ID: JD13892-14	Date Received: 09/30/20
Matrix: SO - Soil	Percent Solids: 82.3
Method: SW846 8260C SW846 5035	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234321.D	1	10/03/20 22:11	TDN	10/01/20 11:15	n/a	VI9486

Run #1	Initial Weight
Run #2	3.9 g

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	16	6.4	ug/kg	
71-43-2	Benzene	ND	0.78	0.71	ug/kg	
74-97-5	Bromochloromethane	ND	7.8	0.87	ug/kg	
75-27-4	Bromodichloromethane	ND	3.1	0.67	ug/kg	
75-25-2	Bromoform	ND	7.8	2.1	ug/kg	
74-83-9	Bromomethane	ND	7.8	1.2	ug/kg	
78-93-3	2-Butanone (MEK)	ND	16	13	ug/kg	
75-15-0	Carbon disulfide	ND	3.1	0.83	ug/kg	
56-23-5	Carbon tetrachloride	ND	3.1	0.96	ug/kg	
108-90-7	Chlorobenzene	ND	3.1	0.72	ug/kg	
75-00-3	Chloroethane	ND	7.8	0.92	ug/kg	
67-66-3	Chloroform	ND	3.1	0.81	ug/kg	
74-87-3	Chloromethane	ND	7.8	3.1	ug/kg	
110-82-7	Cyclohexane	ND	3.1	1.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.1	1.1	ug/kg	
124-48-1	Dibromochloromethane	ND	3.1	0.87	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.6	0.66	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.6	0.85	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.6	0.77	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.6	0.77	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.8	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.6	0.77	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.6	0.73	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.6	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.6	1.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.95	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.1	0.74	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.1	0.74	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.1	0.71	ug/kg	
100-41-4	Ethylbenzene	ND	1.6	0.71	ug/kg	
76-13-1	Freon 113	ND	7.8	4.2	ug/kg	
591-78-6	2-Hexanone	ND	7.8	3.3	ug/kg	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B-16A <b>Lab Sample ID:</b> JD13892-14 <b>Matrix:</b> SO - Soil <b>Method:</b> SW846 8260C SW846 5035 <b>Project:</b> Former TCCA, Oreland, PA	<b>Date Sampled:</b> 09/29/20 <b>Date Received:</b> 09/30/20 <b>Percent Solids:</b> 82.3
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**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	3.1	2.2	ug/kg	
79-20-9	Methyl Acetate	ND	7.8	2.2	ug/kg	
108-87-2	Methylcyclohexane	ND	3.1	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.6	0.73	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.8	3.5	ug/kg	
75-09-2	Methylene chloride	ND	7.8	4.1	ug/kg	
100-42-5	Styrene	ND	3.1	2.1	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.1	0.93	ug/kg	
127-18-4	Tetrachloroethene	ND	3.1	0.90	ug/kg	
108-88-3	Toluene	ND	1.6	0.82	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.8	3.9	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.8	3.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.1	0.75	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.1	0.86	ug/kg	
79-01-6	Trichloroethene	ND	1.6	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.8	1.1	ug/kg	
75-01-4	Vinyl chloride	ND	3.1	0.75	ug/kg	
	m,p-Xylene	ND	1.6	1.4	ug/kg	
95-47-6	o-Xylene	ND	1.6	0.71	ug/kg	
1330-20-7	Xylene (total)	ND	1.6	0.91	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-130%
17060-07-0	1,2-Dichloroethane-D4	103%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	106%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.14  
4

## Report of Analysis

<b>Client Sample ID:</b> B-16A	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-14	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 82.3
<b>Method:</b> SW846 8270D SW846 3546	
<b>Project:</b> Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493892.D	1	10/02/20 20:05	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

**BN PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	14	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	65.5	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	71.8	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	93.5	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	57.3	39	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	32.3	39	18	ug/kg	J
218-01-9	Chrysene	79.3	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	154	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	45.1	39	18	ug/kg	
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	72.0	39	13	ug/kg	
129-00-0	Pyrene	130	39	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		15-114%
321-60-8	2-Fluorobiphenyl	69%		22-104%
1718-51-0	Terphenyl-d14	68%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.14  
4

## Report of Analysis

<b>Client Sample ID:</b> B-16A	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-14	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 82.3
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.3	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Arsenic	6.1	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Beryllium	1.1	0.23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Cadmium	< 0.58	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Chromium	19.3	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Copper	9.9	2.9	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Lead	27.7	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Mercury	< 0.037	0.037	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup> SW846 7471B <sup>4</sup>
Nickel	13.1	4.7	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Selenium	< 2.3	2.3	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Silver	< 0.58	0.58	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Thallium	< 1.2	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Zinc	41.6	23	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA49384

(2) Instrument QC Batch: MA49396

(3) Prep QC Batch: MP23030

(4) Prep QC Batch: MP23064

RL = Reporting Limit

4.14  
4

# Report of Analysis

<b>Client Sample ID:</b> B-16B		
<b>Lab Sample ID:</b> JD13892-15		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035		<b>Percent Solids:</b> 82.8
<b>Project:</b> Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I234322.D	1	10/03/20 22:40	TDN	10/01/20 11:15	n/a	VI9486

Run #1	Initial Weight
Run #2	5.3 g

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	4.7	ug/kg	
71-43-2	Benzene	ND	0.57	0.52	ug/kg	
74-97-5	Bromochloromethane	ND	5.7	0.64	ug/kg	
75-27-4	Bromodichloromethane	ND	2.3	0.49	ug/kg	
75-25-2	Bromoform	ND	5.7	1.5	ug/kg	
74-83-9	Bromomethane	ND	5.7	0.87	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	9.7	ug/kg	
75-15-0	Carbon disulfide	ND	2.3	0.61	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.3	0.70	ug/kg	
108-90-7	Chlorobenzene	ND	2.3	0.52	ug/kg	
75-00-3	Chloroethane	ND	5.7	0.67	ug/kg	
67-66-3	Chloroform	ND	2.3	0.59	ug/kg	
74-87-3	Chloromethane	ND	5.7	2.2	ug/kg	
110-82-7	Cyclohexane	ND	2.3	0.75	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.3	0.79	ug/kg	
124-48-1	Dibromochloromethane	ND	2.3	0.64	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.48	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.62	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.57	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.56	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.7	0.83	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.56	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.54	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.75	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.96	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.70	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.3	0.54	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.3	0.54	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.3	0.52	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.52	ug/kg	
76-13-1	Freon 113	ND	5.7	3.0	ug/kg	
591-78-6	2-Hexanone	ND	5.7	2.4	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4

## Report of Analysis

<b>Client Sample ID:</b> B-16B	
<b>Lab Sample ID:</b> JD13892-15	<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8260C SW846 5035	<b>Percent Solids:</b> 82.8
<b>Project:</b> Former TCCA, Oreland, PA	

**VOA TCL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	2.3	1.6	ug/kg	
79-20-9	Methyl Acetate	ND	5.7	1.6	ug/kg	
108-87-2	Methylcyclohexane	ND	2.3	1.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.53	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.7	2.6	ug/kg	
75-09-2	Methylene chloride	ND	5.7	3.0	ug/kg	
100-42-5	Styrene	ND	2.3	1.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.3	0.68	ug/kg	
127-18-4	Tetrachloroethene	ND	2.3	0.66	ug/kg	
108-88-3	Toluene	ND	1.1	0.60	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.7	2.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.7	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.3	0.55	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.3	0.63	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.87	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.7	0.78	ug/kg	
75-01-4	Vinyl chloride	ND	2.3	0.55	ug/kg	
	m,p-Xylene	ND	1.1	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.52	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.66	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		72-130%
17060-07-0	1,2-Dichloroethane-D4	104%		75-131%
2037-26-5	Toluene-D8	100%		81-121%
460-00-4	4-Bromofluorobenzene	101%		60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4



# Report of Analysis

<b>Client Sample ID:</b> B-16B		
<b>Lab Sample ID:</b> JD13892-15		<b>Date Sampled:</b> 09/29/20
<b>Matrix:</b> SO - Soil		<b>Date Received:</b> 09/30/20
<b>Method:</b> SW846 8270D SW846 3546		<b>Percent Solids:</b> 82.8
<b>Project:</b> Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P493888.D	1	10/02/20 18:31	HSS	10/02/20 09:45	OP29800	E6P3138
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.9 g	1.0 ml
Run #2		

### BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	13	ug/kg	
208-96-8	Acenaphthylene	ND	39	20	ug/kg	
120-12-7	Anthracene	ND	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	ND	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	39	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	18	ug/kg	
218-01-9	Chrysene	ND	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	17	ug/kg	
206-44-0	Fluoranthene	ND	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	39	18	ug/kg	
91-20-3	Naphthalene	ND	39	11	ug/kg	
85-01-8	Phenanthrene	ND	39	13	ug/kg	
129-00-0	Pyrene	ND	39	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		15-114%
321-60-8	2-Fluorobiphenyl	70%		22-104%
1718-51-0	Terphenyl-d14	73%		23-121%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.15  
4

## Report of Analysis

<b>Client Sample ID:</b> B-16B	<b>Date Sampled:</b> 09/29/20
<b>Lab Sample ID:</b> JD13892-15	<b>Date Received:</b> 09/30/20
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 82.8
<b>Project:</b> Former TCCA, Oreland, PA	

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 2.4	2.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Arsenic	4.7	2.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Beryllium	1.2	0.24	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Cadmium	< 0.60	0.60	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Chromium	19.5	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Copper	14.2	3.0	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Lead	9.2	2.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Mercury	< 0.038	0.038	mg/kg	1	10/01/20	10/01/20	LL	SW846 7471B <sup>1</sup> SW846 7471B <sup>4</sup>
Nickel	22.5	4.8	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Selenium	< 2.4	2.4	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Silver	< 0.60	0.60	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Thallium	< 1.2	1.2	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>
Zinc	50.1	24	mg/kg	1	10/01/20	10/02/20	ND	SW846 6010D <sup>2</sup> SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA49384

(2) Instrument QC Batch: MA49396

(3) Prep QC Batch: MP23030

(4) Prep QC Batch: MP23064

RL = Reporting Limit

4.15  
4

**Misc. Forms**

**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody



SO  
SLL

### CHAIN OF CUSTODY

SGS North America Inc. - Dayton  
2235 Route 130, Dayton, NJ 08810  
TEL: 732-329-0200 FAX: 732-329-3499/3480  
www.sgs.com/ehsusa

PN

Client / Reporting Information		Project Information		Requested Analysis		Matrix Codes	
Company Name: <b>BL Companies</b>		Project Name: <b>Finner TCCA, Oreland, PA</b>		FED-EX Tracking #		Bottle/Canister Control #	
Street Address: <b>1100 First Ave Sx 107</b>		Street: <b>1785 Walnut Ave</b>		SGS Quote #		SGS Job #	
City: <b>King of Prussia, PA 19406</b>		City, State: <b>Oreland PA</b>		Matrix Code		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Project Contact: <b>Mike McManan</b>		Project # <b>17LS938</b>		Company Name		LAB USE ONLY	
Phone # <b>mcmaman@bl.com</b>		Client Purchase Order #		Street Address		M26	
Signature Name(s): <b>M. McManan</b>		Project Manager: <b>M. McManan</b>		City		807	
Phone # <b>610-271-1172</b>		Attention:		State		P25	
Collection		Number of preserved bottles		Zip		4FS	
SGS Bottle #	Field ID / Point of Collection	MECH/VI Val #	Date	Time	Sampled by	Draw (D) / Comp (C)	Matrix
1	B-9A		9/29/20	9:20	SES	G	SO
2	B-9B			9:25			
3	B-10A			9:50			
4	B-10B			10:00			
5	B-11A			10:10			
6	B-12A			11:10			
7	B-12B			11:15			
8	B-13A			11:30			
9	B-13B			11:35			
10	B-14A			11:50			
11	B-14B			12:10			
12	B-15A			12:30			
Turn Around Time (Business Days)		Deliverable		Comments / Special Instructions			
<input type="checkbox"/> 10 Business Days <input checked="" type="checkbox"/> 5 Business Days <b>standard</b> <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 2 Business Days <input type="checkbox"/> 1 Business Day <input type="checkbox"/> Other		Approved By (SGS PM) / Date: _____ Approval needed for 1-3 Business Day TAT		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NJ Reduced (Level 3) <input type="checkbox"/> Full Tier 1 (Level 4) <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ DKQP		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> MA MCP Criteria <input type="checkbox"/> CT RCP Criteria <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format	
<input type="checkbox"/> DOQ-QSMS 3 x 5g encore		Commercial "A" = Results only, Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Raw data <a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>					
Sample Custody must be documented below each time samples change responsibility including courier delivery.							
Relinquished by: <b>Michael DeA</b>	Date / Time: <b>9/30/20</b>	Received by: <b>[Signature]</b>	Date / Time: <b>9/30/20</b>	Relinquished by: <b>[Signature]</b>	Date / Time: <b>9/30/20</b>	Received by: <b>[Signature]</b>	Date / Time: <b>9/30/20</b>
Relinquished by:	Date / Time:	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:	Date / Time:
Custody Seal #		Intact		Preserved where applicable		On Ice	
		Not intact		Absent		Therm. ID:	
						2.8 CIP	

Initial Assessment **3 BJK**  
Label Verification \_\_\_\_\_

EHS-A-QAC-0023-02-FORM-Dayton - Standard COC.docx



5.1  
5



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/nasusa

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Turn Around Time, and Chain of Custody sections. Includes handwritten entries for BL Companies, Former TCCA, and various sample IDs like B-15B, B-16A, B-16B.

5.1
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ENSA-04C-0002-02-F-0186-0101 - Standard LCLL.docx

JD13892: Chain of Custody

Page 2 of 4



# SGS Sample Receipt Summary

Job Number: JD13892

Client: BL COMPANIES

Project: FORMER TCCA, ORELAND, PA

Date / Time Received: 9/30/2020 5:12:00 PM

Delivery Method: \_\_\_\_\_

Airbill #'s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.5);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	<u>IR Gun</u>		
3. Cooler media:	<u>Ice (Bag)</u>		
4. No. Coolers:	<u>1</u>		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: <u>229517</u>	pH 12+: <u>208717</u>	Other: (Specify) _____
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Comments	-13, -14, -15: No analysis mark on COC, Please verify analysis required.
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**JD13892: Chain of Custody**

Page 3 of 4

5.1  
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-13, -14, -15 should be run for B8270PAH, PM13, V8260TCL20+ per Mike McGowan.

**JD13892: Chain of Custody**  
**Page 4 of 4**

## MS Volatiles

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## QC Data Summaries

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### Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries



# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9486-MB	I234305.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	8.5	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
76-13-1	Freon 113	ND	5.0	2.7	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
79-20-9	Methyl Acetate	ND	5.0	1.4	ug/kg	
108-87-2	Methylcyclohexane	ND	2.0	0.88	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9486-MB	I234305.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
100-42-5	Styrene	ND	2.0	1.3	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	98% 72-130%
17060-07-0	1,2-Dichloroethane-D4	93% 75-131%
2037-26-5	Toluene-D8	99% 81-121%
460-00-4	4-Bromofluorobenzene	99% 60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10966-MB	D271940.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500	210	ug/kg	
71-43-2	Benzene	ND	25	23	ug/kg	
74-97-5	Bromochloromethane	ND	250	28	ug/kg	
75-27-4	Bromodichloromethane	ND	100	21	ug/kg	
75-25-2	Bromoform	ND	250	68	ug/kg	
74-83-9	Bromomethane	ND	250	38	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	430	ug/kg	
75-15-0	Carbon disulfide	ND	100	27	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	31	ug/kg	
108-90-7	Chlorobenzene	ND	100	23	ug/kg	
75-00-3	Chloroethane	ND	250	30	ug/kg	
67-66-3	Chloroform	ND	100	26	ug/kg	
74-87-3	Chloromethane	ND	250	98	ug/kg	
110-82-7	Cyclohexane	ND	100	33	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	35	ug/kg	
124-48-1	Dibromochloromethane	ND	100	28	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	21	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	27	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	25	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	25	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	36	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	25	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	24	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	33	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	42	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	31	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	24	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	24	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	23	ug/kg	
100-41-4	Ethylbenzene	ND	50	23	ug/kg	
76-13-1	Freon 113	ND	250	130	ug/kg	
591-78-6	2-Hexanone	ND	250	110	ug/kg	
98-82-8	Isopropylbenzene	ND	100	71	ug/kg	
79-20-9	Methyl Acetate	ND	250	70	ug/kg	
108-87-2	Methylcyclohexane	ND	100	44	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	23	ug/kg	

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10966-MB	D271940.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	110	ug/kg	
75-09-2	Methylene chloride	ND	250	130	ug/kg	
100-42-5	Styrene	ND	100	67	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	30	ug/kg	
127-18-4	Tetrachloroethene	ND	100	29	ug/kg	
108-88-3	Toluene	ND	50	26	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	130	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	130	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	24	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	28	ug/kg	
79-01-6	Trichloroethene	ND	50	38	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	34	ug/kg	
75-01-4	Vinyl chloride	ND	100	24	ug/kg	
	m,p-Xylene	ND	50	45	ug/kg	
95-47-6	o-Xylene	ND	50	23	ug/kg	
1330-20-7	Xylene (total)	ND	50	29	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	93% 72-130%
17060-07-0	1,2-Dichloroethane-D4	91% 75-131%
2037-26-5	Toluene-D8	99% 81-121%
460-00-4	4-Bromofluorobenzene	103% 60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

6.1.2  
6

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10967-MB	D271970.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500	210	ug/kg	
71-43-2	Benzene	ND	25	23	ug/kg	
74-97-5	Bromochloromethane	ND	250	28	ug/kg	
75-27-4	Bromodichloromethane	ND	100	21	ug/kg	
75-25-2	Bromoform	ND	250	68	ug/kg	
74-83-9	Bromomethane	ND	250	38	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	430	ug/kg	
75-15-0	Carbon disulfide	ND	100	27	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	31	ug/kg	
108-90-7	Chlorobenzene	ND	100	23	ug/kg	
75-00-3	Chloroethane	ND	250	30	ug/kg	
67-66-3	Chloroform	ND	100	26	ug/kg	
74-87-3	Chloromethane	ND	250	98	ug/kg	
110-82-7	Cyclohexane	ND	100	33	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	35	ug/kg	
124-48-1	Dibromochloromethane	ND	100	28	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	21	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	27	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	25	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	25	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	36	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	25	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	24	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	33	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	42	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	31	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	24	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	24	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	23	ug/kg	
100-41-4	Ethylbenzene	ND	50	23	ug/kg	
76-13-1	Freon 113	ND	250	130	ug/kg	
591-78-6	2-Hexanone	ND	250	110	ug/kg	
98-82-8	Isopropylbenzene	ND	100	71	ug/kg	
79-20-9	Methyl Acetate	ND	250	70	ug/kg	
108-87-2	Methylcyclohexane	ND	100	44	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	23	ug/kg	

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10967-MB	D271970.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	Result	RL	MDL	Units	Q
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	110	ug/kg	
75-09-2	Methylene chloride	ND	250	130	ug/kg	
100-42-5	Styrene	ND	100	67	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	30	ug/kg	
127-18-4	Tetrachloroethene	ND	100	29	ug/kg	
108-88-3	Toluene	ND	50	26	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	130	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	130	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	24	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	28	ug/kg	
79-01-6	Trichloroethene	ND	50	38	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	34	ug/kg	
75-01-4	Vinyl chloride	ND	100	24	ug/kg	
	m,p-Xylene	ND	50	45	ug/kg	
95-47-6	o-Xylene	ND	50	23	ug/kg	
1330-20-7	Xylene (total)	ND	50	29	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	99% 72-130%
17060-07-0	1,2-Dichloroethane-D4	92% 75-131%
2037-26-5	Toluene-D8	99% 81-121%
460-00-4	4-Bromofluorobenzene	102% 60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9486-BS	I234303.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	160	80	67-130
71-43-2	Benzene	50	55.2	110	80-115
74-97-5	Bromochloromethane	50	49.6	99	82-121
75-27-4	Bromodichloromethane	50	46.8	94	83-121
75-25-2	Bromoform	50	53.3	107	80-141
74-83-9	Bromomethane	50	51.5	103	56-146
78-93-3	2-Butanone (MEK)	200	173	87	72-134
75-15-0	Carbon disulfide	50	44.5	89	65-125
56-23-5	Carbon tetrachloride	50	49.5	99	75-126
108-90-7	Chlorobenzene	50	51.5	103	81-115
75-00-3	Chloroethane	50	51.5	103	72-133
67-66-3	Chloroform	50	49.0	98	75-114
74-87-3	Chloromethane	50	45.9	92	57-135
110-82-7	Cyclohexane	50	55.8	112	73-126
96-12-8	1,2-Dibromo-3-chloropropane	50	45.6	91	72-129
124-48-1	Dibromochloromethane	50	49.5	99	82-133
106-93-4	1,2-Dibromoethane	50	51.0	102	81-126
95-50-1	1,2-Dichlorobenzene	50	47.9	96	83-114
541-73-1	1,3-Dichlorobenzene	50	50.2	100	81-112
106-46-7	1,4-Dichlorobenzene	50	49.0	98	79-113
75-71-8	Dichlorodifluoromethane	50	51.5	103	50-150
75-34-3	1,1-Dichloroethane	50	40.0	80	75-120
107-06-2	1,2-Dichloroethane	50	44.2	88	72-117
75-35-4	1,1-Dichloroethene	50	44.7	89	69-124
156-59-2	cis-1,2-Dichloroethene	50	43.8	88	73-119
156-60-5	trans-1,2-Dichloroethene	50	46.0	92	70-123
78-87-5	1,2-Dichloropropane	50	53.7	107	80-118
10061-01-5	cis-1,3-Dichloropropene	50	49.4	99	83-121
10061-02-6	trans-1,3-Dichloropropene	50	51.4	103	83-125
100-41-4	Ethylbenzene	50	50.8	102	80-114
76-13-1	Freon 113	50	47.7	95	69-130
591-78-6	2-Hexanone	200	167	84	77-126
98-82-8	Isopropylbenzene	50	57.9	116	76-121
79-20-9	Methyl Acetate	50	41.3	83	63-132
108-87-2	Methylcyclohexane	50	50.1	100	73-125
1634-04-4	Methyl Tert Butyl Ether	50	42.4	85	76-127

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI9486-BS	I234303.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	200	167	84	75-129
75-09-2	Methylene chloride	50	47.6	95	71-120
100-42-5	Styrene	50	55.1	110	83-118
79-34-5	1,1,2,2-Tetrachloroethane	50	45.3	91	76-120
127-18-4	Tetrachloroethene	50	51.6	103	75-125
108-88-3	Toluene	50	52.5	105	79-115
87-61-6	1,2,3-Trichlorobenzene	50	54.9	110	75-131
120-82-1	1,2,4-Trichlorobenzene	50	47.3	95	76-130
71-55-6	1,1,1-Trichloroethane	50	49.6	99	77-122
79-00-5	1,1,2-Trichloroethane	50	50.4	101	82-119
79-01-6	Trichloroethene	50	52.2	104	82-119
75-69-4	Trichlorofluoromethane	50	43.6	87	70-134
75-01-4	Vinyl chloride	50	48.9	98	60-139
	m,p-Xylene	100	106	106	81-115
95-47-6	o-Xylene	50	55.4	111	82-117
1330-20-7	Xylene (total)	150	161	107	81-116

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-130%
17060-07-0	1,2-Dichloroethane-D4	88%	75-131%
2037-26-5	Toluene-D8	100%	81-121%
460-00-4	4-Bromofluorobenzene	91%	60-141%

\* = Outside of Control Limits.



# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10966-BS	D271938.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	10000	8100	81	48-149
71-43-2	Benzene	2500	2230	89	74-117
74-97-5	Bromochloromethane	2500	2380	95	82-121
75-27-4	Bromodichloromethane	2500	2360	94	78-119
75-25-2	Bromoform	2500	2460	98	76-130
74-83-9	Bromomethane	2500	2180	87	58-137
78-93-3	2-Butanone (MEK)	10000	10200	102	65-143
75-15-0	Carbon disulfide	2500	2180	87	66-140
56-23-5	Carbon tetrachloride	2500	2210	88	69-136
108-90-7	Chlorobenzene	2500	2470	99	79-117
75-00-3	Chloroethane	2500	2120	85	62-139
67-66-3	Chloroform	2500	2130	85	76-119
74-87-3	Chloromethane	2500	2020	81	52-144
110-82-7	Cyclohexane	2500	2330	93	64-136
96-12-8	1,2-Dibromo-3-chloropropane	2500	2020	81	72-124
124-48-1	Dibromochloromethane	2500	2480	99	78-122
106-93-4	1,2-Dibromoethane	2500	2520	101	80-116
95-50-1	1,2-Dichlorobenzene	2500	2400	96	77-117
541-73-1	1,3-Dichlorobenzene	2500	2420	97	75-117
106-46-7	1,4-Dichlorobenzene	2500	2370	95	76-115
75-71-8	Dichlorodifluoromethane	2500	2210	88	43-156
75-34-3	1,1-Dichloroethane	2500	2110	84	75-124
107-06-2	1,2-Dichloroethane	2500	2130	85	74-124
75-35-4	1,1-Dichloroethene	2500	2140	86	64-129
156-59-2	cis-1,2-Dichloroethene	2500	2200	88	74-118
156-60-5	trans-1,2-Dichloroethene	2500	2180	87	71-125
78-87-5	1,2-Dichloropropane	2500	2310	92	80-119
10061-01-5	cis-1,3-Dichloropropene	2500	2420	97	80-119
10061-02-6	trans-1,3-Dichloropropene	2500	2480	99	78-119
100-41-4	Ethylbenzene	2500	2440	98	75-118
76-13-1	Freon 113	2500	2240	90	60-181
591-78-6	2-Hexanone	10000	9960	100	63-138
98-82-8	Isopropylbenzene	2500	2470	99	74-122
79-20-9	Methyl Acetate	2500	2360	94	61-140
108-87-2	Methylcyclohexane	2500	2230	89	67-136
1634-04-4	Methyl Tert Butyl Ether	2500	2100	84	75-123

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10966-BS	D271938.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	9800	98	73-136
75-09-2	Methylene chloride	2500	2120	85	73-120
100-42-5	Styrene	2500	2550	102	78-120
79-34-5	1,1,2,2-Tetrachloroethane	2500	2260	90	72-120
127-18-4	Tetrachloroethene	2500	2540	102	69-128
108-88-3	Toluene	2500	2390	96	74-117
87-61-6	1,2,3-Trichlorobenzene	2500	1860	74	72-133
120-82-1	1,2,4-Trichlorobenzene	2500	2140	86	73-132
71-55-6	1,1,1-Trichloroethane	2500	2200	88	73-131
79-00-5	1,1,2-Trichloroethane	2500	2410	96	79-117
79-01-6	Trichloroethene	2500	2380	95	80-120
75-69-4	Trichlorofluoromethane	2500	2180	87	63-141
75-01-4	Vinyl chloride	2500	2130	85	55-145
	m,p-Xylene	5000	5060	101	75-120
95-47-6	o-Xylene	2500	2430	97	75-119
1330-20-7	Xylene (total)	7500	7490	100	76-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	93%	75-127%
17060-07-0	1,2-Dichloroethane-D4	91%	75-130%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	97%	79-127%

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10967-BS	D271968.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	10000	8690	87	67-130
71-43-2	Benzene	2500	2490	100	80-115
74-97-5	Bromochloromethane	2500	2640	106	82-121
75-27-4	Bromodichloromethane	2500	2580	103	83-121
75-25-2	Bromoform	2500	2590	104	80-141
74-83-9	Bromomethane	2500	2470	99	56-146
78-93-3	2-Butanone (MEK)	10000	10800	108	72-134
75-15-0	Carbon disulfide	2500	2560	102	65-125
56-23-5	Carbon tetrachloride	2500	2500	100	75-126
108-90-7	Chlorobenzene	2500	2670	107	81-115
75-00-3	Chloroethane	2500	2450	98	72-133
67-66-3	Chloroform	2500	2410	96	75-114
74-87-3	Chloromethane	2500	2250	90	57-135
110-82-7	Cyclohexane	2500	2630	105	73-126
96-12-8	1,2-Dibromo-3-chloropropane	2500	2110	84	72-129
124-48-1	Dibromochloromethane	2500	2630	105	82-133
106-93-4	1,2-Dibromoethane	2500	2650	106	81-126
95-50-1	1,2-Dichlorobenzene	2500	2540	102	83-114
541-73-1	1,3-Dichlorobenzene	2500	2590	104	81-112
106-46-7	1,4-Dichlorobenzene	2500	2520	101	79-113
75-71-8	Dichlorodifluoromethane	2500	2250	90	50-150
75-34-3	1,1-Dichloroethane	2500	2440	98	75-120
107-06-2	1,2-Dichloroethane	2500	2280	91	72-117
75-35-4	1,1-Dichloroethene	2500	2480	99	69-124
156-59-2	cis-1,2-Dichloroethene	2500	2500	100	73-119
156-60-5	trans-1,2-Dichloroethene	2500	2500	100	70-123
78-87-5	1,2-Dichloropropane	2500	2570	103	80-118
10061-01-5	cis-1,3-Dichloropropene	2500	2620	105	83-121
10061-02-6	trans-1,3-Dichloropropene	2500	2620	105	83-125
100-41-4	Ethylbenzene	2500	2670	107	80-114
76-13-1	Freon 113	2500	2500	100	69-130
591-78-6	2-Hexanone	10000	10600	106	77-126
98-82-8	Isopropylbenzene	2500	2700	108	76-121
79-20-9	Methyl Acetate	2500	2610	104	63-132
108-87-2	Methylcyclohexane	2500	2540	102	73-125
1634-04-4	Methyl Tert Butyl Ether	2500	2290	92	76-127

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VD10967-BS	D271968.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	10400	104	75-129
75-09-2	Methylene chloride	2500	2440	98	71-120
100-42-5	Styrene	2500	2720	109	83-118
79-34-5	1,1,2,2-Tetrachloroethane	2500	2420	97	76-120
127-18-4	Tetrachloroethene	2500	2670	107	75-125
108-88-3	Toluene	2500	2560	102	79-115
87-61-6	1,2,3-Trichlorobenzene	2500	1960	78	75-131
120-82-1	1,2,4-Trichlorobenzene	2500	2240	90	76-130
71-55-6	1,1,1-Trichloroethane	2500	2490	100	77-122
79-00-5	1,1,2-Trichloroethane	2500	2590	104	82-119
79-01-6	Trichloroethene	2500	2570	103	82-119
75-69-4	Trichlorofluoromethane	2500	2410	96	70-134
75-01-4	Vinyl chloride	2500	2400	96	60-139
	m,p-Xylene	5000	5560	111	81-115
95-47-6	o-Xylene	2500	2650	106	82-117
1330-20-7	Xylene (total)	7500	8210	109	81-116

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-130%
17060-07-0	1,2-Dichloroethane-D4	92%	75-131%
2037-26-5	Toluene-D8	99%	81-121%
460-00-4	4-Bromofluorobenzene	96%	60-141%

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-4MS	I234314.D	1	10/03/20	TDN	n/a	n/a	VI9486
JD13892-4	I234307.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	JD13892-4 ug/kg	Spike Q	MS ug/kg	MS %	Limits
67-64-1	Acetone	ND	219	232	106	31-142
71-43-2	Benzene	ND	54.8	54.4	99	62-126
74-97-5	Bromochloromethane	ND	54.8	55.5	101	68-125
75-27-4	Bromodichloromethane	ND	54.8	49.4	90	63-132
75-25-2	Bromoform	ND	54.8	42.9	78	59-138
74-83-9	Bromomethane	ND	54.8	61.7	113	13-164
78-93-3	2-Butanone (MEK)	ND	219	240	110	51-135
75-15-0	Carbon disulfide	ND	54.8	52.6	96	49-134
56-23-5	Carbon tetrachloride	ND	54.8	54.4	99	60-133
108-90-7	Chlorobenzene	ND	54.8	47.4	87	58-126
75-00-3	Chloroethane	ND	54.8	67.2	123	18-165
67-66-3	Chloroform	ND	54.8	57.3	105	60-125
74-87-3	Chloromethane	ND	54.8	64.7	118	43-145
110-82-7	Cyclohexane	ND	54.8	59.5	109	50-136
96-12-8	1,2-Dibromo-3-chloropropane	ND	54.8	42.7	78	43-133
124-48-1	Dibromochloromethane	ND	54.8	46.8	85	68-131
106-93-4	1,2-Dibromoethane	ND	54.8	48.1	88	63-127
95-50-1	1,2-Dichlorobenzene	ND	54.8	39.9	73	46-130
541-73-1	1,3-Dichlorobenzene	ND	54.8	41.1	75	45-129
106-46-7	1,4-Dichlorobenzene	ND	54.8	40.2	73	43-129
75-71-8	Dichlorodifluoromethane	ND	54.8	60.8	111	35-157
75-34-3	1,1-Dichloroethane	ND	54.8	62.0	113	63-130
107-06-2	1,2-Dichloroethane	ND	54.8	49.0	89	61-118
75-35-4	1,1-Dichloroethene	ND	54.8	61.5	112	55-135
156-59-2	cis-1,2-Dichloroethene	ND	54.8	53.3	97	55-131
156-60-5	trans-1,2-Dichloroethene	ND	54.8	60.3	110	54-135
78-87-5	1,2-Dichloropropane	ND	54.8	57.3	105	68-123
10061-01-5	cis-1,3-Dichloropropene	ND	54.8	50.4	92	65-123
10061-02-6	trans-1,3-Dichloropropene	ND	54.8	50.4	92	63-128
100-41-4	Ethylbenzene	ND	54.8	50.6	92	48-135
76-13-1	Freon 113	ND	54.8	54.9	100	51-138
591-78-6	2-Hexanone	ND	219	197	90	55-127
98-82-8	Isopropylbenzene	ND	54.8	49.5	90	46-139
79-20-9	Methyl Acetate	ND	54.8	68.8	126	28-170
108-87-2	Methylcyclohexane	ND	54.8	48.7	89	33-145
1634-04-4	Methyl Tert Butyl Ether	ND	54.8	55.5	101	62-128

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-4MS	I234314.D	1	10/03/20	TDN	n/a	n/a	VI9486
JD13892-4	I234307.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	JD13892-4 ug/kg	Spike Q	MS ug/kg	MS %	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	219	201	92	59-125
75-09-2	Methylene chloride	ND	54.8	60.6	111	59-127
100-42-5	Styrene	ND	54.8	48.7	89	52-136
79-34-5	1,1,2,2-Tetrachloroethane	ND	54.8	46.9	86	53-127
127-18-4	Tetrachloroethene	ND	54.8	46.1	84	50-138
108-88-3	Toluene	ND	54.8	49.2	90	57-129
87-61-6	1,2,3-Trichlorobenzene	ND	54.8	35.3	64	13-152
120-82-1	1,2,4-Trichlorobenzene	ND	54.8	36.3	66	15-153
71-55-6	1,1,1-Trichloroethane	ND	54.8	55.9	102	60-134
79-00-5	1,1,2-Trichloroethane	ND	54.8	52.8	96	56-137
79-01-6	Trichloroethene	ND	54.8	53.2	97	52-144
75-69-4	Trichlorofluoromethane	ND	54.8	54.6	100	48-144
75-01-4	Vinyl chloride	ND	54.8	65.5	120	44-152
	m,p-Xylene	ND	110	99.7	91	53-130
95-47-6	o-Xylene	ND	54.8	50.4	92	52-135
1330-20-7	Xylene (total)	ND	164	150	91	54-131

CAS No.	Surrogate Recoveries	MS	JD13892-4	Limits
1868-53-7	Dibromofluoromethane	108%	104%	72-130%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	75-131%
2037-26-5	Toluene-D8	103%	100%	81-121%
460-00-4	4-Bromofluorobenzene	99%	103%	60-141%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-2MS	D271946.D	1	10/05/20	TDN	n/a	n/a	VD10966
JD13892-2MSD	D271947.D	1	10/05/20	TDN	n/a	n/a	VD10966
JD13892-2 <sup>a</sup>	D271943.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	JD13892-2 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
67-64-1	Acetone	ND		365000	294000	80	365000	295000	81	0	31-142/24
71-43-2	Benzene	ND		91300	84400	92	91300	85300	93	1	62-126/15
74-97-5	Bromochloromethane	ND		91300	88900	97	91300	90400	99	2	68-125/14
75-27-4	Bromodichloromethane	ND		91300	87700	96	91300	86000	94	2	63-132/15
75-25-2	Bromoform	ND		91300	90700	99	91300	96100	105	6	59-138/17
74-83-9	Bromomethane	ND		91300	83600	92	91300	80500	88	4	13-164/34
78-93-3	2-Butanone (MEK)	ND		365000	371000	102	365000	355000	97	4	51-135/20
75-15-0	Carbon disulfide	ND		91300	84300	92	91300	84700	93	0	49-134/22
56-23-5	Carbon tetrachloride	ND		91300	85200	93	91300	85300	93	0	60-133/16
108-90-7	Chlorobenzene	ND		91300	93100	102	91300	92700	102	0	58-126/17
75-00-3	Chloroethane	ND		91300	80300	88	91300	78000	85	3	18-165/38
67-66-3	Chloroform	ND		91300	80100	88	91300	80500	88	0	60-125/14
74-87-3	Chloromethane	ND		91300	71600	78	91300	74900	82	5	43-145/16
110-82-7	Cyclohexane	ND		91300	86400	95	91300	86100	94	0	50-136/20
96-12-8	1,2-Dibromo-3-chloropropane	ND		91300	85900	94	91300	90600	99	5	43-133/18
124-48-1	Dibromochloromethane	ND		91300	92100	101	91300	94200	103	2	68-131/14
106-93-4	1,2-Dibromoethane	ND		91300	91900	101	91300	93100	102	1	63-127/14
95-50-1	1,2-Dichlorobenzene	ND		91300	90300	99	91300	91300	100	1	46-130/18
541-73-1	1,3-Dichlorobenzene	ND		91300	90800	99	91300	90800	99	0	45-129/19
106-46-7	1,4-Dichlorobenzene	ND		91300	88600	97	91300	90100	99	2	43-129/19
75-71-8	Dichlorodifluoromethane	ND		91300	81700	89	91300	85400	94	4	35-157/16
75-34-3	1,1-Dichloroethane	ND		91300	79700	87	91300	79500	87	0	63-130/14
107-06-2	1,2-Dichloroethane	ND		91300	77000	84	91300	79300	87	3	61-118/14
75-35-4	1,1-Dichloroethene	ND		91300	85300	93	91300	86600	95	2	55-135/15
156-59-2	cis-1,2-Dichloroethene	ND		91300	83600	92	91300	84300	92	1	55-131/15
156-60-5	trans-1,2-Dichloroethene	ND		91300	84100	92	91300	85700	94	2	54-135/16
78-87-5	1,2-Dichloropropane	ND		91300	84900	93	91300	82400	90	3	68-123/14
10061-01-5	cis-1,3-Dichloropropene	ND		91300	89200	98	91300	83000	91	7	65-123/16
10061-02-6	trans-1,3-Dichloropropene	ND		91300	91500	100	91300	90400	99	1	63-128/15
100-41-4	Ethylbenzene	4350		91300	95700	100	91300	96200	101	1	48-135/17
76-13-1	Freon 113	ND		91300	88400	97	91300	91600	100	4	51-138/17
591-78-6	2-Hexanone	ND		365000	377000	103	365000	369000	101	2	55-127/16
98-82-8	Isopropylbenzene	ND		91300	95100	104	91300	98200	108	3	46-139/19
79-20-9	Methyl Acetate	ND		91300	82800	91	91300	88900	97	7	28-170/21
108-87-2	Methylcyclohexane	ND		91300	88400	97	91300	89800	98	2	33-145/23
1634-04-4	Methyl Tert Butyl Ether	ND		91300	77600	85	91300	79100	87	2	62-128/13

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-2MS	D271946.D	1	10/05/20	TDN	n/a	n/a	VD10966
JD13892-2MSD	D271947.D	1	10/05/20	TDN	n/a	n/a	VD10966
JD13892-2 <sup>a</sup>	D271943.D	1	10/05/20	TDN	n/a	n/a	VD10966

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-2

CAS No.	Compound	JD13892-2 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		365000	347000	95	365000	330000	90	5	59-125/18
75-09-2	Methylene chloride	ND		91300	81600	89	91300	81200	89	0	59-127/14
100-42-5	Styrene	3090	J	91300	99800	106	91300	100000	106	0	52-136/18
79-34-5	1,1,2,2-Tetrachloroethane	ND		91300	80300	88	91300	78000	85	3	53-127/20
127-18-4	Tetrachloroethene	ND		91300	97300	107	91300	99400	109	2	50-138/19
108-88-3	Toluene	2720		91300	92600	98	91300	93700	100	1	57-129/16
87-61-6	1,2,3-Trichlorobenzene	ND		91300	76300	84	91300	81200	89	6	13-152/29
120-82-1	1,2,4-Trichlorobenzene	ND		91300	85600	94	91300	90700	99	6	15-153/27
71-55-6	1,1,1-Trichloroethane	ND		91300	84400	92	91300	83700	92	1	60-134/15
79-00-5	1,1,2-Trichloroethane	ND		91300	88500	97	91300	87700	96	1	56-137/14
79-01-6	Trichloroethene	ND		91300	89400	98	91300	91100	100	2	52-144/19
75-69-4	Trichlorofluoromethane	ND		91300	83600	92	91300	84400	92	1	48-144/27
75-01-4	Vinyl chloride	ND		91300	77400	85	91300	79300	87	2	44-152/15
	m,p-Xylene	15000		183000	207000	105	183000	208000	106	0	53-130/17
95-47-6	o-Xylene	7430		91300	99300	101	91300	102000	104	3	52-135/16
1330-20-7	Xylene (total)	22400		274000	306000	104	274000	310000	105	1	54-131/16

CAS No.	Surrogate Recoveries	MS	MSD	JD13892-2	Limits
1868-53-7	Dibromofluoromethane	95%	95%	95%	72-130%
17060-07-0	1,2-Dichloroethane-D4	94%	90%	91%	75-131%
2037-26-5	Toluene-D8	100%	101%	100%	81-121%
460-00-4	4-Bromofluorobenzene	93%	90%	96%	60-141%

(a) Diluted due to high concentration of non-target compound.

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-5MS	D271973.D	1	10/06/20	TDN	n/a	n/a	VD10967
JD13892-5MSD	D271974.D	1	10/06/20	TDN	n/a	n/a	VD10967
JD13892-5 <sup>a</sup>	D271971.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	JD13892-5 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	49400	46700	94	49400	45400	92	3	31-142/24
71-43-2	Benzene	361	12400	12600	99	12400	12400	97	2	62-126/15
74-97-5	Bromochloromethane	ND	12400	12700	103	12400	12500	101	2	68-125/14
75-27-4	Bromodichloromethane	ND	12400	12400	100	12400	12400	100	0	63-132/15
75-25-2	Bromoform	ND	12400	12700	103	12400	12400	100	2	59-138/17
74-83-9	Bromomethane	ND	12400	5160	42	12400	4800	39	7	13-164/34
78-93-3	2-Butanone (MEK)	ND	49400	53200	108	49400	50900	103	4	51-135/20
75-15-0	Carbon disulfide	ND	12400	12900	104	12400	12300	100	5	49-134/22
56-23-5	Carbon tetrachloride	ND	12400	12000	97	12400	11600	94	3	60-133/16
108-90-7	Chlorobenzene	ND	12400	13200	107	12400	12800	104	3	58-126/17
75-00-3	Chloroethane	ND	12400	8650	70	12400	8220	66	5	18-165/38
67-66-3	Chloroform	ND	12400	11900	96	12400	11300	91	5	60-125/14
74-87-3	Chloromethane	ND	12400	10700	87	12400	10400	84	3	43-145/16
110-82-7	Cyclohexane	ND	12400	12600	102	12400	12000	97	5	50-136/20
96-12-8	1,2-Dibromo-3-chloropropane	ND	12400	14800	120	12400	14300	116	3	43-133/18
124-48-1	Dibromochloromethane	ND	12400	12900	104	12400	12700	103	2	68-131/14
106-93-4	1,2-Dibromoethane	ND	12400	13100	106	12400	12900	104	2	63-127/14
95-50-1	1,2-Dichlorobenzene	ND	12400	12600	102	12400	12200	99	3	46-130/18
541-73-1	1,3-Dichlorobenzene	ND	12400	12800	104	12400	12500	101	2	45-129/19
106-46-7	1,4-Dichlorobenzene	ND	12400	12600	102	12400	12300	100	2	43-129/19
75-71-8	Dichlorodifluoromethane	ND	12400	10800	87	12400	10600	86	2	35-157/16
75-34-3	1,1-Dichloroethane	ND	12400	12100	98	12400	11600	94	4	63-130/14
107-06-2	1,2-Dichloroethane	ND	12400	11200	91	12400	11200	91	0	61-118/14
75-35-4	1,1-Dichloroethene	ND	12400	12900	104	12400	12300	100	5	55-135/15
156-59-2	cis-1,2-Dichloroethene	ND	12400	12400	100	12400	11700	95	6	55-131/15
156-60-5	trans-1,2-Dichloroethene	ND	12400	12500	101	12400	12000	97	4	54-135/16
78-87-5	1,2-Dichloropropane	ND	12400	12400	100	12400	12300	100	1	68-123/14
10061-01-5	cis-1,3-Dichloropropene	ND	12400	12900	104	12400	12800	104	1	65-123/16
10061-02-6	trans-1,3-Dichloropropene	ND	12400	13000	105	12400	12800	104	2	63-128/15
100-41-4	Ethylbenzene	1690	12400	14800	106	12400	14400	103	3	48-135/17
76-13-1	Freon 113	ND	12400	12200	99	12400	11800	95	3	51-138/17
591-78-6	2-Hexanone	ND	49400	54500	110	49400	54400	110	0	55-127/16
98-82-8	Isopropylbenzene	ND	12400	13900	112	12400	13100	106	6	46-139/19
79-20-9	Methyl Acetate	ND	12400	13900	112	12400	13400	108	4	28-170/21
108-87-2	Methylcyclohexane	ND	12400	12600	102	12400	12200	99	3	33-145/23
1634-04-4	Methyl Tert Butyl Ether	ND	12400	11200	91	12400	10900	88	3	62-128/13

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-5MS	D271973.D	1	10/06/20	TDN	n/a	n/a	VD10967
JD13892-5MSD	D271974.D	1	10/06/20	TDN	n/a	n/a	VD10967
JD13892-5 <sup>a</sup>	D271971.D	1	10/06/20	TDN	n/a	n/a	VD10967

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-5

CAS No.	Compound	JD13892-5 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	49400	48500	98	49400	50400	102	4	59-125/18
75-09-2	Methylene chloride	ND	12400	12400	100	12400	11800	95	5	59-127/14
100-42-5	Styrene	1140	12400	15100	113	12400	14600	109	3	52-136/18
79-34-5	1,1,2,2-Tetrachloroethane	ND	12400	11000	89	12400	11100	90	1	53-127/20
127-18-4	Tetrachloroethene	ND	12400	13600	110	12400	13100	106	4	50-138/19
108-88-3	Toluene	1320	12400	14300	105	12400	13800	101	4	57-129/16
87-61-6	1,2,3-Trichlorobenzene	ND	12400	10200	83	12400	9690	78	5	13-152/29
120-82-1	1,2,4-Trichlorobenzene	ND	12400	11400	92	12400	10900	88	4	15-153/27
71-55-6	1,1,1-Trichloroethane	ND	12400	12200	99	12400	11800	95	3	60-134/15
79-00-5	1,1,2-Trichloroethane	ND	12400	12600	102	12400	12500	101	1	56-137/14
79-01-6	Trichloroethene	ND	12400	12600	102	12400	12400	100	2	52-144/19
75-69-4	Trichlorofluoromethane	ND	12400	13100	106	12400	11600	94	12	48-144/27
75-01-4	Vinyl chloride	ND	12400	11200	91	12400	10900	88	3	44-152/15
	m,p-Xylene	5900	24700	33500	112	24700	32400	107	3	53-130/17
95-47-6	o-Xylene	2880	12400	16300	109	12400	15700	104	4	52-135/16
1330-20-7	Xylene (total)	8780	37100	49800	111	37100	48100	106	3	54-131/16

CAS No.	Surrogate Recoveries	MS	MSD	JD13892-5	Limits
1868-53-7	Dibromofluoromethane	96%	95%	100%	72-130%
17060-07-0	1,2-Dichloroethane-D4	91%	99%	94%	75-131%
2037-26-5	Toluene-D8	102%	100%	102%	81-121%
460-00-4	4-Bromofluorobenzene	94%	98%	96%	60-141%

(a) Dilution required due to high concentraton of non-target compound.

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-6DUP	I234316.D	1	10/03/20	TDN	n/a	n/a	VI9486
JD13892-6	I234308.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	JD13892-6 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	27.5	ND			200* a	108
71-43-2	Benzene	ND	ND			nc	27
74-97-5	Bromochloromethane	ND	ND			nc	30
75-27-4	Bromodichloromethane	ND	ND			nc	22
75-25-2	Bromoform	ND	ND			nc	30
74-83-9	Bromomethane	ND	ND			nc	6
78-93-3	2-Butanone (MEK)	ND	ND			nc	32
75-15-0	Carbon disulfide	ND	ND			nc	31
56-23-5	Carbon tetrachloride	ND	ND			nc	30
108-90-7	Chlorobenzene	ND	ND			nc	30
75-00-3	Chloroethane	ND	ND			nc	0
67-66-3	Chloroform	ND	ND			nc	30
74-87-3	Chloromethane	ND	ND			nc	30
110-82-7	Cyclohexane	ND	ND			nc	24
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND			nc	30
124-48-1	Dibromochloromethane	ND	ND			nc	1
106-93-4	1,2-Dibromoethane	ND	ND			nc	30
95-50-1	1,2-Dichlorobenzene	ND	ND			nc	30
541-73-1	1,3-Dichlorobenzene	ND	ND			nc	30
106-46-7	1,4-Dichlorobenzene	ND	ND			nc	2
75-71-8	Dichlorodifluoromethane	ND	ND			nc	30
75-34-3	1,1-Dichloroethane	ND	ND			nc	7
107-06-2	1,2-Dichloroethane	ND	ND			nc	7
75-35-4	1,1-Dichloroethene	ND	ND			nc	10
156-59-2	cis-1,2-Dichloroethene	ND	ND			nc	27
156-60-5	trans-1,2-Dichloroethene	ND	ND			nc	16
78-87-5	1,2-Dichloropropane	ND	ND			nc	30
10061-01-5	cis-1,3-Dichloropropene	ND	ND			nc	30
10061-02-6	trans-1,3-Dichloropropene	ND	ND			nc	30
100-41-4	Ethylbenzene	ND	ND			nc	36
76-13-1	Freon 113	ND	ND			nc	1
591-78-6	2-Hexanone	ND	ND			nc	30
98-82-8	Isopropylbenzene	ND	ND			nc	13
79-20-9	Methyl Acetate	ND	ND			nc	15
108-87-2	Methylcyclohexane	ND	ND			nc	28
1634-04-4	Methyl Tert Butyl Ether	ND	ND			nc	11

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD13892-6DUP	I234316.D	1	10/03/20	TDN	n/a	n/a	VI9486
JD13892-6	I234308.D	1	10/03/20	TDN	n/a	n/a	VI9486

The QC reported here applies to the following samples:

Method: SW846 8260C

JD13892-1, JD13892-3, JD13892-4, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	JD13892-6 ug/kg	DUP Q	Q	RPD	Limits
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	ND		nc	30
75-09-2	Methylene chloride	ND	ND		nc	31
100-42-5	Styrene	ND	ND		nc	30
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND		nc	30
127-18-4	Tetrachloroethene	ND	ND		nc	44
108-88-3	Toluene	ND	ND		nc	39
87-61-6	1,2,3-Trichlorobenzene	ND	ND		nc	30
120-82-1	1,2,4-Trichlorobenzene	ND	ND		nc	30
71-55-6	1,1,1-Trichloroethane	ND	ND		nc	9
79-00-5	1,1,2-Trichloroethane	ND	ND		nc	30
79-01-6	Trichloroethene	ND	ND		nc	29
75-69-4	Trichlorofluoromethane	ND	ND		nc	30
75-01-4	Vinyl chloride	ND	ND		nc	14
	m,p-Xylene	ND	ND		nc	39
95-47-6	o-Xylene	ND	ND		nc	36
1330-20-7	Xylene (total)	ND	ND		nc	44

CAS No.	Surrogate Recoveries	DUP	JD13892-6	Limits
1868-53-7	Dibromofluoromethane	108%	105%	72-130%
17060-07-0	1,2-Dichloroethane-D4	104%	102%	75-131%
2037-26-5	Toluene-D8	102%	102%	81-121%
460-00-4	4-Bromofluorobenzene	104%	102%	60-141%

(a) High RPD due to possible sample nonhomogeneity.

\* = Outside of Control Limits.

# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VD10947-BFB	Injection Date: 09/16/20
Lab File ID: D271598.D	Injection Time: 18:06
Instrument ID: GCMSD	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	24842	19.1	Pass
75	30.0 - 60.0% of mass 95	65245	50.2	Pass
95	Base peak, 100% relative abundance	129914	100.0	Pass
96	5.0 - 9.0% of mass 95	9132	7.03	Pass
173	Less than 2.0% of mass 174	761	0.59 (0.64) <sup>a</sup>	Pass
174	50.0 - 150.0% of mass 95	118440	91.2	Pass
175	5.0 - 9.0% of mass 174	8474	6.52 (7.15) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	115922	89.2 (97.9) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	7354	5.66 (6.34) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD10947-IC10947	D271599.D	09/16/20	19:10	01:04	Initial cal 0.2
VD10947-IC10947	D271600.D	09/16/20	19:39	01:33	Initial cal 0.5
VD10947-IC10947	D271601.D	09/16/20	20:08	02:02	Initial cal 1
VD10947-IC10947	D271602.D	09/16/20	20:36	02:30	Initial cal 2
VD10947-IC10947	D271603.D	09/16/20	21:05	02:59	Initial cal 4
VD10947-IC10947	D271604.D	09/16/20	21:33	03:27	Initial cal 8
VD10947-IC10947	D271605.D	09/16/20	22:02	03:56	Initial cal 20
VD10947-ICC10947	D271606.D	09/16/20	22:31	04:25	Initial cal 50
VD10947-IC10947	D271607.D	09/16/20	22:59	04:53	Initial cal 100
VD10947-IC10947	D271608.D	09/16/20	23:28	05:22	Initial cal 200
VD10947-ICV10947	D271611.D	09/17/20	00:54	06:48	Initial cal verification 50
VD10947-ICV10947	D271612.D	09/17/20	01:23	07:17	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VD10947-BFB2	Injection Date: 09/17/20
Lab File ID: D271615.D	Injection Time: 10:59
Instrument ID: GCMSD	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	22778	18.6	Pass
75	30.0 - 60.0% of mass 95	61016	49.9	Pass
95	Base peak, 100% relative abundance	122261	100.0	Pass
96	5.0 - 9.0% of mass 95	8613	7.04	Pass
173	Less than 2.0% of mass 174	715	0.58 (0.63) <sup>a</sup>	Pass
174	50.0 - 150.0% of mass 95	113730	93.0	Pass
175	5.0 - 9.0% of mass 174	7854	6.42 (6.91) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	111024	90.8 (97.6) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	7375	6.03 (6.64) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD10947-ICV10947	D271616.D	09/17/20	11:28	00:29	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VD10966-BFB	Injection Date: 10/05/20
Lab File ID: D271935.D	Injection Time: 08:20
Instrument ID: GCMSD	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	16921	17.7	Pass
75	30.0 - 60.0% of mass 95	46331	48.5	Pass
95	Base peak, 100% relative abundance	95539	100.0	Pass
96	5.0 - 9.0% of mass 95	6718	7.03	Pass
173	Less than 2.0% of mass 174	544	0.57 (0.60) <sup>a</sup>	Pass
174	50.0 - 150.0% of mass 95	90592	94.8	Pass
175	5.0 - 9.0% of mass 174	6648	6.96 (7.34) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	88301	92.4 (97.5) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	5888	6.16 (6.67) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD10966-CC10947	D271935.D	10/05/20	08:20	00:00	Continuing cal 50
VD10966-BS	D271938.D	10/05/20	10:04	01:44	Blank Spike
VD10966-MB	D271940.D	10/05/20	11:11	02:51	Method Blank
ZZZZZZ	D271940A.D	10/05/20	11:11	02:51	(unrelated sample)
ZZZZZZ	D271941.D	10/05/20	11:39	03:19	(unrelated sample)
JD13892-2	D271943.D	10/05/20	13:50	05:30	B-9B
JD13892-2MS	D271946.D	10/05/20	15:17	06:57	Matrix Spike
JD13892-2MSD	D271947.D	10/05/20	15:46	07:26	Matrix Spike Duplicate

# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VD10967-BFB	Injection Date: 10/06/20
Lab File ID: D271965.D	Injection Time: 08:11
Instrument ID: GCMSD	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	15268	17.7	Pass
75	30.0 - 60.0% of mass 95	41669	48.3	Pass
95	Base peak, 100% relative abundance	86307	100.0	Pass
96	5.0 - 9.0% of mass 95	5995	6.95	Pass
173	Less than 2.0% of mass 174	495	0.57 (0.61) <sup>a</sup>	Pass
174	50.0 - 150.0% of mass 95	81672	94.6	Pass
175	5.0 - 9.0% of mass 174	5965	6.91 (7.30) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	79837	92.5 (97.8) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	5327	6.17 (6.67) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VD10967-CC10947	D271965.D	10/06/20	08:11	00:00	Continuing cal 50
VD10967-BS	D271968.D	10/06/20	09:41	01:30	Blank Spike
ZZZZZZ	D271970A.D	10/06/20	10:39	02:28	(unrelated sample)
VD10967-MB	D271970.D	10/06/20	10:39	02:28	Method Blank
JD13892-5	D271971.D	10/06/20	11:08	02:57	B-11A
JD13892-5MS	D271973.D	10/06/20	12:21	04:10	Matrix Spike
JD13892-5MSD	D271974.D	10/06/20	12:50	04:39	Matrix Spike Duplicate

6.6.4  
6



# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VI9471-BFB	Injection Date: 09/16/20
Lab File ID: I233969.D	Injection Time: 18:04
Instrument ID: GCMSI	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	10393	19.2	Pass
75	30.0 - 60.0% of mass 95	26125	48.3	Pass
95	Base peak, 100% relative abundance	54093	100.0	Pass
96	5.0 - 9.0% of mass 95	3479	6.43	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	55744	103.1	Pass
175	5.0 - 9.0% of mass 174	4055	7.50 (7.27) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	53389	98.7 (95.8) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	3610	6.67 (6.76) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI9471-IC9471	I233970.D	09/16/20	18:44	00:40	Initial cal 0.2
VI9471-IC9471	I233971.D	09/16/20	19:13	01:09	Initial cal 0.5
VI9471-IC9471	I233972.D	09/16/20	19:43	01:39	Initial cal 1
VI9471-IC9471	I233973.D	09/16/20	20:12	02:08	Initial cal 2
VI9471-IC9471	I233974.D	09/16/20	20:41	02:37	Initial cal 4
VI9471-IC9471	I233975.D	09/16/20	21:10	03:06	Initial cal 8
VI9471-IC9471	I233976.D	09/16/20	21:39	03:35	Initial cal 20
VI9471-ICC9471	I233977.D	09/16/20	22:09	04:05	Initial cal 50
VI9471-IC9471	I233978.D	09/16/20	22:38	04:34	Initial cal 100
VI9471-IC9471	I233979.D	09/16/20	23:07	05:03	Initial cal 200
VI9471-ICV9471	I233982.D	09/17/20	00:35	06:31	Initial cal verification 50
VI9471-ICV9471	I233983.D	09/17/20	01:04	07:00	Initial cal verification 50

# Instrument Performance Check (BFB)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample: VI9486-BFB	Injection Date: 10/03/20
Lab File ID: I234302.D	Injection Time: 12:23
Instrument ID: GCMSI	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	11824	18.6	Pass
75	30.0 - 60.0% of mass 95	29648	46.7	Pass
95	Base peak, 100% relative abundance	63539	100.0	Pass
96	5.0 - 9.0% of mass 95	4255	6.70	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	62669	98.6	Pass
175	5.0 - 9.0% of mass 174	5013	7.89 (8.00) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	62128	97.8 (99.1) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	4533	7.13 (7.30) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI9486-CC9471	I234302.D	10/03/20	12:23	00:00	Continuing cal 50
VI9486-BS	I234303.D	10/03/20	13:15	00:52	Blank Spike
VI9486-MB	I234305.D	10/03/20	14:26	02:03	Method Blank
JD13892-3	I234306.D	10/03/20	14:55	02:32	B-10A
JD13892-4	I234307.D	10/03/20	15:24	03:01	B-10B
JD13892-6	I234308.D	10/03/20	15:53	03:30	B-12A
JD13892-7	I234309.D	10/03/20	16:22	03:59	B-12B
JD13892-9	I234310.D	10/03/20	16:51	04:28	B-13B
JD13892-1	I234311.D	10/03/20	17:20	04:57	B-9A
JD13892-8	I234312.D	10/03/20	17:49	05:26	B-13A
JD13892-10	I234313.D	10/03/20	18:18	05:55	B-14A
JD13892-4MS	I234314.D	10/03/20	18:47	06:24	Matrix Spike
JD13892-6DUP	I234316.D	10/03/20	19:45	07:22	Duplicate
ZZZZZZ	I234317.D	10/03/20	20:14	07:51	(unrelated sample)
JD13892-11	I234318.D	10/03/20	20:44	08:21	B-14B
JD13892-12	I234319.D	10/03/20	21:13	08:50	B-15A
JD13892-13	I234320.D	10/03/20	21:42	09:19	B-15B
JD13892-14	I234321.D	10/03/20	22:11	09:48	B-16A
JD13892-15	I234322.D	10/03/20	22:40	10:17	B-16B
ZZZZZZ	I234323.D	10/03/20	23:09	10:46	(unrelated sample)
ZZZZZZ	I234324.D	10/03/20	23:38	11:15	(unrelated sample)
ZZZZZZ	I234325.D	10/04/20	00:07	11:44	(unrelated sample)

# Surrogate Recovery Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Method: SW846 8260C	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD13892-1	I234311.D	109	104	103	108
JD13892-2	D271943.D	95	91	100	96
JD13892-3	I234306.D	105	98	105	118
JD13892-4	I234307.D	104	100	100	103
JD13892-5	D271971.D	100	94	102	96
JD13892-6	I234308.D	105	102	102	102
JD13892-7	I234309.D	108	103	101	106
JD13892-8	I234312.D	109	105	101	103
JD13892-9	I234310.D	107	104	100	103
JD13892-10	I234313.D	108	102	102	104
JD13892-11	I234318.D	104	98	100	99
JD13892-12	I234319.D	106	102	102	105
JD13892-13	I234320.D	107	104	100	101
JD13892-14	I234321.D	107	103	102	106
JD13892-15	I234322.D	110	104	100	101
JD13892-2MS	D271946.D	95	94	100	93
JD13892-2MSD	D271947.D	95	90	101	90
JD13892-4MS	I234314.D	108	98	103	99
JD13892-5MS	D271973.D	96	91	102	94
JD13892-5MSD	D271974.D	95	99	100	98
JD13892-6DUP	I234316.D	108	104	102	104
VD10966-BS	D271938.D	93	91	100	97
VD10966-MB	D271940.D	93	91	99	103
VD10967-BS	D271968.D	97	92	99	96
VD10967-MB	D271970.D	99	92	99	102
VI9486-BS	I234303.D	98	88	100	91
VI9486-MB	I234305.D	98	93	99	99

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	72-130%
S2 = 1,2-Dichloroethane-D4	75-131%
S3 = Toluene-D8	81-121%
S4 = 4-Bromofluorobenzene	60-141%

6.7.1

6

## MS Semi-volatiles

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### QC Data Summaries

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#### Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29800-MB1	6P493883.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138

The QC reported here applies to the following samples: Method: SW846 8270D

JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	76% 7-101%
4165-62-2	Phenol-d5	74% 12-101%
118-79-6	2,4,6-Tribromophenol	79% 10-127%
4165-60-0	Nitrobenzene-d5	80% 15-114%
321-60-8	2-Fluorobiphenyl	80% 22-104%
1718-51-0	Terphenyl-d14	82% 23-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	2.17	360	ug/kg	J
	System artifact/aldol-condensation	3.40	140	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

# Blank Spike/Blank Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29800-BS1	6P493884.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138
OP29800-BSD	6P493885.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138

The QC reported here applies to the following samples:

Method: SW846 8270D

JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1670	1290	77	1350	81	5	24-129/16
208-96-8	Acenaphthylene	1670	1250	75	1320	79	5	25-130/17
120-12-7	Anthracene	1670	1320	79	1400	84	6	28-131/18
56-55-3	Benzo(a)anthracene	1670	1370	82	1440	86	5	30-130/20
50-32-8	Benzo(a)pyrene	1670	1370	82	1440	86	5	27-139/20
205-99-2	Benzo(b)fluoranthene	1670	1350	81	1450	87	7	32-133/21
191-24-2	Benzo(g,h,i)perylene	1670	1360	82	1460	88	7	24-141/23
207-08-9	Benzo(k)fluoranthene	1670	1320	79	1410	85	7	26-135/21
218-01-9	Chrysene	1670	1340	80	1400	84	4	29-127/20
53-70-3	Dibenzo(a,h)anthracene	1670	1290	77	1370	82	6	24-135/23
206-44-0	Fluoranthene	1670	1380	83	1470	88	6	31-134/23
86-73-7	Fluorene	1670	1340	80	1430	86	6	26-136/18
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1340	80	1430	86	6	26-137/25
91-20-3	Naphthalene	1670	1230	74	1280	77	4	26-127/19
85-01-8	Phenanthrene	1670	1320	79	1410	85	7	26-131/19
129-00-0	Pyrene	1670	1310	79	1380	83	5	30-131/24

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	76%	84%	7-101%
4165-62-2	Phenol-d5	74%	80%	12-101%
118-79-6	2,4,6-Tribromophenol	80%	86%	10-127%
4165-60-0	Nitrobenzene-d5	77%	82%	15-114%
321-60-8	2-Fluorobiphenyl	80%	86%	22-104%
1718-51-0	Terphenyl-d14	78%	83%	23-121%

\* = Outside of Control Limits.

7.2.1  
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# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29800-MS	6P493899.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138
OP29800-MSD	6P493900.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138
JD13831-2	6P493889.D	1	10/02/20	HSS	10/02/20	OP29800	E6P3138

The QC reported here applies to the following samples:

Method: SW846 8270D

JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

CAS No.	Compound	JD13831-2 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
83-32-9	Acenaphthene	ND		8000	5900	74	8020	5860	73	1	10-145/63
208-96-8	Acenaphthylene	ND		8000	5730	72	8020	5670	71	1	10-144/59
120-12-7	Anthracene	ND		8000	6100	76	8020	6050	75	1	10-153/66
56-55-3	Benzo(a)anthracene	ND		8000	6330	79	8020	6320	79	0	10-157/71
50-32-8	Benzo(a)pyrene	ND		8000	6400	80	8020	6210	77	3	10-164/67
205-99-2	Benzo(b)fluoranthene	ND		8000	6350	79	8020	6150	77	3	10-154/69
191-24-2	Benzo(g,h,i)perylene	ND		8000	6290	79	8020	6150	77	2	10-156/64
207-08-9	Benzo(k)fluoranthene	ND		8000	5890	74	8020	5780	72	2	10-156/62
218-01-9	Chrysene	ND		8000	6230	78	8020	6080	76	2	10-148/70
53-70-3	Dibenzo(a,h)anthracene	ND		8000	5910	74	8020	5810	72	2	10-146/63
206-44-0	Fluoranthene	ND		8000	6390	80	8020	6320	79	1	10-171/80
86-73-7	Fluorene	ND		8000	6180	77	8020	6130	76	1	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	ND		8000	6190	77	8020	6040	75	2	10-152/65
91-20-3	Naphthalene	ND		8000	5370	67	8020	5250	65	2	10-147/64
85-01-8	Phenanthrene	ND		8000	6170	77	8020	6100	76	1	10-162/81
129-00-0	Pyrene	ND		8000	6270	78	8020	6230	78	1	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD13831-2	Limits
367-12-4	2-Fluorophenol	69%	66%	69%	7-101%
4165-62-2	Phenol-d5	70%	66%	69%	12-101%
118-79-6	2,4,6-Tribromophenol	80%	77%	66%	10-127%
4165-60-0	Nitrobenzene-d5	70%	68%	78%	15-114%
321-60-8	2-Fluorobiphenyl	79%	77%	78%	22-104%
1718-51-0	Terphenyl-d14	78%	77%	86%	23-121%

\* = Outside of Control Limits.

7.3.1  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	E6P3132-DFTPP	Injection Date:	09/29/20
Lab File ID:	6P493774.D	Injection Time:	22:36
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	79128	36.5	Pass
68	Less than 2.0% of mass 69	1521	0.70 (1.87) <sup>a</sup>	Pass
69	Mass 69 relative abundance	81209	37.4	Pass
70	Less than 2.0% of mass 69	414	0.19 (0.51) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	111112	51.2	Pass
197	Less than 1.0% of mass 198	1101	0.51	Pass
198	Base peak, 100% relative abundance	216880	100.0	Pass
199	5.0 - 9.0% of mass 198	14856	6.85	Pass
275	10.0 - 30.0% of mass 198	59541	27.5	Pass
365	1.0 - 100.0% of mass 198	9340	4.31	Pass
441	Present, but less than mass 443	24244	11.2 (79.6) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	158184	72.9	Pass
443	17.0 - 23.0% of mass 442	30469	14.0 (19.3) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3132-IC3132	6P493775.D	09/29/20	23:10	00:34	Initial cal 1
E6P3132-IC3132	6P493776.D	09/29/20	23:34	00:58	Initial cal 2
E6P3132-IC3132	6P493777.D	09/29/20	23:58	01:22	Initial cal 5
E6P3132-IC3132	6P493778.D	09/30/20	00:22	01:46	Initial cal 10
E6P3132-IC3132	6P493779.D	09/30/20	00:46	02:10	Initial cal 25
E6P3132-ICC3132	6P493780.D	09/30/20	01:10	02:34	Initial cal 50
E6P3132-IC3132	6P493781.D	09/30/20	01:34	02:58	Initial cal 80
E6P3132-IC3132	6P493782.D	09/30/20	01:58	03:22	Initial cal 100
E6P3132-ICV3132	6P493783.D	09/30/20	02:22	03:46	Initial cal verification 50
E6P3132-ICV3132	6P493784.D	09/30/20	02:46	04:10	Initial cal verification 50
E6P3132-ICV3132	6P493785.D	09/30/20	03:10	04:34	Initial cal verification 50
E6P3132-ICV3132	6P493786.D	09/30/20	03:34	04:58	Initial cal verification 50

7.4.1  
7



# Instrument Performance Check (DFTPP)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	E6P3133-DFTPP	Injection Date:	09/30/20
Lab File ID:	6P493787.D	Injection Time:	03:53
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	67965	48.5	Pass
68	Less than 2.0% of mass 69	969	0.69 (1.49) <sup>a</sup>	Pass
69	Mass 69 relative abundance	64904	46.3	Pass
70	Less than 2.0% of mass 69	328	0.23 (0.51) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	79989	57.1	Pass
197	Less than 1.0% of mass 198	842	0.60	Pass
198	Base peak, 100% relative abundance	140181	100.0	Pass
199	5.0 - 9.0% of mass 198	9262	6.61	Pass
275	10.0 - 30.0% of mass 198	38021	27.1	Pass
365	1.0 - 100.0% of mass 198	6575	4.69	Pass
441	Present, but less than mass 443	15720	11.2 (81.9) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	100274	71.5	Pass
443	17.0 - 23.0% of mass 442	19185	13.7 (19.1) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3133-IC3133	6P493788.D	09/30/20	04:07	00:14	Initial cal 1
E6P3133-IC3133	6P493789.D	09/30/20	04:31	00:38	Initial cal 2
E6P3133-IC3133	6P493790.D	09/30/20	04:55	01:02	Initial cal 5
E6P3133-IC3133	6P493791.D	09/30/20	05:19	01:26	Initial cal 10
E6P3133-IC3133	6P493792.D	09/30/20	05:43	01:50	Initial cal 25
E6P3133-ICC3133	6P493793.D	09/30/20	06:07	02:14	Initial cal 50
E6P3133-IC3133	6P493794.D	09/30/20	06:30	02:37	Initial cal 80
E6P3133-IC3133	6P493795.D	09/30/20	06:54	03:01	Initial cal 100
E6P3133-ICV3133	6P493796.D	09/30/20	07:18	03:25	Initial cal verification 50

7.4.2  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	E6P3134-DFTPP	Injection Date:	09/30/20
Lab File ID:	6P493801.D	Injection Time:	10:19
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	59821	50.3	Pass
68	Less than 2.0% of mass 69	761	0.64 (1.37) <sup>a</sup>	Pass
69	Mass 69 relative abundance	55710	46.9	Pass
70	Less than 2.0% of mass 69	282	0.24 (0.51) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	65335	55.0	Pass
197	Less than 1.0% of mass 198	579	0.49	Pass
198	Base peak, 100% relative abundance	118869	100.0	Pass
199	5.0 - 9.0% of mass 198	8240	6.93	Pass
275	10.0 - 30.0% of mass 198	34468	29.0	Pass
365	1.0 - 100.0% of mass 198	5883	4.95	Pass
441	Present, but less than mass 443	13942	11.7 (86.4) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	89264	75.1	Pass
443	17.0 - 23.0% of mass 442	16136	13.6 (18.1) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3134-IC3134	6P493802.D	09/30/20	10:31	00:12	Initial cal 1
E6P3134-IC3134	6P493803.D	09/30/20	10:55	00:36	Initial cal 2
E6P3134-IC3134	6P493804.D	09/30/20	11:20	01:01	Initial cal 5
E6P3134-IC3134	6P493805.D	09/30/20	11:44	01:25	Initial cal 10
E6P3134-IC3134	6P493806.D	09/30/20	12:07	01:48	Initial cal 25
E6P3134-ICC3134	6P493807.D	09/30/20	12:29	02:10	Initial cal 50
E6P3134-IC3134	6P493808.D	09/30/20	12:53	02:34	Initial cal 80
E6P3134-IC3134	6P493809.D	09/30/20	13:17	02:58	Initial cal 100
E6P3134-ICV3134	6P493810.D	09/30/20	13:40	03:21	Initial cal verification 50
E6P3134-ICV3134	6P493811.D	09/30/20	14:04	03:45	Initial cal verification 50
E6P3134-ICV3134	6P493812.D	09/30/20	14:27	04:08	Initial cal verification 50

7.4.3  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	E6P3138-DFTPP	Injection Date:	10/02/20
Lab File ID:	6P493878.D	Injection Time:	14:54
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	76190	37.9	Pass
68	Less than 2.0% of mass 69	1108	0.55 (1.36) <sup>a</sup>	Pass
69	Mass 69 relative abundance	81715	40.6	Pass
70	Less than 2.0% of mass 69	329	0.16 (0.40) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	101003	50.2	Pass
197	Less than 1.0% of mass 198	1192	0.59	Pass
198	Base peak, 100% relative abundance	201285	100.0	Pass
199	5.0 - 9.0% of mass 198	13704	6.81	Pass
275	10.0 - 30.0% of mass 198	57472	28.6	Pass
365	1.0 - 100.0% of mass 198	8683	4.31	Pass
441	Present, but less than mass 443	22318	11.1 (79.1) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	141712	70.4	Pass
443	17.0 - 23.0% of mass 442	28208	14.0 (19.9) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3138-CC3132	6P493879.D	10/02/20	14:59	00:05	Continuing cal 25
E6P3138-CC3133	6P493880.D	10/02/20	15:23	00:29	Continuing cal 25
E6P3138-CC3134	6P493881.D	10/02/20	15:46	00:52	Continuing cal 25
OP29800-MB1	6P493883.D	10/02/20	16:33	01:39	Method Blank
OP29800-BS1	6P493884.D	10/02/20	16:57	02:03	Blank Spike
OP29800-BSD	6P493885.D	10/02/20	17:20	02:26	Blank Spike Duplicate
JD13892-4	6P493886.D	10/02/20	17:44	02:50	B-10B
JD13892-11	6P493887.D	10/02/20	18:07	03:13	B-14B
JD13892-15	6P493888.D	10/02/20	18:31	03:37	B-16B
JD13831-2	6P493889.D	10/02/20	18:54	04:00	(used for QC only; not part of job JD13892)
JD13892-13	6P493890.D	10/02/20	19:18	04:24	B-15B
JD13892-12	6P493891.D	10/02/20	19:42	04:48	B-15A
JD13892-14	6P493892.D	10/02/20	20:05	05:11	B-16A
ZZZZZZ	6P493893.D	10/02/20	20:29	05:35	(unrelated sample)
JD13892-10	6P493894.D	10/02/20	20:52	05:58	B-14A
JD13892-9	6P493895.D	10/02/20	21:15	06:21	B-13B
JD13892-8	6P493896.D	10/02/20	21:39	06:45	B-13A
ZZZZZZ	6P493897.D	10/02/20	22:02	07:08	(unrelated sample)
ZZZZZZ	6P493898.D	10/02/20	22:25	07:31	(unrelated sample)

7.4.4  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
Account: BLNJCH BL Companies  
Project: Former TCCA, Oreland, PA

Sample:	E6P3138-DFTPP	Injection Date:	10/02/20
Lab File ID:	6P493878.D	Injection Time:	14:54
Instrument ID:	GCMS6P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP29800-MS	6P493899.D	10/02/20	22:49	07:55	Matrix Spike
OP29800-MSD	6P493900.D	10/02/20	23:12	08:18	Matrix Spike Duplicate
ZZZZZZ	6P493901.D	10/02/20	23:36	08:42	(unrelated sample)
JD13892-3	6P493902.D	10/02/20	23:59	09:05	B-10A
JD13892-5	6P493903.D	10/03/20	00:22	09:28	B-11A
JD13892-2	6P493904A.D	10/03/20	01:10	10:16	B-9B
ZZZZZZ	6P493906.D	10/03/20	02:07	11:13	(unrelated sample)
JD13892-1	6P493908.D	10/03/20	02:53	11:59	B-9A

7.4.4  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Sample:	E6P3139-DFTPP	Injection Date:	10/05/20
Lab File ID:	6P493909.D	Injection Time:	15:56
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	63310	41.7	Pass
68	Less than 2.0% of mass 69	1245	0.82 (1.89) <sup>a</sup>	Pass
69	Mass 69 relative abundance	65745	43.3	Pass
70	Less than 2.0% of mass 69	392	0.26 (0.60) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	79363	52.3	Pass
197	Less than 1.0% of mass 198	873	0.58	Pass
198	Base peak, 100% relative abundance	151781	100.0	Pass
199	5.0 - 9.0% of mass 198	10083	6.64	Pass
275	10.0 - 30.0% of mass 198	41857	27.6	Pass
365	1.0 - 100.0% of mass 198	6125	4.04	Pass
441	Present, but less than mass 443	14846	9.78 (81.6) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	92604	61.0	Pass
443	17.0 - 23.0% of mass 442	18196	12.0 (19.6) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3139-CC3132	6P493910.D	10/05/20	16:10	00:14	Continuing cal 50
E6P3139-CC3133	6P493911.D	10/05/20	16:34	00:38	Continuing cal 50
E6P3139-CC3134	6P493912.D	10/05/20	16:58	01:02	Continuing cal 50
OP29826-MB1	6P493914.D	10/05/20	17:46	01:50	Method Blank
OP29826-MB1	6P493914.D	10/05/20	17:46	01:50	Method Blank
OP29826-BS1	6P493915.D	10/05/20	18:10	02:14	Blank Spike
OP29826-BS1	6P493915.D	10/05/20	18:10	02:14	Blank Spike
OP29826-BSD	6P493916.D	10/05/20	18:34	02:38	Blank Spike Duplicate
OP29826-BSD	6P493916.D	10/05/20	18:34	02:38	Blank Spike Duplicate
OP29826-MS	6P493917.D	10/05/20	18:58	03:02	Matrix Spike
OP29826-MSD	6P493918.D	10/05/20	19:21	03:25	Matrix Spike Duplicate
JD14022-1	6P493919.D	10/05/20	19:45	03:49	(used for QC only; not part of job JD13892)
ZZZZZZ	6P493920.D	10/05/20	20:09	04:13	(unrelated sample)
ZZZZZZ	6P493922.D	10/05/20	20:56	05:00	(unrelated sample)
ZZZZZZ	6P493923.D	10/05/20	21:20	05:24	(unrelated sample)
ZZZZZZ	6P493924.D	10/05/20	21:45	05:49	(unrelated sample)
ZZZZZZ	6P493925.D	10/05/20	22:08	06:12	(unrelated sample)
ZZZZZZ	6P493926.D	10/05/20	22:31	06:35	(unrelated sample)
ZZZZZZ	6P493927.D	10/05/20	22:54	06:58	(unrelated sample)

7.4.5  
7

# Instrument Performance Check (DFTPP)

Job Number: JD13892  
Account: BLNJCH BL Companies  
Project: Former TCCA, Oreland, PA

Sample:	E6P3139-DFTPP	Injection Date:	10/05/20
Lab File ID:	6P493909.D	Injection Time:	15:56
Instrument ID:	GCMS6P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6P493928.D	10/05/20	23:18	07:22	(unrelated sample)
ZZZZZZ	6P493929.D	10/05/20	23:41	07:45	(unrelated sample)
ZZZZZZ	6P493930.D	10/06/20	00:05	08:09	(unrelated sample)
JD13892-7	6P493931.D	10/06/20	00:28	08:32	B-12B
ZZZZZZ	6P493932.D	10/06/20	00:52	08:56	(unrelated sample)
JD13892-6	6P493933.D	10/06/20	01:15	09:19	B-12A
ZZZZZZ	6P493934.D	10/06/20	01:39	09:43	(unrelated sample)
JD13892-5	6P493935.D	10/06/20	02:02	10:06	B-11A
JD13892-2	6P493936.D	10/06/20	02:26	10:30	B-9B
JD13892-1	6P493937.D	10/06/20	02:49	10:53	B-9A
ZZZZZZ	6P493938.D	10/06/20	03:13	11:17	(unrelated sample)

7.4.5  
7

# Surrogate Recovery Summary

Job Number: JD13892  
 Account: BLNJCH BL Companies  
 Project: Former TCCA, Oreland, PA

Method: SW846 8270D	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD13892-1	6P493937.D	51	58	79
JD13892-1	6P493908.D	55	53	58
JD13892-2	6P493936.D	58	65	61
JD13892-2	6P493904A.D	53	52	50
JD13892-3	6P493902.D	56	61	62
JD13892-4	6P493886.D	63	64	74
JD13892-5	6P493935.D	59	67	63
JD13892-5	6P493903.D	56	58	51
JD13892-6	6P493933.D	43	48	44
JD13892-7	6P493931.D	46	47	46
JD13892-8	6P493896.D	71	73	70
JD13892-9	6P493895.D	62	68	73
JD13892-10	6P493894.D	66	68	69
JD13892-11	6P493887.D	65	65	70
JD13892-12	6P493891.D	55	55	55
JD13892-13	6P493890.D	71	73	72
JD13892-14	6P493892.D	67	69	68
JD13892-15	6P493888.D	68	70	73
OP29800-BS1	6P493884.D	77	80	78
OP29800-BSD	6P493885.D	82	86	83
OP29800-MB1	6P493883.D	80	80	82
OP29800-MS	6P493899.D	70	79	78
OP29800-MSD	6P493900.D	68	77	77

Surrogate Compounds                      Recovery Limits

S1 = Nitrobenzene-d5	15-114%
S2 = 2-Fluorobiphenyl	22-104%
S3 = Terphenyl-d14	23-121%

7.5.1  
7

## Metals Analysis

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### QC Data Summaries

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**Includes the following where applicable:**

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13892  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 10/01/20

Metal	RL	IDL	MDL	MB raw	final
Aluminum	49	1.7	7.9		
Antimony	2.0	.098	.4	0.16	<2.0
Arsenic	2.0	.078	.27	-0.078	<2.0
Barium	20	.049	1.9		
Beryllium	0.20	.0098	.078	0.0098	<0.20
Bismuth	2.0	.18	.51		
Boron	9.8	.19	1.4		
Cadmium	0.49	.02	.069	0.0098	<0.49
Calcium	490	.41	43		
Chromium	0.98	.029	.36	0.020	<0.98
Cobalt	4.9	.029	.27		
Copper	2.5	.2	.82	0.14	<2.5
Iron	49	.32	19		
Lead	2.0	.15	.4	0.088	<2.0
Lithium	4.9	.2	.9		
Magnesium	490	2.4	13		
Manganese	1.5	.0098	.4		
Molybdenum	2.0	.029	.31		
Nickel	3.9	.029	.34	0.029	<3.9
Phosphorus	20	.17	3.2		
Potassium	980	5.3	31		
Selenium	2.0	.28	.64	-0.020	<2.0
Silicon	20	.13	10		
Silver	0.49	.098	.17	0.049	<0.49
Sodium	980	1.7	76		
Strontium	4.9	.0098	.18		
Sulfur	9.8	.17	9.2		
Thallium	0.98	.15	.57	0.19	<0.98
Tin	20	.059	3.7		
Titanium	0.98	.039	.33		
Tungsten	4.9	.19	1.7		
Vanadium	4.9	.049	.19		
Zinc	20	.02	2.3	8.0	<20

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13892  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 10/01/20

Metal	RL	IDL	MDL	MB	
				raw	final

Zirconium 2.0 .039 .23

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.1.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13831-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits	
Aluminum	anr				
Antimony	0.0	431	500	86.2	75-125
Arsenic	0.0	504	500	100.8	75-125
Barium	anr				
Beryllium	2.1	514	500	102.4	75-125
Bismuth					
Boron					
Cadmium	0.0	483	500	96.6	75-125
Calcium	anr				
Chromium	0.88	510	500	101.8	75-125
Cobalt	anr				
Copper	0.0	490	500	98.0	75-125
Iron	anr				
Lead	6.3	487	500	96.1	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	5.8	489	500	96.6	75-125
Phosphorus					
Potassium	anr				
Selenium	0.0	485	500	97.0	75-125
Silicon					
Silver	0.0	59.9	62.5	95.8	75-125
Sodium	anr				
Strontium					
Sulfur					
Thallium	0.0	489	500	97.8	75-125
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	4.8	499	500	98.8	75-125

8.12  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13831-1 Original MS	SpikeLot MPSPK2	% Rec	QC Limits
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Zirconium

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.12  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13831-1 Original MSD		SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	0.0	441	500	88.2	2.3	20
Arsenic	0.0	517	500	103.4	2.5	20
Barium	anr					
Beryllium	2.1	535	500	106.6	4.0	20
Bismuth						
Boron						
Cadmium	0.0	495	500	99.0	2.5	20
Calcium	anr					
Chromium	0.88	510	500	101.8	0.0	20
Cobalt	anr					
Copper	0.0	494	500	98.8	0.8	20
Iron	anr					
Lead	6.3	497	500	98.1	2.0	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	5.8	502	500	99.2	2.6	20
Phosphorus						
Potassium	anr					
Selenium	0.0	501	500	100.2	3.2	20
Silicon						
Silver	0.0	60.5	62.5	96.8	1.0	20
Sodium	anr					
Strontium						
Sulfur						
Thallium	0.0	505	500	101.0	3.2	20
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	4.8	509	500	100.8	2.0	20

8.12  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13831-1 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
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Zirconium

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.1.2  
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	189	204	92.6	80-120
Arsenic	187	204	91.6	80-120
Barium	anr			
Beryllium	177	204	86.7	80-120
Bismuth				
Boron				
Cadmium	181	204	88.7	80-120
Calcium	anr			
Chromium	182	204	89.2	80-120
Cobalt	anr			
Copper	186	204	91.1	80-120
Iron	anr			
Lead	186	204	91.1	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	184	204	90.2	80-120
Phosphorus				
Potassium	anr			
Selenium	179	204	87.7	80-120
Silicon				
Silver	23.1	25.5	90.6	80-120
Sodium	anr			
Strontium				
Sulfur				
Thallium	190	204	93.1	80-120
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	186	204	91.1	80-120

8.1.3  
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 10/01/20

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
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Zirconium

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits  
 (anr) Analyte not requested

8.1.3  
 8



SERIAL DILUTION RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 10/01/20

Metal	JD13831-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	0.00	0.00	NC	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	anr			
Beryllium	8.30	0.00	100.0(a)	0-10
Bismuth				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Chromium	3.50	0.00	100.0(a)	0-10
Cobalt	anr			
Copper	0.00	0.00	NC	0-10
Iron	anr			
Lead	25.2	0.00	100.0(a)	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	23.3	0.00	100.0(a)	0-10
Phosphorus				
Potassium	anr			
Selenium	0.00	98.4	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	19.1	0.00	100.0(a)	0-10

8.1.4  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD13892  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: ug/l

Prep Date: 10/01/20

Metal	JD13831-1	QC
	Original SDL 1:5	%DIF Limits

Zirconium

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

8.1.4

8

POST DIGESTATE SPIKE SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date:

10/01/20

Metal	Sample ml	Final ml	JD13831-1 Raw	PS Corr.**	ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

8.1.5  
8

POST DIGESTATE SPIKE SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23030  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date:

10/01/20

Metal	Sample ml	Final ml	JD13831-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
-------	--------------	-------------	------------------	---------------	------------	-------------	----------------	---------------	-------	--------------

Zirconium

Associated samples MP23030: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (\*\*) Corr. sample result = Raw \* (sample volume / final volume)  
 (anr) Analyte not requested

8.1.5  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD13892  
Account: BLNJCH - BL Companies  
Project: Former TCCA, Oreland, PA

QC Batch ID: MP23064  
Matrix Type: SOLID

Methods: SW846 7471B  
Units: mg/kg

Prep Date: 10/01/20

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.033	.0036	.015	-0.0058	<0.033

Associated samples MP23064: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23064  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13892-11 Original MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.0	0.36	0.396	90.8 80-120

Associated samples MP23064: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23064  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20

Metal	JD13892-11 Original MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.36	0.393	91.5	0.0 20

Associated samples MP23064: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2  
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD13892  
 Account: BLNJCH - BL Companies  
 Project: Former TCCA, Oreland, PA

QC Batch ID: MP23064  
 Matrix Type: SOLID

Methods: SW846 7471B  
 Units: mg/kg

Prep Date: 10/01/20

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.30	0.333	90.0	80-120

Associated samples MP23064: JD13892-1, JD13892-2, JD13892-3, JD13892-4, JD13892-5, JD13892-6, JD13892-7, JD13892-8, JD13892-9, JD13892-10, JD13892-11, JD13892-12, JD13892-13, JD13892-14, JD13892-15

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.2.3

8



## **APPENDIX G**

### Laboratory Reports – 2017 - 2022 Ground Water Samples

September 15, 2017

Mr. John Thatcher  
BL Companies  
4242 Carlisle Pike  
Camp Hill, PA 17011

RE: Project: Springfield  
Pace Project No.: 30229043

Dear Mr. Thatcher:

Enclosed are the analytical results for sample(s) received by the laboratory on September 01, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Mr. Mike Beardsley, BL Companies  
Kellen Bullock, BL Companies  
Mr. Rob Good, BL Companies  
Mr. Randy Shick, BL Companies  
Mr. Ken Yoder, BL Companies



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Springfield

Pace Project No.: 30229043

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### Pennsylvania Certification IDs

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

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana 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 #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

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

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

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 Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-1	Lab ID: 30229043001	Collected: 08/31/17 12:20	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3005A						
Aluminum	214	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:50	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:50	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7440-38-2	
Barium	28.8	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:50	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/06/17 10:13	09/07/17 10:50	7440-41-7	
Boron	772	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:50	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/06/17 10:13	09/07/17 10:50	7440-43-9	
Calcium	45800	ug/L	1000	1	09/06/17 10:13	09/07/17 10:50	7440-70-2	
Chromium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7440-47-3	
Cobalt	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7440-48-4	
Copper	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7440-50-8	
Iron	688	ug/L	70.0	1	09/06/17 10:13	09/07/17 10:50	7439-89-6	
Lead	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7439-92-1	
Magnesium	26000	ug/L	200	1	09/06/17 10:13	09/07/17 10:50	7439-95-4	
Manganese	64.6	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/06/17 10:13	09/07/17 10:50	7439-98-7	
Nickel	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:50	7440-02-0	
Potassium	2850	ug/L	500	1	09/06/17 10:13	09/07/17 10:50	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/06/17 10:13	09/07/17 10:50	7782-49-2	
Silver	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:50	7440-22-4	
Sodium	6990	ug/L	1000	1	09/06/17 10:13	09/07/17 10:50	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:50	7440-28-0	
Vanadium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:50	7440-62-2	
Zinc	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:50	7440-66-6	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	ug/L	0.20	1	09/07/17 08:43	09/07/17 22:11	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>		Analytical Method: EPA 8270C Preparation Method: EPA 3510C						
Acenaphthene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	83-32-9	1c
Acenaphthylene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	208-96-8	1c
Anthracene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	120-12-7	1c
Azobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	56-55-3	1c
Benzo(a)pyrene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	50-32-8	1c
Benzo(b)fluoranthene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	191-24-2	1c
Benzo(k)fluoranthene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	207-08-9	1c
Benzoic acid	ND	ug/L	24.8	1	09/06/17 08:25	09/14/17 23:16	65-85-0	1c
Benzyl alcohol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	85-68-7	1c
Carbazole	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	86-74-8	1c
4-Chloro-3-methylphenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	59-50-7	1c,L1
4-Chloroaniline	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	111-91-1	1c,L1

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-1	Lab ID: 30229043001	Collected: 08/31/17 12:20	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	91-58-7	1c
2-Chlorophenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	7005-72-3	1c
Chrysene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	53-70-3	1c
Dibenzofuran	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	91-94-1	1c
2,4-Dichlorophenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	120-83-2	1c,L1
Diethylphthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	105-67-9	1c
Dimethylphthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	117-81-7	1c
Fluoranthene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	206-44-0	1c
Fluorene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	87-68-3	1c
Hexachlorobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	77-47-4	1c
Hexachloroethane	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	193-39-5	1c
Isophorone	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	78-59-1	1c,L1
1-Methylnaphthalene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	91-57-6	1c,L1
2-Methylphenol(o-Cresol)	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.0	1	09/06/17 08:25	09/14/17 23:16		1c
Naphthalene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	91-20-3	1c,L1
2-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	99-09-2	1c
4-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	100-01-6	1c
Nitrobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	98-95-3	1c
2-Nitrophenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	88-75-5	1c,L1
4-Nitrophenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	87-86-5	1c
Phenanthrene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	85-01-8	1c

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-1	Lab ID: 30229043001	Collected: 08/31/17 12:20	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	108-95-2	1c
Pyrene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:16	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	0.99	1	09/06/17 08:25	09/14/17 23:16	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	79	%	13-114	1	09/06/17 08:25	09/14/17 23:16	4165-60-0	
2-Fluorobiphenyl (S)	79	%	19-103	1	09/06/17 08:25	09/14/17 23:16	321-60-8	
Terphenyl-d14 (S)	89	%	14-124	1	09/06/17 08:25	09/14/17 23:16	1718-51-0	
Phenol-d6 (S)	27	%	10-113	1	09/06/17 08:25	09/14/17 23:16	13127-88-3	
2-Fluorophenol (S)	43	%	10-115	1	09/06/17 08:25	09/14/17 23:16	367-12-4	
2,4,6-Tribromophenol (S)	80	%	36-114	1	09/06/17 08:25	09/14/17 23:16	118-79-6	
<b>8260B MSV</b>								
Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/06/17 20:20	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 20:20	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 20:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 20:20	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 20:20	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 20:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 20:20	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 20:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 20:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 20:20	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 20:20	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 20:20	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 20:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 20:20	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:20	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 20:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 20:20	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/06/17 20:20	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 20:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 20:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 20:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 20:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 20:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 20:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 20:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 20:20	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 20:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 20:20	79-34-5	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-1		Lab ID: 30229043001		Collected: 08/31/17 12:20		Received: 09/01/17 22:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8260B MSV</b>		Analytical Method: EPA 8260B							
Tetrachloroethene	ND	ug/L	1.0	1		09/06/17 20:20	127-18-4		
Toluene	ND	ug/L	1.0	1		09/06/17 20:20	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:20	120-82-1		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 20:20	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 20:20	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		09/06/17 20:20	79-01-6		
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 20:20	75-01-4		
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 20:20	1330-20-7		
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 20:20	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		09/06/17 20:20	95-47-6		
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	105	%	79-129	1		09/06/17 20:20	460-00-4		
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		09/06/17 20:20	17060-07-0		
Toluene-d8 (S)	97	%	80-120	1		09/06/17 20:20	2037-26-5		
Dibromofluoromethane (S)	100	%	80-120	1		09/06/17 20:20	1868-53-7		

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-3	Lab ID: 30229043002	Collected: 08/31/17 14:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>								
Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Aluminum	ND	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:52	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:52	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7440-38-2	
Barium	13.6	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:52	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/06/17 10:13	09/07/17 10:52	7440-41-7	
Boron	158	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:52	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/06/17 10:13	09/07/17 10:52	7440-43-9	
Calcium	105000	ug/L	1000	1	09/06/17 10:13	09/07/17 10:52	7440-70-2	
Chromium	11.5	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7440-47-3	
Cobalt	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7440-48-4	
Copper	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7440-50-8	
Iron	ND	ug/L	70.0	1	09/06/17 10:13	09/07/17 10:52	7439-89-6	
Lead	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7439-92-1	
Magnesium	40200	ug/L	200	1	09/06/17 10:13	09/07/17 10:52	7439-95-4	
Manganese	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/06/17 10:13	09/07/17 10:52	7439-98-7	
Nickel	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:52	7440-02-0	
Potassium	4550	ug/L	500	1	09/06/17 10:13	09/07/17 10:52	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/06/17 10:13	09/07/17 10:52	7782-49-2	
Silver	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:52	7440-22-4	
Sodium	57400	ug/L	1000	1	09/06/17 10:13	09/07/17 10:52	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:52	7440-28-0	
Vanadium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:52	7440-62-2	
Zinc	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:52	7440-66-6	
<b>7470 Mercury</b>								
Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	ug/L	0.20	1	09/07/17 08:43	09/07/17 22:16	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	83-32-9	1c
Acenaphthylene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	208-96-8	1c
Anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	120-12-7	1c
Azobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	56-55-3	1c
Benzo(a)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	50-32-8	1c
Benzo(b)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	191-24-2	1c
Benzo(k)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	207-08-9	1c
Benzoic acid	ND	ug/L	25.4	1	09/06/17 08:25	09/14/17 23:38	65-85-0	1c
Benzyl alcohol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	85-68-7	1c
Carbazole	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	86-74-8	1c
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	59-50-7	1c,L1
4-Chloroaniline	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	111-91-1	1c,L1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-3	Lab ID: 30229043002	Collected: 08/31/17 14:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	91-58-7	1c
2-Chlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	7005-72-3	1c
Chrysene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	53-70-3	1c
Dibenzofuran	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	91-94-1	1c
2,4-Dichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	120-83-2	1c,L1
Diethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	105-67-9	1c
Dimethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	117-81-7	1c
Fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	206-44-0	1c
Fluorene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	87-68-3	1c
Hexachlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	77-47-4	1c
Hexachloroethane	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	193-39-5	1c
Isophorone	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	78-59-1	1c,L1
1-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	91-57-6	1c,L1
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.0	1	09/06/17 08:25	09/14/17 23:38		1c
Naphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	91-20-3	1c,L1
2-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	99-09-2	1c
4-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	100-01-6	1c
Nitrobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	98-95-3	1c
2-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	88-75-5	1c,L1
4-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	87-86-5	1c
Phenanthrene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	85-01-8	1c

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-3	Lab ID: 30229043002	Collected: 08/31/17 14:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	108-95-2	1c
Pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/14/17 23:38	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/14/17 23:38	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	72	%	13-114	1	09/06/17 08:25	09/14/17 23:38	4165-60-0	
2-Fluorobiphenyl (S)	76	%	19-103	1	09/06/17 08:25	09/14/17 23:38	321-60-8	
Terphenyl-d14 (S)	93	%	14-124	1	09/06/17 08:25	09/14/17 23:38	1718-51-0	
Phenol-d6 (S)	28	%	10-113	1	09/06/17 08:25	09/14/17 23:38	13127-88-3	
2-Fluorophenol (S)	41	%	10-115	1	09/06/17 08:25	09/14/17 23:38	367-12-4	
2,4,6-Tribromophenol (S)	87	%	36-114	1	09/06/17 08:25	09/14/17 23:38	118-79-6	
<b>8260B MSV</b>								
Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/06/17 20:45	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 20:45	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 20:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 20:45	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 20:45	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 20:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 20:45	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 20:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 20:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 20:45	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 20:45	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 20:45	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 20:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 20:45	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:45	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:45	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 20:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 20:45	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/06/17 20:45	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 20:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 20:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 20:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 20:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 20:45	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 20:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 20:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 20:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 20:45	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 20:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 20:45	79-34-5	

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### ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

<b>Sample: MW-3</b>		<b>Lab ID: 30229043002</b>		Collected: 08/31/17 14:45		Received: 09/01/17 22:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8260B MSV</b>		Analytical Method: EPA 8260B							
Tetrachloroethene	1.1	ug/L	1.0	1		09/06/17 20:45	127-18-4		
Toluene	ND	ug/L	1.0	1		09/06/17 20:45	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 20:45	120-82-1		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 20:45	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 20:45	79-00-5		
Trichloroethene	2.9	ug/L	1.0	1		09/06/17 20:45	79-01-6		
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 20:45	75-01-4		
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 20:45	1330-20-7		
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 20:45	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		09/06/17 20:45	95-47-6		
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	103	%	79-129	1		09/06/17 20:45	460-00-4		
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		09/06/17 20:45	17060-07-0		
Toluene-d8 (S)	96	%	80-120	1		09/06/17 20:45	2037-26-5		
Dibromofluoromethane (S)	100	%	80-120	1		09/06/17 20:45	1868-53-7		

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### ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-4	Lab ID: 30229043003	Collected: 08/31/17 11:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>								
Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Aluminum	ND	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:54	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:54	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7440-38-2	
Barium	42.0	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:54	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/06/17 10:13	09/07/17 10:54	7440-41-7	
Boron	856	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:54	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/06/17 10:13	09/07/17 10:54	7440-43-9	
Calcium	82200	ug/L	1000	1	09/06/17 10:13	09/07/17 10:54	7440-70-2	
Chromium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7440-47-3	
Cobalt	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7440-48-4	
Copper	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7440-50-8	
Iron	ND	ug/L	70.0	1	09/06/17 10:13	09/07/17 10:54	7439-89-6	
Lead	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7439-92-1	
Magnesium	24400	ug/L	200	1	09/06/17 10:13	09/07/17 10:54	7439-95-4	
Manganese	1200	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/06/17 10:13	09/07/17 10:54	7439-98-7	
Nickel	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:54	7440-02-0	
Potassium	5700	ug/L	500	1	09/06/17 10:13	09/07/17 10:54	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/06/17 10:13	09/07/17 10:54	7782-49-2	
Silver	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:54	7440-22-4	
Sodium	8710	ug/L	1000	1	09/06/17 10:13	09/07/17 10:54	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:54	7440-28-0	
Vanadium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:54	7440-62-2	
Zinc	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:54	7440-66-6	
<b>7470 Mercury</b>								
Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	ug/L	0.20	1	09/07/17 08:43	09/07/17 22:18	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	83-32-9	1c
Acenaphthylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	208-96-8	1c
Anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	120-12-7	1c
Azobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	56-55-3	1c
Benzo(a)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	50-32-8	1c
Benzo(b)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	191-24-2	1c
Benzo(k)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	207-08-9	1c
Benzoic acid	ND	ug/L	26.0	1	09/06/17 08:25	09/15/17 00:00	65-85-0	1c
Benzyl alcohol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	85-68-7	1c
Carbazole	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	86-74-8	1c
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	59-50-7	1c,L1
4-Chloroaniline	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	111-91-1	1c,L1

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### ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-4	Lab ID: 30229043003	Collected: 08/31/17 11:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	91-58-7	1c
2-Chlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	7005-72-3	1c
Chrysene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	53-70-3	1c
Dibenzofuran	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	91-94-1	1c
2,4-Dichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	120-83-2	1c,L1
Diethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	105-67-9	1c
Dimethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	117-81-7	1c
Fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	206-44-0	1c
Fluorene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	87-68-3	1c
Hexachlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	77-47-4	1c
Hexachloroethane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	193-39-5	1c
Isophorone	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	78-59-1	1c,L1
1-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	91-57-6	1c,L1
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.1	1	09/06/17 08:25	09/15/17 00:00		1c
Naphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	91-20-3	1c,L1
2-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	99-09-2	1c
4-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	100-01-6	1c
Nitrobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	98-95-3	1c
2-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	88-75-5	1c,L1
4-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	87-86-5	1c
Phenanthrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	85-01-8	1c

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-4	Lab ID: 30229043003	Collected: 08/31/17 11:45	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	108-95-2	1c
Pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:00	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:00	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	74	%	13-114	1	09/06/17 08:25	09/15/17 00:00	4165-60-0	
2-Fluorobiphenyl (S)	77	%	19-103	1	09/06/17 08:25	09/15/17 00:00	321-60-8	
Terphenyl-d14 (S)	93	%	14-124	1	09/06/17 08:25	09/15/17 00:00	1718-51-0	
Phenol-d6 (S)	27	%	10-113	1	09/06/17 08:25	09/15/17 00:00	13127-88-3	
2-Fluorophenol (S)	40	%	10-115	1	09/06/17 08:25	09/15/17 00:00	367-12-4	
2,4,6-Tribromophenol (S)	80	%	36-114	1	09/06/17 08:25	09/15/17 00:00	118-79-6	
<b>8260B MSV</b> Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/06/17 21:10	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 21:10	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 21:10	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 21:10	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 21:10	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 21:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 21:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 21:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 21:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 21:10	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 21:10	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 21:10	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 21:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 21:10	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:10	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 21:10	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/06/17 21:10	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 21:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 21:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 21:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 21:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 21:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 21:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 21:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 21:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 21:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 21:10	79-34-5	

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### ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-4		Lab ID: 30229043003		Collected: 08/31/17 11:45		Received: 09/01/17 22:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8260B MSV</b>		Analytical Method: EPA 8260B							
Tetrachloroethene	ND	ug/L	1.0	1		09/06/17 21:10	127-18-4		
Toluene	ND	ug/L	1.0	1		09/06/17 21:10	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:10	120-82-1		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 21:10	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 21:10	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		09/06/17 21:10	79-01-6		
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 21:10	75-01-4		
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 21:10	1330-20-7		
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 21:10	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		09/06/17 21:10	95-47-6		
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	102	%	79-129	1		09/06/17 21:10	460-00-4		
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		09/06/17 21:10	17060-07-0		
Toluene-d8 (S)	98	%	80-120	1		09/06/17 21:10	2037-26-5		
Dibromofluoromethane (S)	101	%	80-120	1		09/06/17 21:10	1868-53-7		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-5	Lab ID: 30229043004	Collected: 08/31/17 13:50	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>								
Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Aluminum	ND	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:56	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:56	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7440-38-2	
Barium	56.2	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:56	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/06/17 10:13	09/07/17 10:56	7440-41-7	
Boron	877	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:56	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/06/17 10:13	09/07/17 10:56	7440-43-9	
Calcium	15500	ug/L	1000	1	09/06/17 10:13	09/07/17 10:56	7440-70-2	
Chromium	10.9	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7440-47-3	
Cobalt	6.2	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7440-48-4	
Copper	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7440-50-8	
Iron	ND	ug/L	70.0	1	09/06/17 10:13	09/07/17 10:56	7439-89-6	
Lead	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7439-92-1	
Magnesium	9670	ug/L	200	1	09/06/17 10:13	09/07/17 10:56	7439-95-4	
Manganese	16400	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/06/17 10:13	09/07/17 10:56	7439-98-7	
Nickel	10.4	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:56	7440-02-0	
Potassium	10400	ug/L	500	1	09/06/17 10:13	09/07/17 10:56	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/06/17 10:13	09/07/17 10:56	7782-49-2	
Silver	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:56	7440-22-4	
Sodium	79900	ug/L	1000	1	09/06/17 10:13	09/07/17 10:56	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:56	7440-28-0	
Vanadium	21.7	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:56	7440-62-2	
Zinc	17.4	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:56	7440-66-6	
<b>7470 Mercury</b>								
Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	ug/L	0.20	1	09/07/17 08:43	09/07/17 22:19	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	83-32-9	1c
Acenaphthylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	208-96-8	1c
Anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	120-12-7	1c
Azobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	56-55-3	1c
Benzo(a)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	50-32-8	1c
Benzo(b)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	191-24-2	1c
Benzo(k)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	207-08-9	1c
Benzoic acid	ND	ug/L	25.3	1	09/06/17 08:25	09/15/17 00:23	65-85-0	1c
Benzyl alcohol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	85-68-7	1c
Carbazole	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	86-74-8	1c
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	59-50-7	1c,L1
4-Chloroaniline	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	111-91-1	1c,L1

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-5	Lab ID: 30229043004	Collected: 08/31/17 13:50	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	91-58-7	1c
2-Chlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	7005-72-3	1c
Chrysene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	53-70-3	1c
Dibenzofuran	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	91-94-1	1c
2,4-Dichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	120-83-2	1c,L1
Diethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	105-67-9	1c
Dimethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	117-81-7	1c
Fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	206-44-0	1c
Fluorene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	87-68-3	1c
Hexachlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	77-47-4	1c
Hexachloroethane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	193-39-5	1c
Isophorone	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	78-59-1	1c,L1
1-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	91-57-6	1c,L1
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.0	1	09/06/17 08:25	09/15/17 00:23		1c
Naphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	91-20-3	1c,L1
2-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	99-09-2	1c
4-Nitroaniline	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	100-01-6	1c
Nitrobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	98-95-3	1c
2-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	88-75-5	1c,L1
4-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	87-86-5	1c
Phenanthrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	85-01-8	1c

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-5	Lab ID: 30229043004	Collected: 08/31/17 13:50	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	108-95-2	1c
Pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.5	1	09/06/17 08:25	09/15/17 00:23	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:23	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	64	%	13-114	1	09/06/17 08:25	09/15/17 00:23	4165-60-0	
2-Fluorobiphenyl (S)	71	%	19-103	1	09/06/17 08:25	09/15/17 00:23	321-60-8	
Terphenyl-d14 (S)	89	%	14-124	1	09/06/17 08:25	09/15/17 00:23	1718-51-0	
Phenol-d6 (S)	26	%	10-113	1	09/06/17 08:25	09/15/17 00:23	13127-88-3	
2-Fluorophenol (S)	36	%	10-115	1	09/06/17 08:25	09/15/17 00:23	367-12-4	
2,4,6-Tribromophenol (S)	89	%	36-114	1	09/06/17 08:25	09/15/17 00:23	118-79-6	
<b>8260B MSV</b>								
Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/06/17 21:35	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 21:35	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 21:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 21:35	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 21:35	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 21:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 21:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 21:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 21:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 21:35	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 21:35	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 21:35	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 21:35	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 21:35	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:35	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 21:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 21:35	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/06/17 21:35	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 21:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 21:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 21:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 21:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 21:35	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 21:35	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 21:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 21:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 21:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 21:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 21:35	79-34-5	

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### ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-5		Lab ID: 30229043004		Collected: 08/31/17 13:50		Received: 09/01/17 22:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
<b>8260B MSV</b>		Analytical Method: EPA 8260B							
Tetrachloroethene	ND	ug/L	1.0	1		09/06/17 21:35	127-18-4		
Toluene	ND	ug/L	1.0	1		09/06/17 21:35	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 21:35	120-82-1		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 21:35	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 21:35	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		09/06/17 21:35	79-01-6		
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 21:35	75-01-4		
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 21:35	1330-20-7		
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 21:35	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		09/06/17 21:35	95-47-6		
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	102	%	79-129	1		09/06/17 21:35	460-00-4		
1,2-Dichloroethane-d4 (S)	105	%	80-120	1		09/06/17 21:35	17060-07-0		
Toluene-d8 (S)	96	%	80-120	1		09/06/17 21:35	2037-26-5		
Dibromofluoromethane (S)	99	%	80-120	1		09/06/17 21:35	1868-53-7		

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### ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-6	Lab ID: 30229043005	Collected: 08/31/17 13:40	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>								
Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Aluminum	ND	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:59	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:59	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7440-38-2	
Barium	39.3	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:59	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/06/17 10:13	09/07/17 10:59	7440-41-7	
Boron	5590	ug/L	50.0	1	09/06/17 10:13	09/07/17 10:59	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/06/17 10:13	09/07/17 10:59	7440-43-9	
Calcium	67800	ug/L	1000	1	09/06/17 10:13	09/07/17 10:59	7440-70-2	
Chromium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7440-47-3	
Cobalt	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7440-48-4	
Copper	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7440-50-8	
Iron	80.8	ug/L	70.0	1	09/06/17 10:13	09/07/17 10:59	7439-89-6	
Lead	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7439-92-1	
Magnesium	24400	ug/L	200	1	09/06/17 10:13	09/07/17 10:59	7439-95-4	
Manganese	23.3	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/06/17 10:13	09/07/17 10:59	7439-98-7	
Nickel	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:59	7440-02-0	
Potassium	2730	ug/L	500	1	09/06/17 10:13	09/07/17 10:59	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/06/17 10:13	09/07/17 10:59	7782-49-2	
Silver	ND	ug/L	6.0	1	09/06/17 10:13	09/07/17 10:59	7440-22-4	
Sodium	175000	ug/L	1000	1	09/06/17 10:13	09/07/17 10:59	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:59	7440-28-0	
Vanadium	ND	ug/L	5.0	1	09/06/17 10:13	09/07/17 10:59	7440-62-2	
Zinc	ND	ug/L	10.0	1	09/06/17 10:13	09/07/17 10:59	7440-66-6	
<b>7470 Mercury</b>								
Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	ug/L	0.20	1	09/07/17 08:43	09/07/17 22:21	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	83-32-9	1c
Acenaphthylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	208-96-8	1c
Anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	120-12-7	1c
Azobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	56-55-3	1c
Benzo(a)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	50-32-8	1c
Benzo(b)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	191-24-2	1c
Benzo(k)fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	207-08-9	1c
Benzoic acid	ND	ug/L	25.8	1	09/06/17 08:25	09/15/17 00:45	65-85-0	1c
Benzyl alcohol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	85-68-7	1c
Carbazole	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	86-74-8	1c
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	59-50-7	1c,L1
4-Chloroaniline	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	106-47-8	1c
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	111-91-1	1c,L1

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-6	Lab ID: 30229043005	Collected: 08/31/17 13:40	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	91-58-7	1c
2-Chlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	7005-72-3	1c
Chrysene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	53-70-3	1c
Dibenzofuran	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	91-94-1	1c
2,4-Dichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	120-83-2	1c,L1
Diethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	105-67-9	1c
Dimethylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	117-81-7	1c
Fluoranthene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	206-44-0	1c
Fluorene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	87-68-3	1c
Hexachlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	77-47-4	1c
Hexachloroethane	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	193-39-5	1c
Isophorone	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	78-59-1	1c,L1
1-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	91-57-6	1c,L1
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.1	1	09/06/17 08:25	09/15/17 00:45		1c
Naphthalene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	91-20-3	1c,L1
2-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	99-09-2	1c
4-Nitroaniline	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	100-01-6	1c
Nitrobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	98-95-3	1c
2-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	88-75-5	1c,L1
4-Nitrophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	87-86-5	1c
Phenanthrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	85-01-8	1c

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield  
Pace Project No.: 30229043

Sample: MW-6	Lab ID: 30229043005	Collected: 08/31/17 13:40	Received: 09/01/17 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	108-95-2	1c
Pyrene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.6	1	09/06/17 08:25	09/15/17 00:45	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	09/06/17 08:25	09/15/17 00:45	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	74	%	13-114	1	09/06/17 08:25	09/15/17 00:45	4165-60-0	
2-Fluorobiphenyl (S)	78	%	19-103	1	09/06/17 08:25	09/15/17 00:45	321-60-8	
Terphenyl-d14 (S)	95	%	14-124	1	09/06/17 08:25	09/15/17 00:45	1718-51-0	
Phenol-d6 (S)	28	%	10-113	1	09/06/17 08:25	09/15/17 00:45	13127-88-3	
2-Fluorophenol (S)	42	%	10-115	1	09/06/17 08:25	09/15/17 00:45	367-12-4	
2,4,6-Tribromophenol (S)	89	%	36-114	1	09/06/17 08:25	09/15/17 00:45	118-79-6	
<b>8260B MSV</b>								
Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/06/17 22:01	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 22:01	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 22:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 22:01	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 22:01	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 22:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 22:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 22:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 22:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 22:01	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 22:01	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 22:01	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 22:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 22:01	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:01	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 22:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 22:01	107-06-2	
1,2-Dichloroethene (Total)	<b>16.3</b>	ug/L	2.0	1		09/06/17 22:01	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 22:01	75-35-4	
cis-1,2-Dichloroethene	<b>16.3</b>	ug/L	1.0	1		09/06/17 22:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 22:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 22:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 22:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 22:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 22:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 22:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 22:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 22:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 22:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 22:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 22:01	79-34-5	

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### ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: MW-6		Lab ID: 30229043005	Collected: 08/31/17 13:40	Received: 09/01/17 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
Tetrachloroethene	9.8	ug/L	1.0	1		09/06/17 22:01	127-18-4	
Toluene	ND	ug/L	1.0	1		09/06/17 22:01	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 22:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 22:01	79-00-5	
Trichloroethene	85.0	ug/L	1.0	1		09/06/17 22:01	79-01-6	
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 22:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 22:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 22:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/06/17 22:01	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	103	%	79-129	1		09/06/17 22:01	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		09/06/17 22:01	17060-07-0	
Toluene-d8 (S)	96	%	80-120	1		09/06/17 22:01	2037-26-5	
Dibromofluoromethane (S)	102	%	80-120	1		09/06/17 22:01	1868-53-7	

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: Trip Blank		Lab ID: 30229043006	Collected: 08/31/17 00:01	Received: 09/01/17 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
Acetone	15.9	ug/L	10.0	1		09/06/17 22:26	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 22:26	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 22:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 22:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 22:26	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/06/17 22:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/06/17 22:26	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/06/17 22:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 22:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 22:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 22:26	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 22:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 22:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 22:26	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:26	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 22:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 22:26	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/06/17 22:26	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 22:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 22:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 22:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 22:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 22:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 22:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 22:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/06/17 22:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/06/17 22:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/06/17 22:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 22:26	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/06/17 22:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 22:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/06/17 22:26	127-18-4	
Toluene	ND	ug/L	1.0	1		09/06/17 22:26	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 22:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 22:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 22:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/06/17 22:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 22:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/06/17 22:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 22:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/06/17 22:26	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	100	%	79-129	1		09/06/17 22:26	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		09/06/17 22:26	17060-07-0	
Toluene-d8 (S)	96	%	80-120	1		09/06/17 22:26	2037-26-5	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield

Pace Project No.: 30229043

Sample: Trip Blank		Lab ID: 30229043006	Collected: 08/31/17 00:01	Received: 09/01/17 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
<b>Surrogates</b>								
Dibromofluoromethane (S)	101	%	80-120	1		09/06/17 22:26	1868-53-7	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

QC Batch: 270773

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

METHOD BLANK: 1332321

Matrix: Water

Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/07/17 22:08	

LABORATORY CONTROL SAMPLE: 1332322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	110	80-120	

MATRIX SPIKE SAMPLE: 1332324

Parameter	Units	30229043001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	2.5	2.6	104	75-125	

SAMPLE DUPLICATE: 1332323

Parameter	Units	30229043001 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	ND		

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

QC Batch: 270626

Analysis Method: EPA 6010B

QC Batch Method: EPA 3005A

Analysis Description: 6010 MET

Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

METHOD BLANK: 1331666

Matrix: Water

Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	50.0	09/07/17 10:24	
Antimony	ug/L	ND	6.0	09/07/17 10:24	
Arsenic	ug/L	ND	5.0	09/07/17 10:24	
Barium	ug/L	ND	10.0	09/07/17 10:24	
Beryllium	ug/L	ND	1.0	09/07/17 10:24	
Boron	ug/L	ND	50.0	09/07/17 10:24	
Cadmium	ug/L	ND	3.0	09/07/17 10:24	
Calcium	ug/L	ND	1000	09/07/17 10:24	
Chromium	ug/L	ND	5.0	09/07/17 10:24	
Cobalt	ug/L	ND	5.0	09/07/17 10:24	
Copper	ug/L	ND	5.0	09/07/17 10:24	
Iron	ug/L	ND	70.0	09/07/17 10:24	
Lead	ug/L	ND	5.0	09/07/17 10:24	
Magnesium	ug/L	ND	200	09/07/17 10:24	
Manganese	ug/L	ND	5.0	09/07/17 10:24	
Molybdenum	ug/L	ND	20.0	09/07/17 10:24	
Nickel	ug/L	ND	10.0	09/07/17 10:24	
Potassium	ug/L	ND	500	09/07/17 10:24	
Selenium	ug/L	ND	8.0	09/07/17 10:24	
Silver	ug/L	ND	6.0	09/07/17 10:24	
Sodium	ug/L	ND	1000	09/07/17 10:24	
Thallium	ug/L	ND	10.0	09/07/17 10:24	
Vanadium	ug/L	ND	5.0	09/07/17 10:24	
Zinc	ug/L	ND	10.0	09/07/17 10:24	

LABORATORY CONTROL SAMPLE: 1331667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	5110	102	80-120	
Antimony	ug/L	500	521	104	80-120	
Arsenic	ug/L	500	498	100	80-120	
Barium	ug/L	500	507	101	80-120	
Beryllium	ug/L	500	512	102	80-120	
Boron	ug/L	500	527	105	80-120	
Cadmium	ug/L	500	521	104	80-120	
Calcium	ug/L	5000	5140	103	80-120	
Chromium	ug/L	500	523	105	80-120	
Cobalt	ug/L	500	494	99	80-120	
Copper	ug/L	500	519	104	80-120	
Iron	ug/L	5000	5190	104	80-120	

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

LABORATORY CONTROL SAMPLE: 1331667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	490	98	80-120	
Magnesium	ug/L	5000	5050	101	80-120	
Manganese	ug/L	500	506	101	80-120	
Molybdenum	ug/L	500	510	102	80-120	
Nickel	ug/L	500	520	104	80-120	
Potassium	ug/L	5000	4950	99	80-120	
Selenium	ug/L	500	516	103	80-120	
Silver	ug/L	250	261	104	80-120	
Sodium	ug/L	5000	5150	103	80-120	
Thallium	ug/L	500	491	98	80-120	
Vanadium	ug/L	500	514	103	80-120	
Zinc	ug/L	500	517	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1331669 1331670

Parameter	Units	30228554001		MS	MSD	MS		MSD		% Rec Limits	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Aluminum	ug/L	858	5000	5000	6280	6480	108	113	75-125	3		
Antimony	ug/L	ND	500	500	537	549	107	110	75-125	2		
Arsenic	ug/L	ND	500	500	521	537	104	107	75-125	3		
Barium	ug/L	285	500	500	791	813	101	106	75-125	3		
Beryllium	ug/L	ND	500	500	508	522	102	104	75-125	3		
Boron	ug/L	190	500	500	709	723	104	107	75-125	2		
Cadmium	ug/L	ND	500	500	538	550	108	110	75-125	2		
Calcium	ug/L	462000	5000	5000	464000	474000	42	256	75-125	2	MH,ML	
Chromium	ug/L	10.2	500	500	517	528	101	104	75-125	2		
Cobalt	ug/L	ND	500	500	519	533	103	106	75-125	3		
Copper	ug/L	8.7	500	500	536	550	106	108	75-125	2		
Iron	ug/L	854	5000	5000	5920	6050	101	104	75-125	2		
Lead	ug/L	ND	500	500	500	510	100	101	75-125	2		
Magnesium	ug/L	120000	5000	5000	124000	127000	76	136	75-125	2	MH	
Manganese	ug/L	730	500	500	1210	1240	96	103	75-125	3		
Molybdenum	ug/L	ND	500	500	573	590	114	117	75-125	3		
Nickel	ug/L	ND	500	500	490	500	97	99	75-125	2		
Potassium	ug/L	4600	5000	5000	9900	10100	106	110	75-125	2		
Selenium	ug/L	ND	500	500	528	544	105	108	75-125	3		
Silver	ug/L	ND	250	250	272	277	108	111	75-125	2		
Sodium	ug/L	242000	5000	5000	247000	252000	86	196	75-125	2	MH	
Thallium	ug/L	ND	500	500	464	479	93	96	75-125	3		
Vanadium	ug/L	ND	500	500	519	529	103	105	75-125	2		
Zinc	ug/L	36.9	500	500	528	538	98	100	75-125	2		

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

MATRIX SPIKE SAMPLE: 1331672		30228862003	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Aluminum	ug/L	43.6J	5000	5200	103	75-125	
Antimony	ug/L	6.0 U	500	543	109	75-125	
Arsenic	ug/L	5.0 U	500	520	104	75-125	
Barium	ug/L	44.6	500	544	100	75-125	
Beryllium	ug/L	1.0 U	500	494	99	75-125	
Boron	ug/L	19500	500	19900	92	75-125	
Cadmium	ug/L	3.0 U	500	521	104	75-125	
Calcium	ug/L	375000	5000	382000	132	75-125	MH
Chromium	ug/L	1.3J	500	502	100	75-125	
Cobalt	ug/L	5.0 U	500	494	99	75-125	
Copper	ug/L	5.0 U	500	512	102	75-125	
Iron	ug/L	70.0 U	5000	5110	102	75-125	
Lead	ug/L	5.0 U	500	481	96	75-125	
Magnesium	ug/L	102000	5000	107000	110	75-125	
Manganese	ug/L	7.0	500	487	96	75-125	
Molybdenum	ug/L	440	500	998	111	75-125	
Nickel	ug/L	10.0 U	500	483	97	75-125	
Potassium	ug/L	26600	5000	32000	108	75-125	
Selenium	ug/L	35.9	500	567	106	75-125	
Silver	ug/L	6.0 U	250	266	106	75-125	
Sodium	ug/L	34900	5000	40500	111	75-125	
Thallium	ug/L	10.0 U	500	458	92	75-125	
Vanadium	ug/L	6.7	500	513	101	75-125	
Zinc	ug/L	10.0 U	500	489	98	75-125	

SAMPLE DUPLICATE: 1331668

Parameter	Units	30228554001	Dup	RPD	Qualifiers
		Result	Result		
Aluminum	ug/L	858	848	1	
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Barium	ug/L	285	277	3	
Beryllium	ug/L	ND	ND		
Boron	ug/L	190	188	1	
Cadmium	ug/L	ND	.43J		
Calcium	ug/L	462000	449000	3	
Chromium	ug/L	10.2	9.6	7	
Cobalt	ug/L	ND	2.9J		
Copper	ug/L	8.7	8.6	1	
Iron	ug/L	854	820	4	
Lead	ug/L	ND	ND		
Magnesium	ug/L	120000	116000	3	
Manganese	ug/L	730	700	4	
Molybdenum	ug/L	ND	3.6J		
Nickel	ug/L	ND	6.8J		

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

SAMPLE DUPLICATE: 1331668

Parameter	Units	30228554001 Result	Dup Result	RPD	Qualifiers
Potassium	ug/L	4600	4410	4	
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	ND		
Sodium	ug/L	242000	234000	4	
Thallium	ug/L	ND	ND		
Vanadium	ug/L	ND	3.4J		
Zinc	ug/L	36.9	36.2	2	

SAMPLE DUPLICATE: 1331671

Parameter	Units	30228862003 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	43.6J	40J		
Antimony	ug/L	6.0 U	3.2J		
Arsenic	ug/L	5.0 U	ND		
Barium	ug/L	44.6	49.0	10	
Beryllium	ug/L	1.0 U	ND		
Boron	ug/L	19500	19900	2	
Cadmium	ug/L	3.0 U	ND		
Calcium	ug/L	375000	400000	6	
Chromium	ug/L	1.3J	1.1J		
Cobalt	ug/L	5.0 U	ND		
Copper	ug/L	5.0 U	ND		
Iron	ug/L	70.0 U	ND		
Lead	ug/L	5.0 U	ND		
Magnesium	ug/L	102000	108000	6	
Manganese	ug/L	7.0	6.0	14	
Molybdenum	ug/L	440	452	3	
Nickel	ug/L	10.0 U	ND		
Potassium	ug/L	26600	28400	7	
Selenium	ug/L	35.9	37.1	3	
Silver	ug/L	6.0 U	ND		
Sodium	ug/L	34900	37200	6	
Thallium	ug/L	10.0 U	ND		
Vanadium	ug/L	6.7	6.8	1	
Zinc	ug/L	10.0 U	ND		

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

QC Batch: 270639 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV  
Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005, 30229043006

METHOD BLANK: 1331712 Matrix: Water  
Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005, 30229043006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	09/06/17 13:36	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/06/17 13:36	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/06/17 13:36	
1,1-Dichloroethane	ug/L	ND	1.0	09/06/17 13:36	
1,1-Dichloroethene	ug/L	ND	1.0	09/06/17 13:36	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/06/17 13:36	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/06/17 13:36	
1,2-Dichloroethane	ug/L	ND	1.0	09/06/17 13:36	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	09/06/17 13:36	
1,2-Dichloropropane	ug/L	ND	1.0	09/06/17 13:36	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/06/17 13:36	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/06/17 13:36	
2-Butanone (MEK)	ug/L	ND	10.0	09/06/17 13:36	
2-Hexanone	ug/L	ND	10.0	09/06/17 13:36	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	09/06/17 13:36	
Acetone	ug/L	ND	10.0	09/06/17 13:36	
Benzene	ug/L	ND	1.0	09/06/17 13:36	
Bromochloromethane	ug/L	ND	1.0	09/06/17 13:36	
Bromodichloromethane	ug/L	ND	1.0	09/06/17 13:36	
Bromoform	ug/L	ND	1.0	09/06/17 13:36	
Bromomethane	ug/L	ND	1.0	09/06/17 13:36	
Carbon disulfide	ug/L	ND	1.0	09/06/17 13:36	
Carbon tetrachloride	ug/L	ND	1.0	09/06/17 13:36	
Chlorobenzene	ug/L	ND	1.0	09/06/17 13:36	
Chloroethane	ug/L	ND	1.0	09/06/17 13:36	
Chloroform	ug/L	ND	1.0	09/06/17 13:36	
Chloromethane	ug/L	ND	1.0	09/06/17 13:36	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/06/17 13:36	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/06/17 13:36	
Dibromochloromethane	ug/L	ND	1.0	09/06/17 13:36	
Ethylbenzene	ug/L	ND	1.0	09/06/17 13:36	
m&p-Xylene	ug/L	ND	2.0	09/06/17 13:36	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/06/17 13:36	
Methylene Chloride	ug/L	ND	1.0	09/06/17 13:36	
o-Xylene	ug/L	ND	1.0	09/06/17 13:36	
Styrene	ug/L	ND	1.0	09/06/17 13:36	
Tetrachloroethene	ug/L	ND	1.0	09/06/17 13:36	
Toluene	ug/L	ND	1.0	09/06/17 13:36	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/06/17 13:36	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/06/17 13:36	
Trichloroethene	ug/L	ND	1.0	09/06/17 13:36	

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

METHOD BLANK: 1331712

Matrix: Water

Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005, 30229043006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	1.0	09/06/17 13:36	
Xylene (Total)	ug/L	ND	3.0	09/06/17 13:36	
1,2-Dichloroethane-d4 (S)	%	103	80-120	09/06/17 13:36	
4-Bromofluorobenzene (S)	%	102	79-129	09/06/17 13:36	
Dibromofluoromethane (S)	%	100	80-120	09/06/17 13:36	
Toluene-d8 (S)	%	97	80-120	09/06/17 13:36	

LABORATORY CONTROL SAMPLE: 1331713

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.3	102	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	94	65-127	
1,1,2-Trichloroethane	ug/L	20	19.3	96	70-130	
1,1-Dichloroethane	ug/L	20	21.0	105	70-130	
1,1-Dichloroethene	ug/L	20	21.4	107	70-130	
1,2,4-Trichlorobenzene	ug/L	20	20.2	101	70-130	
1,2-Dichlorobenzene	ug/L	20	19.9	100	70-130	
1,2-Dichloroethane	ug/L	20	21.2	106	70-130	
1,2-Dichloroethene (Total)	ug/L	40	41.9	105	70-130	
1,2-Dichloropropane	ug/L	20	20.5	103	70-130	
1,3-Dichlorobenzene	ug/L	20	20.6	103	70-130	
1,4-Dichlorobenzene	ug/L	20	20.0	100	70-130	
2-Butanone (MEK)	ug/L	20	21.8	109	72-170	
2-Hexanone	ug/L	20	19.6	98	65-151	
4-Methyl-2-pentanone (MIBK)	ug/L	20	20.5	103	66-150	
Acetone	ug/L	20	21.7	108	30-179	
Benzene	ug/L	20	20.6	103	70-130	
Bromochloromethane	ug/L	20	23.0	115	70-130	
Bromodichloromethane	ug/L	20	19.0	95	70-130	
Bromoform	ug/L	20	19.3	96	70-130	
Bromomethane	ug/L	20	24.3	122	47-174	
Carbon disulfide	ug/L	20	19.3	97	43-133	
Carbon tetrachloride	ug/L	20	20.4	102	56-143	
Chlorobenzene	ug/L	20	20.4	102	70-130	
Chloroethane	ug/L	20	17.7	89	67-139	
Chloroform	ug/L	20	20.1	100	70-130	
Chloromethane	ug/L	20	19.6	98	57-138	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	70-130	
cis-1,3-Dichloropropene	ug/L	20	19.8	99	70-130	
Dibromochloromethane	ug/L	20	19.6	98	70-130	
Ethylbenzene	ug/L	20	20.5	102	70-130	
m&p-Xylene	ug/L	40	41.0	102	70-130	
Methyl-tert-butyl ether	ug/L	20	20.8	104	70-130	
Methylene Chloride	ug/L	20	19.3	96	55-144	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

LABORATORY CONTROL SAMPLE: 1331713

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	20	20.5	103	70-130	
Styrene	ug/L	20	20.0	100	70-130	
Tetrachloroethene	ug/L	20	21.0	105	70-130	
Toluene	ug/L	20	19.7	99	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.9	104	70-130	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	70-130	
Trichloroethene	ug/L	20	21.5	108	70-130	
Vinyl chloride	ug/L	20	20.5	102	70-130	
Xylene (Total)	ug/L	60	61.5	103	70-130	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			103	79-129	
Dibromofluoromethane (S)	%			105	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1332138 1332139

Parameter	Units	30229034001		MS	MSD	MS		MSD		% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
1,1,1-Trichloroethane	ug/L	ND	20	20	20	19.2	18.9	96	94	79-129	1	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20	16.8	16.4	84	82	57-118	2	
1,1,2-Trichloroethane	ug/L	ND	20	20	20	17.8	17.3	89	86	68-117	3	
1,1-Dichloroethane	ug/L	ND	20	20	20	19.3	19.1	96	95	74-119	1	
1,1-Dichloroethene	ug/L	ND	20	20	20	20.4	20.0	102	100	63-126	2	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20	17.3	16.7	86	84	60-117	3	
1,2-Dichlorobenzene	ug/L	ND	20	20	20	18.2	17.8	91	89	72-119	2	
1,2-Dichloroethane	ug/L	ND	20	20	20	18.6	18.7	93	93	69-116	0	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	40	38.0	38.3	95	96	62-128	1	
1,2-Dichloropropane	ug/L	ND	20	20	20	18.1	17.9	91	90	63-118	1	
1,3-Dichlorobenzene	ug/L	ND	20	20	20	18.4	18.3	92	91	81-119	1	
1,4-Dichlorobenzene	ug/L	ND	20	20	20	18.3	18.0	91	90	72-118	2	
2-Butanone (MEK)	ug/L	ND	20	20	20	28.2	29.0	122	126	72-168	3	
2-Hexanone	ug/L	ND	20	20	20	19.9	19.0	99	95	66-143	4	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	20	20	19.9	19.7	100	98	67-145	1	
Acetone	ug/L	68.2	20	20	20	77.6	115	47	235	15-175	39	MH,R1
Benzene	ug/L	ND	20	20	20	18.9	19.2	94	96	67-121	2	
Bromochloromethane	ug/L	ND	20	20	20	21.6	20.2	108	101	62-128	7	
Bromodichloromethane	ug/L	ND	20	20	20	18.2	17.7	91	88	66-127	3	
Bromoform	ug/L	ND	20	20	20	16.5	16.0	82	80	71-127	3	
Bromomethane	ug/L	ND	20	20	20	16.9	20.5	85	102	10-156	19	
Carbon disulfide	ug/L	ND	20	20	20	17.2	16.2	86	81	45-131	6	
Carbon tetrachloride	ug/L	ND	20	20	20	19.1	19.0	96	95	69-134	1	
Chlorobenzene	ug/L	ND	20	20	20	19.0	19.0	95	95	69-119	0	
Chloroethane	ug/L	ND	20	20	20	15.6	19.0	78	95	60-156	20	
Chloroform	ug/L	ND	20	20	20	18.5	18.0	92	90	69-115	3	
Chloromethane	ug/L	ND	20	20	20	17.5	20.7	88	103	52-145	17	

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

Parameter	30229034001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.1	19.1	95	95	65-120	0				
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.7	17.7	89	88	57-125	0				
Dibromochloromethane	ug/L	ND	20	20	17.6	17.6	88	88	64-131	0				
Ethylbenzene	ug/L	ND	20	20	19.1	18.9	95	94	70-127	1				
m&p-Xylene	ug/L	ND	40	40	38.2	38.0	96	95	71-128	1				
Methyl-tert-butyl ether	ug/L	ND	20	20	21.5	20.5	108	102	79-135	5				
Methylene Chloride	ug/L	ND	20	20	18.0	17.3	90	86	54-133	4				
o-Xylene	ug/L	ND	20	20	18.6	18.2	93	91	68-125	2				
Styrene	ug/L	ND	20	20	18.0	18.2	90	91	65-121	1				
Tetrachloroethene	ug/L	ND	20	20	20.8	20.8	104	104	77-125	0				
Toluene	ug/L	ND	20	20	19.0	18.8	95	94	77-125	1				
trans-1,2-Dichloroethene	ug/L	ND	20	20	18.9	19.2	95	96	70-119	2				
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.4	16.6	82	83	52-125	1				
Trichloroethene	ug/L	ND	20	20	20.1	20.0	101	100	74-128	0				
Vinyl chloride	ug/L	ND	20	20	18.0	22.1	90	111	60-131	20				
Xylene (Total)	ug/L	ND	60	60	56.8	56.2	95	94	69-128	1				
1,2-Dichloroethane-d4 (S)	%						100	97	80-120					
4-Bromofluorobenzene (S)	%						102	100	79-129					
Dibromofluoromethane (S)	%						105	102	80-120					
Toluene-d8 (S)	%						98	98	80-120					

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

QC Batch: 270603 Analysis Method: EPA 8270C  
QC Batch Method: EPA 3510C Analysis Description: 8270 Water MSSV  
Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

METHOD BLANK: 1331577 Matrix: Water  
Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/14/17 21:47	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/14/17 21:47	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/14/17 21:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/14/17 21:47	
1-Methylnaphthalene	ug/L	ND	1.0	09/14/17 21:47	
2,4,5-Trichlorophenol	ug/L	ND	2.5	09/14/17 21:47	
2,4,6-Trichlorophenol	ug/L	ND	1.0	09/14/17 21:47	
2,4-Dichlorophenol	ug/L	ND	1.0	09/14/17 21:47	
2,4-Dimethylphenol	ug/L	ND	1.0	09/14/17 21:47	
2,4-Dinitrophenol	ug/L	ND	2.5	09/14/17 21:47	
2,4-Dinitrotoluene	ug/L	ND	1.0	09/14/17 21:47	
2,6-Dinitrotoluene	ug/L	ND	1.0	09/14/17 21:47	
2-Chloronaphthalene	ug/L	ND	1.0	09/14/17 21:47	
2-Chlorophenol	ug/L	ND	1.0	09/14/17 21:47	
2-Methylnaphthalene	ug/L	ND	1.0	09/14/17 21:47	
2-Methylphenol(o-Cresol)	ug/L	ND	1.0	09/14/17 21:47	
2-Nitroaniline	ug/L	ND	2.5	09/14/17 21:47	
2-Nitrophenol	ug/L	ND	1.0	09/14/17 21:47	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2.0	09/14/17 21:47	
3,3'-Dichlorobenzidine	ug/L	ND	1.0	09/14/17 21:47	
3-Nitroaniline	ug/L	ND	2.5	09/14/17 21:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	2.5	09/14/17 21:47	
4-Bromophenylphenyl ether	ug/L	ND	1.0	09/14/17 21:47	
4-Chloro-3-methylphenol	ug/L	ND	1.0	09/14/17 21:47	
4-Chloroaniline	ug/L	ND	1.0	09/14/17 21:47	
4-Chlorophenylphenyl ether	ug/L	ND	1.0	09/14/17 21:47	
4-Nitroaniline	ug/L	ND	2.5	09/14/17 21:47	
4-Nitrophenol	ug/L	ND	1.0	09/14/17 21:47	
Acenaphthene	ug/L	ND	1.0	09/14/17 21:47	
Acenaphthylene	ug/L	ND	1.0	09/14/17 21:47	
Anthracene	ug/L	ND	1.0	09/14/17 21:47	
Azobenzene	ug/L	ND	1.0	09/14/17 21:47	N2
Benzo(a)anthracene	ug/L	ND	1.0	09/14/17 21:47	
Benzo(a)pyrene	ug/L	ND	1.0	09/14/17 21:47	
Benzo(b)fluoranthene	ug/L	ND	1.0	09/14/17 21:47	
Benzo(g,h,i)perylene	ug/L	ND	1.0	09/14/17 21:47	
Benzo(k)fluoranthene	ug/L	ND	1.0	09/14/17 21:47	
Benzoic acid	ug/L	ND	25.0	09/14/17 21:47	
Benzyl alcohol	ug/L	ND	1.0	09/14/17 21:47	
bis(2-Chloroethoxy)methane	ug/L	ND	1.0	09/14/17 21:47	
bis(2-Chloroethyl) ether	ug/L	ND	1.0	09/14/17 21:47	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield  
Pace Project No.: 30229043

METHOD BLANK: 1331577 Matrix: Water  
Associated Lab Samples: 30229043001, 30229043002, 30229043003, 30229043004, 30229043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Chloroisopropyl) ether	ug/L	ND	1.0	09/14/17 21:47	
bis(2-Ethylhexyl)phthalate	ug/L	ND	1.0	09/14/17 21:47	
Butylbenzylphthalate	ug/L	ND	1.0	09/14/17 21:47	
Carbazole	ug/L	ND	1.0	09/14/17 21:47	
Chrysene	ug/L	ND	1.0	09/14/17 21:47	
Di-n-butylphthalate	ug/L	ND	1.0	09/14/17 21:47	
Di-n-octylphthalate	ug/L	ND	1.0	09/14/17 21:47	
Dibenz(a,h)anthracene	ug/L	ND	1.0	09/14/17 21:47	
Dibenzofuran	ug/L	ND	1.0	09/14/17 21:47	
Diethylphthalate	ug/L	ND	1.0	09/14/17 21:47	
Dimethylphthalate	ug/L	ND	1.0	09/14/17 21:47	
Fluoranthene	ug/L	ND	1.0	09/14/17 21:47	
Fluorene	ug/L	ND	1.0	09/14/17 21:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/14/17 21:47	
Hexachlorobenzene	ug/L	ND	1.0	09/14/17 21:47	
Hexachlorocyclopentadiene	ug/L	ND	1.0	09/14/17 21:47	
Hexachloroethane	ug/L	ND	1.0	09/14/17 21:47	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1.0	09/14/17 21:47	
Isophorone	ug/L	ND	1.0	09/14/17 21:47	
N-Nitroso-di-n-propylamine	ug/L	ND	1.0	09/14/17 21:47	
N-Nitrosodimethylamine	ug/L	ND	1.0	09/14/17 21:47	
N-Nitrosodiphenylamine	ug/L	ND	1.0	09/14/17 21:47	
Naphthalene	ug/L	ND	1.0	09/14/17 21:47	
Nitrobenzene	ug/L	ND	1.0	09/14/17 21:47	
Pentachlorophenol	ug/L	ND	2.5	09/14/17 21:47	
Phenanthrene	ug/L	ND	1.0	09/14/17 21:47	
Phenol	ug/L	ND	1.0	09/14/17 21:47	
Pyrene	ug/L	ND	1.0	09/14/17 21:47	
2,4,6-Tribromophenol (S)	%	76	36-114	09/14/17 21:47	
2-Fluorobiphenyl (S)	%	76	19-103	09/14/17 21:47	
2-Fluorophenol (S)	%	41	10-115	09/14/17 21:47	
Nitrobenzene-d5 (S)	%	71	13-114	09/14/17 21:47	
Phenol-d6 (S)	%	26	10-113	09/14/17 21:47	
Terphenyl-d14 (S)	%	88	14-124	09/14/17 21:47	

LABORATORY CONTROL SAMPLE: 1331578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	10	8.1	81	29-81	
1,2-Dichlorobenzene	ug/L	10	7.5	75	29-97	
1,3-Dichlorobenzene	ug/L	10	7.0	70	26-95	
1,4-Dichlorobenzene	ug/L	10	7.3	73	30-100	
1-Methylnaphthalene	ug/L	10	8.3	83	33-84	
2,4,5-Trichlorophenol	ug/L	10	9.4	94	48-109	

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

LABORATORY CONTROL SAMPLE: 1331578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,6-Trichlorophenol	ug/L	10	9.4	94	45-109	
2,4-Dichlorophenol	ug/L	10	9.2	92	36-86	L1
2,4-Dimethylphenol	ug/L	10	6.9	69	30-79	
2,4-Dinitrophenol	ug/L	10	6.4	64	10-131	
2,4-Dinitrotoluene	ug/L	10	10.9	109	40-111	
2,6-Dinitrotoluene	ug/L	10	10.3	103	43-117	
2-Chloronaphthalene	ug/L	10	8.4	84	37-99	
2-Chlorophenol	ug/L	10	8.0	80	37-94	
2-Methylnaphthalene	ug/L	10	8.4	84	32-77	L1
2-Methylphenol(o-Cresol)	ug/L	10	6.7	67	33-105	
2-Nitroaniline	ug/L	10	9.8	98	47-116	
2-Nitrophenol	ug/L	10	9.1	91	32-86	L1
3&4-Methylphenol(m&p Cresol)	ug/L	10	6.3	63	25-110	
3,3'-Dichlorobenzidine	ug/L	10	6.8	68	26-135	
3-Nitroaniline	ug/L	10	9.6	96	42-131	
4,6-Dinitro-2-methylphenol	ug/L	10	9.8	98	26-142	
4-Bromophenylphenyl ether	ug/L	10	9.5	95	44-111	
4-Chloro-3-methylphenol	ug/L	10	9.6	96	40-93	L1
4-Chloroaniline	ug/L	10	6.1	61	23-78	
4-Chlorophenylphenyl ether	ug/L	10	9.5	95	42-111	
4-Nitroaniline	ug/L	10	11.6	116	42-158	
4-Nitrophenol	ug/L	10	4.2	42	16-63	
Acenaphthene	ug/L	10	9.1	91	40-105	
Acenaphthylene	ug/L	10	9.3	93	39-106	
Anthracene	ug/L	10	8.9	89	49-101	
Azobenzene	ug/L	10	9.5	95	44-120	N2
Benzo(a)anthracene	ug/L	10	10.3	103	55-114	
Benzo(a)pyrene	ug/L	10	9.7	97	55-109	
Benzo(b)fluoranthene	ug/L	10	11.1	111	54-123	
Benzo(g,h,i)perylene	ug/L	10	9.2	92	29-132	
Benzo(k)fluoranthene	ug/L	10	11.0	110	58-115	
Benzoic acid	ug/L	10	2.5J	25	10-52	
Benzyl alcohol	ug/L	10	7.9	79	24-121	
bis(2-Chloroethoxy)methane	ug/L	10	9.1	91	34-84	L1
bis(2-Chloroethyl) ether	ug/L	10	7.7	77	33-92	
bis(2-Chloroisopropyl) ether	ug/L	10	8.1	81	33-100	
bis(2-Ethylhexyl)phthalate	ug/L	10	10.9	109	57-129	
Butylbenzylphthalate	ug/L	10	11.3	113	59-128	
Carbazole	ug/L	10	10.3	103	54-123	
Chrysene	ug/L	10	10.3	103	59-109	
Di-n-butylphthalate	ug/L	10	10.5	105	60-120	
Di-n-octylphthalate	ug/L	10	12.0	120	54-136	
Dibenz(a,h)anthracene	ug/L	10	9.3	93	40-124	
Dibenzofuran	ug/L	10	9.1	91	41-107	
Diethylphthalate	ug/L	10	10.0	100	51-113	
Dimethylphthalate	ug/L	10	9.7	97	45-115	
Fluoranthene	ug/L	10	10.2	102	57-112	

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### QUALITY CONTROL DATA

Project: Springfield

Pace Project No.: 30229043

LABORATORY CONTROL SAMPLE: 1331578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/L	10	9.9	99	44-108	
Hexachloro-1,3-butadiene	ug/L	10	8.3	83	20-103	
Hexachlorobenzene	ug/L	10	9.4	94	10-119	
Hexachlorocyclopentadiene	ug/L	10	6.3	63	16-85	
Hexachloroethane	ug/L	10	7.3	73	26-102	
Indeno(1,2,3-cd)pyrene	ug/L	10	9.3	93	38-121	
Isophorone	ug/L	10	9.4	94	35-85	L1
N-Nitroso-di-n-propylamine	ug/L	10	9.1	91	40-108	
N-Nitrosodimethylamine	ug/L	10	4.8	48	18-73	
N-Nitrosodiphenylamine	ug/L	10	6.1	61	34-87	
Naphthalene	ug/L	10	8.7	87	32-77	L1
Nitrobenzene	ug/L	10	9.2	92	26-111	
Pentachlorophenol	ug/L	10	9.7	97	24-131	
Phenanthrene	ug/L	10	9.9	99	48-110	
Phenol	ug/L	10	3.2	32	13-49	
Pyrene	ug/L	10	11.0	110	56-117	
2,4,6-Tribromophenol (S)	%			90	36-114	
2-Fluorobiphenyl (S)	%			83	19-103	
2-Fluorophenol (S)	%			43	10-115	
Nitrobenzene-d5 (S)	%			84	13-114	
Phenol-d6 (S)	%			29	10-113	
Terphenyl-d14 (S)	%			105	14-124	

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## QUALIFIERS

Project: Springfield  
Pace Project No.: 30229043

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
TNTC - Too Numerous To Count  
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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
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.

### SAMPLE QUALIFIERS

Sample: 30229043001  
[1] VOA 8260: Residual Chlorine was present in the VOA vial used for analysis.  
Sample: 30229043002  
[1] VOA 8260: Residual Chlorine was present in the VOA vial used for analysis.  
Sample: 30229043003  
[1] VOA 8260: Residual Chlorine was present in the VOA vial used for analysis.  
Sample: 30229043004  
[1] VOA 8260: Residual Chlorine was present in the VOA vial used for analysis.

### BATCH QUALIFIERS

Batch: 270603  
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

### ANALYTE QUALIFIERS

1c A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.  
L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.  
MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.  
ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Springfield  
Pace Project No.: 30229043

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### ANALYTE QUALIFIERS

N2 The lab does not hold NELAC/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: Springfield

Pace Project No.: 30229043

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30229043001	MW-1	EPA 3005A	270626	EPA 6010B	270732
30229043002	MW-3	EPA 3005A	270626	EPA 6010B	270732
30229043003	MW-4	EPA 3005A	270626	EPA 6010B	270732
30229043004	MW-5	EPA 3005A	270626	EPA 6010B	270732
30229043005	MW-6	EPA 3005A	270626	EPA 6010B	270732
30229043001	MW-1	EPA 7470A	270773	EPA 7470A	270865
30229043002	MW-3	EPA 7470A	270773	EPA 7470A	270865
30229043003	MW-4	EPA 7470A	270773	EPA 7470A	270865
30229043004	MW-5	EPA 7470A	270773	EPA 7470A	270865
30229043005	MW-6	EPA 7470A	270773	EPA 7470A	270865
30229043001	MW-1	EPA 3510C	270603	EPA 8270C	271613
30229043002	MW-3	EPA 3510C	270603	EPA 8270C	271613
30229043003	MW-4	EPA 3510C	270603	EPA 8270C	271613
30229043004	MW-5	EPA 3510C	270603	EPA 8270C	271613
30229043005	MW-6	EPA 3510C	270603	EPA 8270C	271613
30229043001	MW-1	EPA 8260B	270639		
30229043002	MW-3	EPA 8260B	270639		
30229043003	MW-4	EPA 8260B	270639		
30229043004	MW-5	EPA 8260B	270639		
30229043005	MW-6	EPA 8260B	270639		
30229043006	Trip Blank	EPA 8260B	270639		

### REPORT OF LABORATORY ANALYSIS

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**Section A**  
Required Client Information:

Company: *HL Companies*  
Address: *40412 Carlisle Pike*  
Email To: *570.43.9800*  
Phone: *570.43.9800*  
Requested Due Date/TAT: *17L3438*

**Section B**  
Required Project:

Report To: *Randy Shuck*  
Copy To:  
Purchase Order No.: *17L5438*  
Project Name: *Springfield*  
Project Number: *17L3438*

Company Name:  
Address:  
Face Quote Reference:  
Face Project Manager:  
Face Profile #:

REGULATORY AGENCY  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

Site Location  
STATE: *PA*

Page: *1* of *1*  
2119482

ITEM #	Section D Required Client Information	Matrix Codes MATRIX I CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> Methanol Other	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB							
1	MW-1					5					001
2	MW-2 (NOT SAMPLED)										002
3	MW-3										003
4	MW-4										004
5	MW-5										005
6	MW-6										006 TB
7											
8											
9											
10											
11											
12											

**ADDITIONAL COMMENTS**

RELINQUISHED BY / AFFILIATION: *[Signature]* DATE: *09-01-17* TIME: *1947*

ACCEPTED BY / AFFILIATION: *[Signature]* DATE: *9-17* TIME: *1547*

RECEIVED ON: *9/17* ICE (Y/N): *Y* SEALED COOLER: *Y* SAMPLE CONDITIONS: *Y*

TEMP IN °C: *2.0* SAMPLES INTACT (Y/N): *Y*

SAMPLER NAME AND SIGNATURE: *[Signature]*

PRINT Name of SAMPLER: *Kellen Bullock*

SIGNATURE of SAMPLER: *[Signature]* DATE Signed (MM/DD/YY): *09-1-17*

ORIGINAL

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: BL

Project # 30229043

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Label	<u>BL</u>
LIMS Login	<u>BUM</u>

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

Thermometer Used 8    Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.0 °C    Correction Factor: +0.0 °C    Final Temp: 2.0 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: AKM 9/21/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID      Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			/	13.
Organic Samples checked for dechlorination:	/			14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation.	/			16.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: <u>VOA</u> , coliform, TOC, O&G, Phenolics				
				Initial when completed: <u>AKM</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):		/		17.
Trip Blank Present:	/			18.
Trip Blank Custody Seals Present	/			
Rad Aqueous Samples Screened > 0.5 mrem/hr			/	Initial when completed:    Date:

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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)

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

October 05, 2017

Mr. John Thatcher  
BL Companies  
4242 Carlisle Pike  
Camp Hill, PA 17011

RE: Project: Springfield Twp  
Pace Project No.: 30230847

Dear Mr. Thatcher:

Enclosed are the analytical results for sample(s) received by the laboratory on September 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Mr. Mike Beardsley, BL Companies  
Kellen Bullock, BL Companies  
Mr. Rob Good, BL Companies  
Mr. Joseph Kempf, BL Companies  
Mr. Randy Shick, BL Companies  
Mr. Ken Yoder, BL Companies



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Springfield Twp  
Pace Project No.: 30230847

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
L-A-B DOD-ELAP Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification  
Connecticut Certification #: PH-0694  
Delaware Certification  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana 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 #: PA014572015-1  
New Hampshire/TNI Certification #: 2976  
New Jersey/TNI Certification #: PA 051  
New Mexico Certification #: PA01457  
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  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: TN2867  
Texas/TNI Certification #: T104704188-14-8  
Utah/TNI Certification #: PA014572015-5  
USDA Soil Permit #: P330-14-00213  
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 Certification  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Sample: MW2	Lab ID: 30230847001	Collected: 09/20/17 17:40	Received: 09/22/17 10:20	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010B Preparation Method: EPA 3005A						
Aluminum	ND	ug/L	50.0	1	09/25/17 10:47	09/26/17 08:46	7429-90-5	
Antimony	ND	ug/L	6.0	1	09/25/17 10:47	09/26/17 08:46	7440-36-0	
Arsenic	ND	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7440-38-2	
Barium	83.0	ug/L	10.0	1	09/25/17 10:47	09/26/17 08:46	7440-39-3	
Beryllium	ND	ug/L	1.0	1	09/25/17 10:47	09/26/17 08:46	7440-41-7	
Boron	1670	ug/L	50.0	1	09/25/17 10:47	09/26/17 08:46	7440-42-8	
Cadmium	ND	ug/L	3.0	1	09/25/17 10:47	09/26/17 08:46	7440-43-9	
Calcium	61700	ug/L	1000	1	09/25/17 10:47	09/26/17 08:46	7440-70-2	
Chromium	ND	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7440-47-3	
Cobalt	ND	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7440-48-4	
Copper	41.2	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7440-50-8	
Iron	ND	ug/L	70.0	1	09/25/17 10:47	09/26/17 08:46	7439-89-6	
Lead	ND	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7439-92-1	
Magnesium	47600	ug/L	200	1	09/25/17 10:47	09/26/17 08:46	7439-95-4	
Manganese	40.0	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7439-96-5	
Molybdenum	ND	ug/L	20.0	1	09/25/17 10:47	09/26/17 08:46	7439-98-7	
Nickel	ND	ug/L	10.0	1	09/25/17 10:47	09/26/17 08:46	7440-02-0	
Potassium	4440	ug/L	500	1	09/25/17 10:47	09/26/17 08:46	7440-09-7	
Selenium	ND	ug/L	8.0	1	09/25/17 10:47	09/26/17 08:46	7782-49-2	
Silver	ND	ug/L	6.0	1	09/25/17 10:47	09/26/17 08:46	7440-22-4	
Sodium	36900	ug/L	1000	1	09/25/17 10:47	09/26/17 08:46	7440-23-5	
Thallium	ND	ug/L	10.0	1	09/25/17 10:47	09/26/17 08:46	7440-28-0	
Vanadium	ND	ug/L	5.0	1	09/25/17 10:47	09/26/17 08:46	7440-62-2	
Zinc	214	ug/L	10.0	1	09/25/17 10:47	09/26/17 08:46	7440-66-6	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	ug/L	0.20	1	09/25/17 12:07	09/25/17 17:26	7439-97-6	
<b>8270 MSSV Semivolatile Organic</b>		Analytical Method: EPA 8270C Preparation Method: EPA 3510C						
Acenaphthene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	83-32-9	1c
Acenaphthylene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	208-96-8	1c
Anthracene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	120-12-7	1c
Azobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	103-33-3	1c,N2
Benzo(a)anthracene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	56-55-3	1c
Benzo(a)pyrene	1.1	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	50-32-8	1c
Benzo(b)fluoranthene	1.2	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	205-99-2	1c
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	191-24-2	1c
Benzo(k)fluoranthene	1.1	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	207-08-9	1c
Benzoic acid	ND	ug/L	25.1	1	09/27/17 08:02	10/05/17 11:23	65-85-0	1c,CH
Benzyl alcohol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	100-51-6	1c
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	101-55-3	1c
Butylbenzylphthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	85-68-7	1c,CH
Carbazole	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	86-74-8	1c,CH
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	59-50-7	1c
4-Chloroaniline	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	106-47-8	1c,2c
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	111-91-1	1c

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Sample: MW2	Lab ID: 30230847001	Collected: 09/20/17 17:40	Received: 09/22/17 10:20	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	111-44-4	1c
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	108-60-1	1c
2-Chloronaphthalene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	91-58-7	1c
2-Chlorophenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	95-57-8	1c
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	7005-72-3	1c
Chrysene	1.2	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	218-01-9	1c
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	53-70-3	1c,CH
Dibenzofuran	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	132-64-9	1c
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	95-50-1	1c
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	541-73-1	1c
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	106-46-7	1c
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	91-94-1	1c,2c,CH
2,4-Dichlorophenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	120-83-2	1c
Diethylphthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	84-66-2	1c
2,4-Dimethylphenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	105-67-9	1c
Dimethylphthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	131-11-3	1c
Di-n-butylphthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	84-74-2	1c
4,6-Dinitro-2-methylphenol	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	534-52-1	1c
2,4-Dinitrophenol	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	51-28-5	1c
2,4-Dinitrotoluene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	121-14-2	1c
2,6-Dinitrotoluene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	606-20-2	1c
Di-n-octylphthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	117-84-0	1c
bis(2-Ethylhexyl)phthalate	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	117-81-7	1c
Fluoranthene	1.3	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	206-44-0	1c
Fluorene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	86-73-7	1c
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	87-68-3	1c
Hexachlorobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	118-74-1	1c
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	77-47-4	1c
Hexachloroethane	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	67-72-1	1c
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	193-39-5	1c,CH
Isophorone	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	78-59-1	1c
1-Methylnaphthalene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	90-12-0	1c
2-Methylnaphthalene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	91-57-6	1c
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	95-48-7	1c
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.0	1	09/27/17 08:02	10/05/17 11:23		1c
Naphthalene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	91-20-3	1c
2-Nitroaniline	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	88-74-4	1c
3-Nitroaniline	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	99-09-2	1c,CH
4-Nitroaniline	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	100-01-6	1c,3c
Nitrobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	98-95-3	1c
2-Nitrophenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	88-75-5	1c
4-Nitrophenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	100-02-7	1c
N-Nitrosodimethylamine	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	62-75-9	1c
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	621-64-7	1c
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	86-30-6	1c
Pentachlorophenol	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	87-86-5	1c

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Sample: MW2	Lab ID: 30230847001	Collected: 09/20/17 17:40	Received: 09/22/17 10:20	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b>								
Analytical Method: EPA 8270C Preparation Method: EPA 3510C								
Phenanthrene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	85-01-8	1c
Phenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	108-95-2	1c
Pyrene	1.2	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	129-00-0	1c
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	120-82-1	1c
2,4,5-Trichlorophenol	ND	ug/L	2.5	1	09/27/17 08:02	10/05/17 11:23	95-95-4	1c
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	09/27/17 08:02	10/05/17 11:23	88-06-2	1c
<b>Surrogates</b>								
Nitrobenzene-d5 (S)	86	%	13-114	1	09/27/17 08:02	10/05/17 11:23	4165-60-0	
2-Fluorobiphenyl (S)	85	%	19-103	1	09/27/17 08:02	10/05/17 11:23	321-60-8	
Terphenyl-d14 (S)	92	%	14-124	1	09/27/17 08:02	10/05/17 11:23	1718-51-0	
Phenol-d6 (S)	32	%	10-113	1	09/27/17 08:02	10/05/17 11:23	13127-88-3	
2-Fluorophenol (S)	47	%	10-115	1	09/27/17 08:02	10/05/17 11:23	367-12-4	
2,4,6-Tribromophenol (S)	99	%	36-114	1	09/27/17 08:02	10/05/17 11:23	118-79-6	
<b>8260B MSV</b>								
Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	1		09/26/17 21:03	67-64-1	
Benzene	ND	ug/L	1.0	1		09/26/17 21:03	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/26/17 21:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/26/17 21:03	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/26/17 21:03	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/26/17 21:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/26/17 21:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/26/17 21:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/26/17 21:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/26/17 21:03	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/26/17 21:03	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/26/17 21:03	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/26/17 21:03	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/26/17 21:03	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 21:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 21:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 21:03	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/26/17 21:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/26/17 21:03	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/26/17 21:03	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/26/17 21:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/26/17 21:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/26/17 21:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/26/17 21:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/26/17 21:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/26/17 21:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/26/17 21:03	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/26/17 21:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/26/17 21:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/26/17 21:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/26/17 21:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/26/17 21:03	100-42-5	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Sample: MW2		Lab ID: 30230847001	Collected: 09/20/17 17:40	Received: 09/22/17 10:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/26/17 21:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/26/17 21:03	127-18-4	
Toluene	ND	ug/L	1.0	1		09/26/17 21:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/26/17 21:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/26/17 21:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/26/17 21:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/26/17 21:03	79-01-6	
Vinyl chloride	ND	ug/L	1.0	1		09/26/17 21:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/26/17 21:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/26/17 21:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/26/17 21:03	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	104	%	79-129	1		09/26/17 21:03	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	80-120	1		09/26/17 21:03	17060-07-0	
Toluene-d8 (S)	89	%	80-120	1		09/26/17 21:03	2037-26-5	
Dibromofluoromethane (S)	107	%	80-120	1		09/26/17 21:03	1868-53-7	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Sample: Trip Blank		Lab ID: 30230847002	Collected: 09/20/17 00:01	Received: 09/22/17 10:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
Acetone	ND	ug/L	10.0	1		09/26/17 20:37	67-64-1	
Benzene	ND	ug/L	1.0	1		09/26/17 20:37	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		09/26/17 20:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/26/17 20:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/26/17 20:37	75-25-2	
Bromomethane	ND	ug/L	1.0	1		09/26/17 20:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/26/17 20:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		09/26/17 20:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		09/26/17 20:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/26/17 20:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/26/17 20:37	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/26/17 20:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/26/17 20:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/26/17 20:37	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 20:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 20:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/26/17 20:37	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/26/17 20:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/26/17 20:37	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		09/26/17 20:37	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/26/17 20:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/26/17 20:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/26/17 20:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/26/17 20:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/26/17 20:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/26/17 20:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		09/26/17 20:37	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		09/26/17 20:37	591-78-6	
Methylene Chloride	ND	ug/L	1.0	1		09/26/17 20:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/26/17 20:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/26/17 20:37	1634-04-4	
Styrene	ND	ug/L	1.0	1		09/26/17 20:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/26/17 20:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/26/17 20:37	127-18-4	
Toluene	ND	ug/L	1.0	1		09/26/17 20:37	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/26/17 20:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/26/17 20:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/26/17 20:37	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/26/17 20:37	79-01-6	
Vinyl chloride	ND	ug/L	1.0	1		09/26/17 20:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/26/17 20:37	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/26/17 20:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/26/17 20:37	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	103	%	79-129	1		09/26/17 20:37	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		09/26/17 20:37	17060-07-0	
Toluene-d8 (S)	94	%	80-120	1		09/26/17 20:37	2037-26-5	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30230847

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: Trip Blank</b>		<b>Lab ID: 30230847002</b>		Collected: 09/20/17 00:01	Received: 09/22/17 10:20	Matrix: Water		
<b>8260B MSV</b>		Analytical Method: EPA 8260B						
<b>Surrogates</b>								
Dibromofluoromethane (S)	103	%	80-120	1		09/26/17 20:37	1868-53-7	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

QC Batch: 272947	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 30230847001	

METHOD BLANK: 1343059 Matrix: Water  
Associated Lab Samples: 30230847001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/25/17 17:13	

LABORATORY CONTROL SAMPLE: 1343060

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	104	80-120	

MATRIX SPIKE SAMPLE: 1343062

Parameter	Units	30230920001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	2.5	2.6	98	75-125	

SAMPLE DUPLICATE: 1343061

Parameter	Units	30230920001 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	.14J		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

QC Batch: 272919

Analysis Method: EPA 6010B

QC Batch Method: EPA 3005A

Analysis Description: 6010 MET

Associated Lab Samples: 30230847001

METHOD BLANK: 1342923

Matrix: Water

Associated Lab Samples: 30230847001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	50.0	09/26/17 08:31	
Antimony	ug/L	ND	6.0	09/26/17 08:31	
Arsenic	ug/L	ND	5.0	09/26/17 08:31	
Barium	ug/L	ND	10.0	09/26/17 08:31	
Beryllium	ug/L	ND	1.0	09/26/17 08:31	
Boron	ug/L	ND	50.0	09/26/17 08:31	
Cadmium	ug/L	ND	3.0	09/26/17 08:31	
Calcium	ug/L	ND	1000	09/26/17 08:31	
Chromium	ug/L	ND	5.0	09/26/17 08:31	
Cobalt	ug/L	ND	5.0	09/26/17 08:31	
Copper	ug/L	ND	5.0	09/26/17 08:31	
Iron	ug/L	ND	70.0	09/26/17 08:31	
Lead	ug/L	ND	5.0	09/26/17 08:31	
Magnesium	ug/L	ND	200	09/26/17 08:31	
Manganese	ug/L	ND	5.0	09/26/17 08:31	
Molybdenum	ug/L	ND	20.0	09/26/17 08:31	
Nickel	ug/L	ND	10.0	09/26/17 08:31	
Potassium	ug/L	ND	500	09/26/17 08:31	
Selenium	ug/L	ND	8.0	09/26/17 08:31	
Silver	ug/L	ND	6.0	09/26/17 08:31	
Sodium	ug/L	ND	1000	09/26/17 08:31	
Thallium	ug/L	ND	10.0	09/26/17 08:31	
Vanadium	ug/L	ND	5.0	09/26/17 08:31	
Zinc	ug/L	ND	10.0	09/26/17 08:31	

LABORATORY CONTROL SAMPLE: 1342924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	5120	102	80-120	
Antimony	ug/L	500	505	101	80-120	
Arsenic	ug/L	500	489	98	80-120	
Barium	ug/L	500	515	103	80-120	
Beryllium	ug/L	500	515	103	80-120	
Boron	ug/L	500	514	103	80-120	
Cadmium	ug/L	500	512	102	80-120	
Calcium	ug/L	5000	4980	100	80-120	
Chromium	ug/L	500	510	102	80-120	
Cobalt	ug/L	500	488	98	80-120	
Copper	ug/L	500	512	102	80-120	
Iron	ug/L	5000	5180	104	80-120	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230847

LABORATORY CONTROL SAMPLE: 1342924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	487	97	80-120	
Magnesium	ug/L	5000	5090	102	80-120	
Manganese	ug/L	500	510	102	80-120	
Molybdenum	ug/L	500	507	101	80-120	
Nickel	ug/L	500	508	102	80-120	
Potassium	ug/L	5000	4970	99	80-120	
Selenium	ug/L	500	516	103	80-120	
Silver	ug/L	250	255	102	80-120	
Sodium	ug/L	5000	5100	102	80-120	
Thallium	ug/L	500	493	99	80-120	
Vanadium	ug/L	500	495	99	80-120	
Zinc	ug/L	500	507	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1342928 1342929

Parameter	Units	30230401001		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.							
Aluminum	ug/L	ND	5000	5000	5160	5160	103	103	75-125	0		
Antimony	ug/L	ND	500	500	520	523	104	105	75-125	1		
Arsenic	ug/L	ND	500	500	514	509	103	102	75-125	1		
Barium	ug/L	154	500	500	664	660	102	101	75-125	1		
Beryllium	ug/L	ND	500	500	523	520	105	104	75-125	1		
Boron	ug/L	2970	500	500	3400	3410	87	88	75-125	0		
Cadmium	ug/L	ND	500	500	524	521	105	104	75-125	1		
Calcium	ug/L	22900	5000	5000	28200	28100	106	104	75-125	0		
Chromium	ug/L	ND	500	500	518	516	103	103	75-125	0		
Cobalt	ug/L	ND	500	500	518	515	104	103	75-125	1		
Copper	ug/L	ND	500	500	520	517	104	103	75-125	1		
Iron	ug/L	150	5000	5000	5320	5330	103	104	75-125	0		
Lead	ug/L	ND	500	500	508	503	102	101	75-125	1		
Magnesium	ug/L	11000	5000	5000	16100	16100	102	102	75-125	0		
Manganese	ug/L	137	500	500	644	640	102	101	75-125	1		
Molybdenum	ug/L	ND	500	500	572	573	111	111	75-125	0		
Nickel	ug/L	ND	500	500	507	505	101	100	75-125	1		
Potassium	ug/L	28900	5000	5000	34100	33900	103	100	75-125	0		
Selenium	ug/L	ND	500	500	528	522	105	104	75-125	1		
Silver	ug/L	ND	250	250	260	260	104	104	75-125	0		
Sodium	ug/L	135000	5000	5000	140000	139000	102	88	75-125	1		
Thallium	ug/L	ND	500	500	492	488	98	97	75-125	1		
Vanadium	ug/L	ND	500	500	516	513	103	102	75-125	1		
Zinc	ug/L	ND	500	500	524	520	103	103	75-125	1		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

SAMPLE DUPLICATE: 1342927

Parameter	Units	30230401001 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	ND	ND		
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Barium	ug/L	154	152	1	
Beryllium	ug/L	ND	ND		
Boron	ug/L	2970	2910	2	
Cadmium	ug/L	ND	ND		
Calcium	ug/L	22900	22700	1	
Chromium	ug/L	ND	ND		
Cobalt	ug/L	ND	ND		
Copper	ug/L	ND	ND		
Iron	ug/L	150	138	8	
Lead	ug/L	ND	ND		
Magnesium	ug/L	11000	10900	1	
Manganese	ug/L	137	135	1	
Molybdenum	ug/L	ND	16.2J		
Nickel	ug/L	ND	2.9J		
Potassium	ug/L	28900	28700	1	
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	ND		
Sodium	ug/L	135000	134000	1	
Thallium	ug/L	ND	ND		
Vanadium	ug/L	ND	.98J		
Zinc	ug/L	ND	ND		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

QC Batch: 273078

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260B MSV

Associated Lab Samples: 30230847001, 30230847002

METHOD BLANK: 1343409

Matrix: Water

Associated Lab Samples: 30230847001, 30230847002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	09/26/17 11:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/26/17 11:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/26/17 11:35	
1,1-Dichloroethane	ug/L	ND	1.0	09/26/17 11:35	
1,1-Dichloroethene	ug/L	ND	1.0	09/26/17 11:35	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/26/17 11:35	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/26/17 11:35	
1,2-Dichloroethane	ug/L	ND	1.0	09/26/17 11:35	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	09/26/17 11:35	
1,2-Dichloropropane	ug/L	ND	1.0	09/26/17 11:35	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/26/17 11:35	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/26/17 11:35	
2-Butanone (MEK)	ug/L	ND	10.0	09/26/17 11:35	
2-Hexanone	ug/L	ND	10.0	09/26/17 11:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	09/26/17 11:35	
Acetone	ug/L	ND	10.0	09/26/17 11:35	
Benzene	ug/L	ND	1.0	09/26/17 11:35	
Bromochloromethane	ug/L	ND	1.0	09/26/17 11:35	
Bromodichloromethane	ug/L	ND	1.0	09/26/17 11:35	
Bromoform	ug/L	ND	1.0	09/26/17 11:35	
Bromomethane	ug/L	ND	1.0	09/26/17 11:35	
Carbon disulfide	ug/L	ND	1.0	09/26/17 11:35	
Carbon tetrachloride	ug/L	ND	1.0	09/26/17 11:35	
Chlorobenzene	ug/L	ND	1.0	09/26/17 11:35	
Chloroethane	ug/L	ND	1.0	09/26/17 11:35	
Chloroform	ug/L	ND	1.0	09/26/17 11:35	
Chloromethane	ug/L	ND	1.0	09/26/17 11:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/26/17 11:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/26/17 11:35	
Dibromochloromethane	ug/L	ND	1.0	09/26/17 11:35	
Ethylbenzene	ug/L	ND	1.0	09/26/17 11:35	
m&p-Xylene	ug/L	ND	2.0	09/26/17 11:35	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/26/17 11:35	
Methylene Chloride	ug/L	ND	1.0	09/26/17 11:35	
o-Xylene	ug/L	ND	1.0	09/26/17 11:35	
Styrene	ug/L	ND	1.0	09/26/17 11:35	
Tetrachloroethene	ug/L	ND	1.0	09/26/17 11:35	
Toluene	ug/L	ND	1.0	09/26/17 11:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/26/17 11:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/26/17 11:35	
Trichloroethene	ug/L	ND	1.0	09/26/17 11:35	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

METHOD BLANK: 1343409

Matrix: Water

Associated Lab Samples: 30230847001, 30230847002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	1.0	09/26/17 11:35	
Xylene (Total)	ug/L	ND	3.0	09/26/17 11:35	
1,2-Dichloroethane-d4 (S)	%	101	80-120	09/26/17 11:35	
4-Bromofluorobenzene (S)	%	106	79-129	09/26/17 11:35	
Dibromofluoromethane (S)	%	106	80-120	09/26/17 11:35	
Toluene-d8 (S)	%	93	80-120	09/26/17 11:35	

LABORATORY CONTROL SAMPLE: 1343410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.5	92	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	17.1	86	65-127	
1,1,2-Trichloroethane	ug/L	20	18.2	91	70-130	
1,1-Dichloroethane	ug/L	20	17.8	89	70-130	
1,1-Dichloroethene	ug/L	20	18.1	91	70-130	
1,2,4-Trichlorobenzene	ug/L	20	20.4	102	70-130	
1,2-Dichlorobenzene	ug/L	20	19.8	99	70-130	
1,2-Dichloroethane	ug/L	20	19.0	95	70-130	
1,2-Dichloroethene (Total)	ug/L	40	36.6	91	70-130	
1,2-Dichloropropane	ug/L	20	18.2	91	70-130	
1,3-Dichlorobenzene	ug/L	20	19.9	100	70-130	
1,4-Dichlorobenzene	ug/L	20	19.3	97	70-130	
2-Butanone (MEK)	ug/L	20	16.7	84	72-170	
2-Hexanone	ug/L	20	15.6	78	65-151	
4-Methyl-2-pentanone (MIBK)	ug/L	20	17.2	86	66-150	
Acetone	ug/L	20	19.3	96	30-179	
Benzene	ug/L	20	18.0	90	70-130	
Bromochloromethane	ug/L	20	21.7	108	70-130	
Bromodichloromethane	ug/L	20	16.6	83	70-130	
Bromoform	ug/L	20	18.4	92	70-130	
Bromomethane	ug/L	20	29.1	145	47-174	
Carbon disulfide	ug/L	20	16.3	82	43-133	
Carbon tetrachloride	ug/L	20	18.8	94	56-143	
Chlorobenzene	ug/L	20	18.8	94	70-130	
Chloroethane	ug/L	20	17.8	89	67-139	
Chloroform	ug/L	20	18.2	91	70-130	
Chloromethane	ug/L	20	17.1	86	57-138	
cis-1,2-Dichloroethene	ug/L	20	18.3	92	70-130	
cis-1,3-Dichloropropene	ug/L	20	17.1	85	70-130	
Dibromochloromethane	ug/L	20	18.8	94	70-130	
Ethylbenzene	ug/L	20	18.6	93	70-130	
m&p-Xylene	ug/L	40	36.9	92	70-130	
Methyl-tert-butyl ether	ug/L	20	18.9	94	70-130	
Methylene Chloride	ug/L	20	18.6	93	55-144	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230847

LABORATORY CONTROL SAMPLE: 1343410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	20	18.4	92	70-130	
Styrene	ug/L	20	18.2	91	70-130	
Tetrachloroethene	ug/L	20	20.1	100	70-130	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.2	91	70-130	
trans-1,3-Dichloropropene	ug/L	20	17.2	86	70-130	
Trichloroethene	ug/L	20	20.2	101	70-130	
Vinyl chloride	ug/L	20	18.9	94	70-130	
Xylene (Total)	ug/L	60	55.3	92	70-130	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			105	79-129	
Dibromofluoromethane (S)	%			106	80-120	
Toluene-d8 (S)	%			94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1343411 1343412

Parameter	Units	30230557013		MS	MSD	MS		MSD		% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
1,1,1-Trichloroethane	ug/L	ND	20	20	20	21.8	21.6	109	108	79-129	1	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20	18.0	17.1	90	86	57-118	5	
1,1,2-Trichloroethane	ug/L	ND	20	20	20	19.2	18.8	96	94	68-117	2	
1,1-Dichloroethane	ug/L	ND	20	20	20	20.6	19.8	103	99	74-119	4	
1,1-Dichloroethene	ug/L	ND	20	20	20	20.9	20.5	104	102	63-126	2	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20	20.8	20.2	104	101	60-117	3	
1,2-Dichlorobenzene	ug/L	ND	20	20	20	20.9	20.4	104	102	72-119	2	
1,2-Dichloroethane	ug/L	ND	20	20	20	20.5	20.1	103	101	69-116	2	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	40	39.9	38.7	100	97	62-128	3	
1,2-Dichloropropane	ug/L	ND	20	20	20	18.8	18.1	94	90	63-118	4	
1,3-Dichlorobenzene	ug/L	ND	20	20	20	20.9	20.6	105	103	81-119	2	
1,4-Dichlorobenzene	ug/L	ND	20	20	20	20.9	19.9	105	99	72-118	5	
2-Butanone (MEK)	ug/L	ND	20	20	20	19.3	18.8	96	94	72-168	2	
2-Hexanone	ug/L	ND	20	20	20	17.0	16.3	85	82	66-143	4	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	20	20	18.8	17.8	94	89	67-145	6	
Acetone	ug/L	35.4	20	20	20	25.8	26.0	-48	-47	15-175	1	ML
Benzene	ug/L	ND	20	20	20	19.6	18.5	98	92	67-121	6	
Bromochloromethane	ug/L	ND	20	20	20	23.2	22.9	116	114	62-128	2	
Bromodichloromethane	ug/L	ND	20	20	20	18.5	17.5	92	88	66-127	5	
Bromoform	ug/L	ND	20	20	20	17.4	16.7	87	84	71-127	4	
Bromomethane	ug/L	ND	20	20	20	23.1	25.5	115	127	10-156	10	
Carbon disulfide	ug/L	ND	20	20	20	16.9	15.6	84	78	45-131	8	
Carbon tetrachloride	ug/L	ND	20	20	20	21.9	20.9	109	105	69-134	5	
Chlorobenzene	ug/L	ND	20	20	20	20.2	19.9	101	100	69-119	1	
Chloroethane	ug/L	ND	20	20	20	20.1	19.5	100	97	60-156	3	
Chloroform	ug/L	ND	20	20	20	20.1	19.9	100	99	69-115	1	
Chloromethane	ug/L	ND	20	20	20	20.5	19.8	102	99	52-145	3	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

Parameter	30230557013		MS		MSD		MS		MSD		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.7	19.5	98	97	65-120	1				
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.6	17.1	88	85	57-125	3				
Dibromochloromethane	ug/L	ND	20	20	19.2	19.4	96	97	64-131	1				
Ethylbenzene	ug/L	ND	20	20	19.8	19.4	99	97	70-127	2				
m&p-Xylene	ug/L	ND	40	40	40.4	39.6	101	99	71-128	2				
Methyl-tert-butyl ether	ug/L	ND	20	20	19.4	19.0	97	95	79-135	2				
Methylene Chloride	ug/L	ND	20	20	20.7	19.1	104	96	54-133	8				
o-Xylene	ug/L	ND	20	20	20.0	19.3	100	96	68-125	4				
Styrene	ug/L	ND	20	20	18.8	18.9	94	95	65-121	1				
Tetrachloroethene	ug/L	ND	20	20	22.2	22.3	111	112	77-125	0				
Toluene	ug/L	ND	20	20	18.7	18.7	94	94	77-125	0				
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.2	19.2	101	96	70-119	5				
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.3	17.5	87	87	52-125	1				
Trichloroethene	ug/L	ND	20	20	22.4	21.8	112	109	74-128	3				
Vinyl chloride	ug/L	ND	20	20	22.3	21.1	112	105	60-131	6				
Xylene (Total)	ug/L	ND	60	60	60.4	58.9	101	98	69-128	3				
1,2-Dichloroethane-d4 (S)	%						102	103	80-120					
4-Bromofluorobenzene (S)	%						107	105	79-129					
Dibromofluoromethane (S)	%						109	107	80-120					
Toluene-d8 (S)	%						93	94	80-120					

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30230847

QC Batch: 273207 Analysis Method: EPA 8270C  
QC Batch Method: EPA 3510C Analysis Description: 8270 Water MSSV  
Associated Lab Samples: 30230847001

METHOD BLANK: 1343965 Matrix: Water  
Associated Lab Samples: 30230847001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	1.0	10/04/17 14:05	
1,2-Dichlorobenzene	ug/L	ND	1.0	10/04/17 14:05	
1,3-Dichlorobenzene	ug/L	ND	1.0	10/04/17 14:05	
1,4-Dichlorobenzene	ug/L	ND	1.0	10/04/17 14:05	
1-Methylnaphthalene	ug/L	ND	1.0	10/04/17 14:05	
2,4,5-Trichlorophenol	ug/L	ND	2.5	10/04/17 14:05	
2,4,6-Trichlorophenol	ug/L	ND	1.0	10/04/17 14:05	
2,4-Dichlorophenol	ug/L	ND	1.0	10/04/17 14:05	
2,4-Dimethylphenol	ug/L	ND	1.0	10/04/17 14:05	
2,4-Dinitrophenol	ug/L	ND	2.5	10/04/17 14:05	
2,4-Dinitrotoluene	ug/L	ND	1.0	10/04/17 14:05	
2,6-Dinitrotoluene	ug/L	ND	1.0	10/04/17 14:05	
2-Chloronaphthalene	ug/L	ND	1.0	10/04/17 14:05	
2-Chlorophenol	ug/L	ND	1.0	10/04/17 14:05	
2-Methylnaphthalene	ug/L	ND	1.0	10/04/17 14:05	
2-Methylphenol(o-Cresol)	ug/L	ND	1.0	10/04/17 14:05	
2-Nitroaniline	ug/L	ND	2.5	10/04/17 14:05	
2-Nitrophenol	ug/L	ND	1.0	10/04/17 14:05	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2.0	10/04/17 14:05	
3,3'-Dichlorobenzidine	ug/L	ND	1.0	10/04/17 14:05	2c
3-Nitroaniline	ug/L	ND	2.5	10/04/17 14:05	CH
4,6-Dinitro-2-methylphenol	ug/L	ND	2.5	10/04/17 14:05	
4-Bromophenylphenyl ether	ug/L	ND	1.0	10/04/17 14:05	
4-Chloro-3-methylphenol	ug/L	ND	1.0	10/04/17 14:05	
4-Chloroaniline	ug/L	ND	1.0	10/04/17 14:05	2c
4-Chlorophenylphenyl ether	ug/L	ND	1.0	10/04/17 14:05	
4-Nitroaniline	ug/L	ND	2.5	10/04/17 14:05	3c
4-Nitrophenol	ug/L	ND	1.0	10/04/17 14:05	
Acenaphthene	ug/L	ND	1.0	10/04/17 14:05	
Acenaphthylene	ug/L	ND	1.0	10/04/17 14:05	
Anthracene	ug/L	ND	1.0	10/04/17 14:05	
Azobenzene	ug/L	ND	1.0	10/04/17 14:05	N2
Benzo(a)anthracene	ug/L	ND	1.0	10/04/17 14:05	
Benzo(a)pyrene	ug/L	ND	1.0	10/04/17 14:05	
Benzo(b)fluoranthene	ug/L	ND	1.0	10/04/17 14:05	
Benzo(g,h,i)perylene	ug/L	ND	1.0	10/04/17 14:05	
Benzo(k)fluoranthene	ug/L	ND	1.0	10/04/17 14:05	
Benzoic acid	ug/L	ND	25.0	10/04/17 14:05	
Benzyl alcohol	ug/L	ND	1.0	10/04/17 14:05	
bis(2-Chloroethoxy)methane	ug/L	ND	1.0	10/04/17 14:05	
bis(2-Chloroethyl) ether	ug/L	ND	1.0	10/04/17 14:05	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

METHOD BLANK: 1343965

Matrix: Water

Associated Lab Samples: 30230847001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Chloroisopropyl) ether	ug/L	ND	1.0	10/04/17 14:05	
bis(2-Ethylhexyl)phthalate	ug/L	ND	1.0	10/04/17 14:05	
Butylbenzylphthalate	ug/L	ND	1.0	10/04/17 14:05	CH
Carbazole	ug/L	ND	1.0	10/04/17 14:05	CH
Chrysene	ug/L	ND	1.0	10/04/17 14:05	
Di-n-butylphthalate	ug/L	ND	1.0	10/04/17 14:05	
Di-n-octylphthalate	ug/L	ND	1.0	10/04/17 14:05	
Dibenz(a,h)anthracene	ug/L	ND	1.0	10/04/17 14:05	
Dibenzofuran	ug/L	ND	1.0	10/04/17 14:05	
Diethylphthalate	ug/L	ND	1.0	10/04/17 14:05	
Dimethylphthalate	ug/L	ND	1.0	10/04/17 14:05	
Fluoranthene	ug/L	ND	1.0	10/04/17 14:05	
Fluorene	ug/L	ND	1.0	10/04/17 14:05	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	10/04/17 14:05	
Hexachlorobenzene	ug/L	ND	1.0	10/04/17 14:05	
Hexachlorocyclopentadiene	ug/L	ND	1.0	10/04/17 14:05	
Hexachloroethane	ug/L	ND	1.0	10/04/17 14:05	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1.0	10/04/17 14:05	
Isophorone	ug/L	ND	1.0	10/04/17 14:05	
N-Nitroso-di-n-propylamine	ug/L	ND	1.0	10/04/17 14:05	
N-Nitrosodimethylamine	ug/L	ND	1.0	10/04/17 14:05	
N-Nitrosodiphenylamine	ug/L	ND	1.0	10/04/17 14:05	
Naphthalene	ug/L	ND	1.0	10/04/17 14:05	
Nitrobenzene	ug/L	ND	1.0	10/04/17 14:05	
Pentachlorophenol	ug/L	ND	2.5	10/04/17 14:05	
Phenanthrene	ug/L	ND	1.0	10/04/17 14:05	
Phenol	ug/L	ND	1.0	10/04/17 14:05	
Pyrene	ug/L	ND	1.0	10/04/17 14:05	
2,4,6-Tribromophenol (S)	%	74	36-114	10/04/17 14:05	
2-Fluorobiphenyl (S)	%	61	19-103	10/04/17 14:05	
2-Fluorophenol (S)	%	35	10-115	10/04/17 14:05	
Nitrobenzene-d5 (S)	%	58	13-114	10/04/17 14:05	
Phenol-d6 (S)	%	23	10-113	10/04/17 14:05	
Terphenyl-d14 (S)	%	96	14-124	10/04/17 14:05	

LABORATORY CONTROL SAMPLE: 1343966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	10	4.2	42	29-81	
1,2-Dichlorobenzene	ug/L	10	4.7	47	29-97	
1,3-Dichlorobenzene	ug/L	10	4.4	44	26-95	
1,4-Dichlorobenzene	ug/L	10	4.1	41	30-100	
1-Methylnaphthalene	ug/L	10	4.4	44	33-84	
2,4,5-Trichlorophenol	ug/L	10	7.0	70	48-109	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30230847

LABORATORY CONTROL SAMPLE: 1343966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,6-Trichlorophenol	ug/L	10	5.8	58	45-109	
2,4-Dichlorophenol	ug/L	10	4.9	49	36-86	
2,4-Dimethylphenol	ug/L	10	4.0	40	30-79	
2,4-Dinitrophenol	ug/L	10	5.0	50	10-131	
2,4-Dinitrotoluene	ug/L	10	7.8	78	40-111	
2,6-Dinitrotoluene	ug/L	10	7.1	71	43-117	
2-Chloronaphthalene	ug/L	10	5.5	55	37-99	
2-Chlorophenol	ug/L	10	4.6	46	37-94	
2-Methylnaphthalene	ug/L	10	4.5	45	32-77	
2-Methylphenol(o-Cresol)	ug/L	10	4.6	46	33-105	
2-Nitroaniline	ug/L	10	7.1	71	47-116	
2-Nitrophenol	ug/L	10	4.0	40	32-86	
3&4-Methylphenol(m&p Cresol)	ug/L	10	4.4	44	25-110	
3,3'-Dichlorobenzidine	ug/L	10	8.2	82	26-135	2c
3-Nitroaniline	ug/L	10	8.0	80	42-131	CH
4,6-Dinitro-2-methylphenol	ug/L	10	7.9	79	26-142	
4-Bromophenylphenyl ether	ug/L	10	7.9	79	44-111	
4-Chloro-3-methylphenol	ug/L	10	5.8	58	40-93	
4-Chloroaniline	ug/L	10	3.4	34	23-78	2c
4-Chlorophenylphenyl ether	ug/L	10	7.1	71	42-111	
4-Nitroaniline	ug/L	10	8.6	86	42-158	3c
4-Nitrophenol	ug/L	10	3.2	32	16-63	
Acenaphthene	ug/L	10	6.5	65	40-105	
Acenaphthylene	ug/L	10	6.4	64	39-106	
Anthracene	ug/L	10	8.0	80	49-101	
Azobenzene	ug/L	10	7.1	71	44-120	N2
Benzo(a)anthracene	ug/L	10	8.5	85	55-114	
Benzo(a)pyrene	ug/L	10	8.2	82	55-109	
Benzo(b)fluoranthene	ug/L	10	8.9	89	54-123	
Benzo(g,h,i)perylene	ug/L	10	8.0	80	29-132	
Benzo(k)fluoranthene	ug/L	10	8.7	87	58-115	
Benzoic acid	ug/L	10	1.4J	14	10-52	
Benzyl alcohol	ug/L	10	4.9	49	24-121	
bis(2-Chloroethoxy)methane	ug/L	10	4.3	43	34-84	
bis(2-Chloroethyl) ether	ug/L	10	4.5	45	33-92	
bis(2-Chloroisopropyl) ether	ug/L	10	5.0	50	33-100	
bis(2-Ethylhexyl)phthalate	ug/L	10	8.8	88	57-129	
Butylbenzylphthalate	ug/L	10	8.4	84	59-128	CH
Carbazole	ug/L	10	11.0	110	54-123	CH
Chrysene	ug/L	10	8.6	86	59-109	
Di-n-butylphthalate	ug/L	10	8.5	85	60-120	
Di-n-octylphthalate	ug/L	10	8.8	88	54-136	
Dibenz(a,h)anthracene	ug/L	10	8.8	88	40-124	
Dibenzofuran	ug/L	10	6.6	66	41-107	
Diethylphthalate	ug/L	10	8.1	81	51-113	
Dimethylphthalate	ug/L	10	7.7	77	45-115	
Fluoranthene	ug/L	10	8.8	88	57-112	

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: Springfield Twp

Pace Project No.: 30230847

LABORATORY CONTROL SAMPLE: 1343966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/L	10	7.5	75	44-108	
Hexachloro-1,3-butadiene	ug/L	10	4.2	42	20-103	
Hexachlorobenzene	ug/L	10	8.2	82	10-119	
Hexachlorocyclopentadiene	ug/L	10	3.5	35	16-85	
Hexachloroethane	ug/L	10	4.4	44	26-102	
Indeno(1,2,3-cd)pyrene	ug/L	10	8.6	86	38-121	
Isophorone	ug/L	10	4.9	49	35-85	
N-Nitroso-di-n-propylamine	ug/L	10	5.7	57	40-108	
N-Nitrosodimethylamine	ug/L	10	3.3	33	18-73	
N-Nitrosodiphenylamine	ug/L	10	5.9	59	34-87	
Naphthalene	ug/L	10	4.5	45	32-77	
Nitrobenzene	ug/L	10	4.3	43	26-111	
Pentachlorophenol	ug/L	10	7.6	76	24-131	
Phenanthrene	ug/L	10	8.0	80	48-110	
Phenol	ug/L	10	2.1	21	13-49	
Pyrene	ug/L	10	8.2	82	56-117	
2,4,6-Tribromophenol (S)	%			79	36-114	
2-Fluorobiphenyl (S)	%			57	19-103	
2-Fluorophenol (S)	%			33	10-115	
Nitrobenzene-d5 (S)	%			44	13-114	
Phenol-d6 (S)	%			21	10-113	
Terphenyl-d14 (S)	%			85	14-124	

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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## QUALIFIERS

Project: Springfield Twp  
Pace Project No.: 30230847

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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: 273207

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

### ANALYTE QUALIFIERS

1c A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

2c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased high and should be considered estimated.

3c The read back of the low concentration calibration standard for this compound is greater than 30% of the true value. The results may be biased low and should be considered estimated.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp  
Pace Project No.: 30230847

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30230847001	MW2	EPA 3005A	272919	EPA 6010B	273048
30230847001	MW2	EPA 7470A	272947	EPA 7470A	273029
30230847001	MW2	EPA 3510C	273207	EPA 8270C	273761
30230847001	MW2	EPA 8260B	273078		
30230847002	Trip Blank	EPA 8260B	273078		

### REPORT OF LABORATORY ANALYSIS

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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.

30230847


**Section A** Required Client Information: Company: BL Companies Address: 4242 Caribbe Ave Email To: rsn@ckeb.com Phone: 7199431693 Requested Due Date/TAT: 240025 day

**Section B** Required Project Information: Report To: Body Stick Copy To: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_ Project Name: Spangfield Twp Project Number: 1765438

**Section C** Invoice Information: Attention: \_\_\_\_\_ Company Name: \_\_\_\_\_ Address: \_\_\_\_\_ Pace Quote Reference: \_\_\_\_\_ Pace Project Manager: \_\_\_\_\_ Pace Profile #: \_\_\_\_\_

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER \_\_\_\_\_  
 Site Location: \_\_\_\_\_ STATE: PA

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE DW Drinking Water WT Waste Water WW Waste Water P Product SL Soil/Solid OL Oil WP Wipe AR Air TS Tissue OT Other	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Pace Project No. / Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB						
1						WT 6	7			
2							3			
3							1			
4										
5										
6										
7										
8										
9										
10										
11										
12										

WO#: 30230847  


ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	<u>Body Stick</u>	<u>9/24/17</u>	<u>10:40</u>	<u>B. Will</u>	<u>9/24/17</u>	<u>10:40</u>				
	<u>B. Will</u>	<u>9/24/17</u>	<u>11:00</u>	<u>C. Carney</u>	<u>9/24/17</u>	<u>10:00</u>				

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER:  
 SIGNATURE of SAMPLER:

ORIGINAL

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: B. Comp...

Project # 30230847

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7502 5892

Label <u>ZH</u>
LIMS Login <u>[Signature]</u>

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

Thermometer Used 6 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.1 °C Correction Factor: 0.0 °C Final Temp: 4.1 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: <u>[Signature]</u>
--

Comments:

	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
exceptions: <u>VOA</u> , coliform, TOC, O&G, Phenolics				Initial when completed: <u>[Signature]</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed: _____ Date: _____

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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)

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

April 23, 2018

Mr. Randy Shick  
BL Companies  
4242 Carlisle Pike  
Camp Hill, PA 17011

RE: Project: Springfield Twp  
Pace Project No.: 30249475

Dear Mr. Shick:

Enclosed are the analytical results for sample(s) received by the laboratory on April 13, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Mr. Mike Beardsley, BL Companies  
Kellen Bullock, BL Companies  
Mr. Robert DiMenna, BL Companies  
Mr. Rob Good, BL Companies  
Mr. Joseph Kempf, BL Companies  
Mr. John Thatcher, BL Companies  
Mr. Scott Treherne, BL Companies  
Mr. Ken Yoder, BL Companies



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Springfield Twp

Pace Project No.: 30249475

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### Pennsylvania Certification IDs

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Springfield Twp  
Pace Project No.: 30249475

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30249475001	MW1	Water	04/12/18 10:20	04/13/18 23:15
30249475002	MW2	Water	04/12/18 11:30	04/13/18 23:15
30249475003	MW3	Water	04/12/18 12:15	04/13/18 23:15
30249475004	MW4	Water	04/12/18 10:40	04/13/18 23:15
30249475005	MW5	Water	04/12/18 11:15	04/13/18 23:15
30249475006	MW6	Water	04/12/18 12:15	04/13/18 23:15
30249475008	Trip Blank	Water	04/12/18 00:01	04/13/18 23:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Springfield Twp

Pace Project No.: 30249475

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30249475001	MW1	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475002	MW2	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475003	MW3	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475004	MW4	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475005	MW5	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475006	MW6	EPA 6010B	CTS	24	PASI-PA
		EPA 7470A	KAS	1	PASI-PA
		EPA 8270D	EAC	75	PASI-PA
		EPA 8260B	LEL	47	PASI-PA
30249475008	Trip Blank	EPA 8260B	LEL	47	PASI-PA

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample:** MW1      **Lab ID:** 30249475001      Collected: 04/12/18 10:20      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP, Dissolved</b>									
Analytical Method: EPA 6010B      Preparation Method: EPA 3005A									
Aluminum, Dissolved	28.1J	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:23	7429-90-5	
Antimony, Dissolved	6.0 U	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:23	7440-36-0	
Arsenic, Dissolved	5.0 U	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:23	7440-38-2	
Barium, Dissolved	30.0	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:23	7440-39-3	
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:23	7440-41-7	
Boron, Dissolved	763	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:23	7440-42-8	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:23	7440-43-9	
Calcium, Dissolved	49000	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:23	7440-70-2	
Chromium, Dissolved	1.0J	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:23	7440-47-3	B
Cobalt, Dissolved	5.0 U	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:23	7440-48-4	
Copper, Dissolved	5.0 U	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:23	7440-50-8	
Iron, Dissolved	32.5J	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:23	7439-89-6	B
Lead, Dissolved	5.0 U	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:23	7439-92-1	
Magnesium, Dissolved	27100	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:23	7439-95-4	
Manganese, Dissolved	14.0	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:23	7439-96-5	
Molybdenum, Dissolved	20.0 U	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:23	7439-98-7	
Nickel, Dissolved	1.1J	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:23	7440-02-0	
Potassium, Dissolved	3100	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:23	7440-09-7	
Selenium, Dissolved	8.0 U	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:23	7782-49-2	
Silver, Dissolved	6.0 U	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:23	7440-22-4	
Sodium, Dissolved	8510	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:23	7440-23-5	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:23	7440-28-0	
Vanadium, Dissolved	5.0 U	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:23	7440-62-2	
Zinc, Dissolved	15.0	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:23	7440-66-6	
<b>7470 Mercury, Dissolved</b>									
Analytical Method: EPA 7470A      Preparation Method: EPA 7470A									
Mercury, Dissolved	0.20 U	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:11	7439-97-6	
<b>8270D MSSV Organics</b>									
Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Acenaphthene	1.1 U	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	83-32-9	A5
Acenaphthylene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	208-96-8	A5
Anthracene	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	120-12-7	A5
Azobenzene	1.1 U	ug/L	1.1	0.17	1	04/16/18 08:14	04/16/18 17:38	103-33-3	A5,N2
Benzo(a)anthracene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	56-55-3	A5
Benzo(a)pyrene	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	50-32-8	A5
Benzo(b)fluoranthene	1.1 U	ug/L	1.1	0.24	1	04/16/18 08:14	04/16/18 17:38	205-99-2	A5
Benzo(g,h,i)perylene	1.1 U	ug/L	1.1	0.38	1	04/16/18 08:14	04/16/18 17:38	191-24-2	A5
Benzo(k)fluoranthene	1.1 U	ug/L	1.1	0.098	1	04/16/18 08:14	04/16/18 17:38	207-08-9	A5
Benzoic acid	0.56J	ug/L	26.6	0.28	1	04/16/18 08:14	04/16/18 17:38	65-85-0	A5
Benzyl alcohol	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	100-51-6	A5
4-Bromophenylphenyl ether	1.1 U	ug/L	1.1	0.17	1	04/16/18 08:14	04/16/18 17:38	101-55-3	A5
Butylbenzylphthalate	0.54J	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	85-68-7	A5
Carbazole	1.1 U	ug/L	1.1	0.34	1	04/16/18 08:14	04/16/18 17:38	86-74-8	A5
4-Chloro-3-methylphenol	1.1 U	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	59-50-7	A5
4-Chloroaniline	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	106-47-8	A5
bis(2-Chloroethoxy)methane	1.1 U	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	111-91-1	A5

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW1**      **Lab ID: 30249475001**      Collected: 04/12/18 10:20      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	111-44-4	A5
bis(2-Chloroisopropyl) ether	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	108-60-1	A5
2-Chloronaphthalene	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	91-58-7	A5
2-Chlorophenol	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	95-57-8	A5
4-Chlorophenylphenyl ether	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	7005-72-3	A5
Chrysene	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	218-01-9	A5
Dibenz(a,h)anthracene	1.1 U	ug/L	1.1	0.32	1	04/16/18 08:14	04/16/18 17:38	53-70-3	A5
Dibenzofuran	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	132-64-9	A5
1,2-Dichlorobenzene	1.1 U	ug/L	1.1	0.10	1	04/16/18 08:14	04/16/18 17:38	95-50-1	A5
1,3-Dichlorobenzene	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	541-73-1	A5
1,4-Dichlorobenzene	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	106-46-7	A5
3,3'-Dichlorobenzidine	1.1 U	ug/L	1.1	0.18	1	04/16/18 08:14	04/16/18 17:38	91-94-1	A5
2,4-Dichlorophenol	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	120-83-2	A5
Diethylphthalate	1.1 U	ug/L	1.1	0.20	1	04/16/18 08:14	04/16/18 17:38	84-66-2	A5
2,4-Dimethylphenol	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	105-67-9	A5
Dimethylphthalate	1.1 U	ug/L	1.1	0.16	1	04/16/18 08:14	04/16/18 17:38	131-11-3	A5
Di-n-butylphthalate	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	84-74-2	A5
4,6-Dinitro-2-methylphenol	2.7 U	ug/L	2.7	0.86	1	04/16/18 08:14	04/16/18 17:38	534-52-1	A5
2,4-Dinitrophenol	2.7 U	ug/L	2.7	0.77	1	04/16/18 08:14	04/16/18 17:38	51-28-5	A5
2,4-Dinitrotoluene	1.1 U	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	121-14-2	A5
2,6-Dinitrotoluene	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	606-20-2	A5
Di-n-octylphthalate	1.1 U	ug/L	1.1	0.19	1	04/16/18 08:14	04/16/18 17:38	117-84-0	A5
bis(2-Ethylhexyl)phthalate	1.1 U	ug/L	1.1	0.16	1	04/16/18 08:14	04/16/18 17:38	117-81-7	A5
Fluoranthene	1.1 U	ug/L	1.1	0.086	1	04/16/18 08:14	04/16/18 17:38	206-44-0	A5
Fluorene	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	86-73-7	A5
Hexachloro-1,3-butadiene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	87-68-3	A5
Hexachlorobenzene	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	118-74-1	A5
Hexachlorocyclopentadiene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	77-47-4	A5
Hexachloroethane	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	67-72-1	A5
Indeno(1,2,3-cd)pyrene	1.1 U	ug/L	1.1	0.32	1	04/16/18 08:14	04/16/18 17:38	193-39-5	A5
Isophorone	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	78-59-1	A5
1-Methylnaphthalene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	90-12-0	A5
2-Methylnaphthalene	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	91-57-6	A5
2-Methylphenol(o-Cresol)	1.1 U	ug/L	1.1	0.15	1	04/16/18 08:14	04/16/18 17:38	95-48-7	A5
3&4-Methylphenol(m&p Cresol)	2.1 U	ug/L	2.1	0.17	1	04/16/18 08:14	04/16/18 17:38		A5
Naphthalene	1.1 U	ug/L	1.1	0.11	1	04/16/18 08:14	04/16/18 17:38	91-20-3	A5
2-Nitroaniline	2.7 U	ug/L	2.7	0.87	1	04/16/18 08:14	04/16/18 17:38	88-74-4	A5
3-Nitroaniline	2.7 U	ug/L	2.7	1.0	1	04/16/18 08:14	04/16/18 17:38	99-09-2	A5
4-Nitroaniline	2.7 U	ug/L	2.7	1.1	1	04/16/18 08:14	04/16/18 17:38	100-01-6	A5
Nitrobenzene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	98-95-3	A5
2-Nitrophenol	1.1 U	ug/L	1.1	0.14	1	04/16/18 08:14	04/16/18 17:38	88-75-5	A5
4-Nitrophenol	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	100-02-7	A5
N-Nitrosodimethylamine	1.1 U	ug/L	1.1	0.070	1	04/16/18 08:14	04/16/18 17:38	62-75-9	A5
N-Nitroso-di-n-propylamine	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	621-64-7	A5
N-Nitrosodiphenylamine	1.1 U	ug/L	1.1	0.13	1	04/16/18 08:14	04/16/18 17:38	86-30-6	A5
Pentachlorophenol	2.7 U	ug/L	2.7	0.90	1	04/16/18 08:14	04/16/18 17:38	87-86-5	A5

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW1**      **Lab ID: 30249475001**      Collected: 04/12/18 10:20      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Phenanthrene	1.1 U	ug/L	1.1	0.18	1	04/16/18 08:14	04/16/18 17:38	85-01-8	A5
Phenol	1.1 U	ug/L	1.1	0.060	1	04/16/18 08:14	04/16/18 17:38	108-95-2	A5
Pyrene	1.1 U	ug/L	1.1	0.16	1	04/16/18 08:14	04/16/18 17:38	129-00-0	A5
1,2,4-Trichlorobenzene	1.1 U	ug/L	1.1	0.12	1	04/16/18 08:14	04/16/18 17:38	120-82-1	A5
2,4,5-Trichlorophenol	2.7 U	ug/L	2.7	0.87	1	04/16/18 08:14	04/16/18 17:38	95-95-4	A5
2,4,6-Trichlorophenol	1.1 U	ug/L	1.1	0.16	1	04/16/18 08:14	04/16/18 17:38	88-06-2	A5
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	43	%	13-114		1	04/16/18 08:14	04/16/18 17:38	4165-60-0	
2-Fluorobiphenyl (S)	44	%	19-103		1	04/16/18 08:14	04/16/18 17:38	321-60-8	
Terphenyl-d14 (S)	60	%	14-124		1	04/16/18 08:14	04/16/18 17:38	1718-51-0	
Phenol-d6 (S)	17	%	10-113		1	04/16/18 08:14	04/16/18 17:38	13127-88-3	
2-Fluorophenol (S)	26	%	10-115		1	04/16/18 08:14	04/16/18 17:38	367-12-4	
2,4,6-Tribromophenol (S)	54	%	36-114		1	04/16/18 08:14	04/16/18 17:38	118-79-6	
<b>8260B MSV</b>			Analytical Method: EPA 8260B						
Acetone	10.0 U	ug/L	10.0	2.8	1		04/17/18 15:48	67-64-1	
Benzene	1.0 U	ug/L	1.0	0.24	1		04/17/18 15:48	71-43-2	
Bromochloromethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:48	74-97-5	
Bromodichloromethane	1.0 U	ug/L	1.0	0.29	1		04/17/18 15:48	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.32	1		04/17/18 15:48	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.49	1		04/17/18 15:48	74-83-9	
2-Butanone (MEK)	10.0 U	ug/L	10.0	2.1	1		04/17/18 15:48	78-93-3	
Carbon disulfide	1.0 U	ug/L	1.0	0.32	1		04/17/18 15:48	75-15-0	
Carbon tetrachloride	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:48	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.15	1		04/17/18 15:48	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.55	1		04/17/18 15:48	75-00-3	
Chloroform	1.0 U	ug/L	1.0	0.30	1		04/17/18 15:48	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.68	1		04/17/18 15:48	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.27	1		04/17/18 15:48	124-48-1	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.50	1		04/17/18 15:48	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.13	1		04/17/18 15:48	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.20	1		04/17/18 15:48	106-46-7	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.19	1		04/17/18 15:48	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.25	1		04/17/18 15:48	107-06-2	
1,2-Dichloroethene (Total)	2.0 U	ug/L	2.0	0.41	1		04/17/18 15:48	540-59-0	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:48	75-35-4	
cis-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		04/17/18 15:48	156-59-2	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.22	1		04/17/18 15:48	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.21	1		04/17/18 15:48	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.25	1		04/17/18 15:48	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.26	1		04/17/18 15:48	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:48	100-41-4	
2-Hexanone	10.0 U	ug/L	10.0	0.66	1		04/17/18 15:48	591-78-6	
Methylene Chloride	1.0 U	ug/L	1.0	0.77	1		04/17/18 15:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	10.0 U	ug/L	10.0	0.37	1		04/17/18 15:48	108-10-1	
Methyl-tert-butyl ether	1.0 U	ug/L	1.0	0.23	1		04/17/18 15:48	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW1**      **Lab ID: 30249475001**      Collected: 04/12/18 10:20      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 15:48	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:48	79-34-5	
Tetrachloroethene	0.66J	ug/L	1.0	0.32	1		04/17/18 15:48	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 15:48	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 15:48	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 15:48	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 15:48	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.39	1		04/17/18 15:48	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:48	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 15:48	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 15:48	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 15:48	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	79-129		1		04/17/18 15:48	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120		1		04/17/18 15:48	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		04/17/18 15:48	2037-26-5	
Dibromofluoromethane (S)	103	%	80-120		1		04/17/18 15:48	1868-53-7	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW2**      **Lab ID: 30249475002**      Collected: 04/12/18 11:30      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP, Dissolved</b>			Analytical Method: EPA 6010B    Preparation Method: EPA 3005A						
Aluminum, Dissolved	<b>50.0 U</b>	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:26	7429-90-5	
Antimony, Dissolved	<b>6.0 U</b>	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:26	7440-36-0	
Arsenic, Dissolved	<b>5.0 U</b>	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:26	7440-38-2	
Barium, Dissolved	<b>43.8</b>	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:26	7440-39-3	
Beryllium, Dissolved	<b>1.0 U</b>	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:26	7440-41-7	
Boron, Dissolved	<b>1150</b>	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:26	7440-42-8	
Cadmium, Dissolved	<b>3.0 U</b>	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:26	7440-43-9	
Calcium, Dissolved	<b>48400</b>	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:26	7440-70-2	
Chromium, Dissolved	<b>3.0J</b>	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:26	7440-47-3	B
Cobalt, Dissolved	<b>5.0 U</b>	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:26	7440-48-4	
Copper, Dissolved	<b>15.7</b>	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:26	7440-50-8	
Iron, Dissolved	<b>13.0J</b>	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:26	7439-89-6	B
Lead, Dissolved	<b>5.0 U</b>	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:26	7439-92-1	
Magnesium, Dissolved	<b>40800</b>	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:26	7439-95-4	
Manganese, Dissolved	<b>1.8J</b>	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:26	7439-96-5	
Molybdenum, Dissolved	<b>20.0 U</b>	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:26	7439-98-7	
Nickel, Dissolved	<b>4.7J</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:26	7440-02-0	
Potassium, Dissolved	<b>3650</b>	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:26	7440-09-7	
Selenium, Dissolved	<b>8.0 U</b>	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:26	7782-49-2	
Silver, Dissolved	<b>6.0 U</b>	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:26	7440-22-4	
Sodium, Dissolved	<b>21400</b>	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:26	7440-23-5	
Thallium, Dissolved	<b>10.0 U</b>	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:26	7440-28-0	
Vanadium, Dissolved	<b>5.0 U</b>	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:26	7440-62-2	
Zinc, Dissolved	<b>116</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:26	7440-66-6	
<b>7470 Mercury, Dissolved</b>			Analytical Method: EPA 7470A    Preparation Method: EPA 7470A						
Mercury, Dissolved	<b>0.20 U</b>	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:17	7439-97-6	
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Acenaphthene	<b>0.99 U</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	83-32-9	
Acenaphthylene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	208-96-8	
Anthracene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	120-12-7	
Azobenzene	<b>0.99 U</b>	ug/L	0.99	0.16	1	04/16/18 08:14	04/16/18 18:00	103-33-3	N2
Benzo(a)anthracene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	56-55-3	
Benzo(a)pyrene	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	50-32-8	
Benzo(b)fluoranthene	<b>0.99 U</b>	ug/L	0.99	0.23	1	04/16/18 08:14	04/16/18 18:00	205-99-2	
Benzo(g,h,i)perylene	<b>0.99 U</b>	ug/L	0.99	0.35	1	04/16/18 08:14	04/16/18 18:00	191-24-2	
Benzo(k)fluoranthene	<b>0.99 U</b>	ug/L	0.99	0.091	1	04/16/18 08:14	04/16/18 18:00	207-08-9	
Benzoic acid	<b>0.50J</b>	ug/L	24.6	0.26	1	04/16/18 08:14	04/16/18 18:00	65-85-0	
Benzyl alcohol	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	100-51-6	
4-Bromophenylphenyl ether	<b>0.99 U</b>	ug/L	0.99	0.15	1	04/16/18 08:14	04/16/18 18:00	101-55-3	
Butylbenzylphthalate	<b>0.47J</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	85-68-7	
Carbazole	<b>0.99 U</b>	ug/L	0.99	0.32	1	04/16/18 08:14	04/16/18 18:00	86-74-8	
4-Chloro-3-methylphenol	<b>0.99 U</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	59-50-7	
4-Chloroaniline	<b>0.99 U</b>	ug/L	0.99	0.10	1	04/16/18 08:14	04/16/18 18:00	106-47-8	
bis(2-Chloroethoxy)methane	<b>0.99 U</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	111-91-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW2**      **Lab ID: 30249475002**      Collected: 04/12/18 11:30      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	<b>0.99 U</b>	ug/L	0.99	0.10	1	04/16/18 08:14	04/16/18 18:00	111-44-4	
bis(2-Chloroisopropyl) ether	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	108-60-1	
2-Chloronaphthalene	<b>0.99 U</b>	ug/L	0.99	0.10	1	04/16/18 08:14	04/16/18 18:00	91-58-7	
2-Chlorophenol	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	95-57-8	
4-Chlorophenylphenyl ether	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	7005-72-3	
Chrysene	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	218-01-9	
Dibenz(a,h)anthracene	<b>0.99 U</b>	ug/L	0.99	0.30	1	04/16/18 08:14	04/16/18 18:00	53-70-3	
Dibenzofuran	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	132-64-9	
1,2-Dichlorobenzene	<b>0.99 U</b>	ug/L	0.99	0.096	1	04/16/18 08:14	04/16/18 18:00	95-50-1	
1,3-Dichlorobenzene	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	541-73-1	
1,4-Dichlorobenzene	<b>0.99 U</b>	ug/L	0.99	0.10	1	04/16/18 08:14	04/16/18 18:00	106-46-7	
3,3'-Dichlorobenzidine	<b>0.99 U</b>	ug/L	0.99	0.17	1	04/16/18 08:14	04/16/18 18:00	91-94-1	
2,4-Dichlorophenol	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	120-83-2	
Diethylphthalate	<b>0.99 U</b>	ug/L	0.99	0.18	1	04/16/18 08:14	04/16/18 18:00	84-66-2	
2,4-Dimethylphenol	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	105-67-9	
Dimethylphthalate	<b>0.99 U</b>	ug/L	0.99	0.15	1	04/16/18 08:14	04/16/18 18:00	131-11-3	
Di-n-butylphthalate	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	84-74-2	
4,6-Dinitro-2-methylphenol	<b>2.5 U</b>	ug/L	2.5	0.80	1	04/16/18 08:14	04/16/18 18:00	534-52-1	
2,4-Dinitrophenol	<b>2.5 U</b>	ug/L	2.5	0.72	1	04/16/18 08:14	04/16/18 18:00	51-28-5	
2,4-Dinitrotoluene	<b>0.99 U</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	121-14-2	
2,6-Dinitrotoluene	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	606-20-2	
Di-n-octylphthalate	<b>0.99 U</b>	ug/L	0.99	0.17	1	04/16/18 08:14	04/16/18 18:00	117-84-0	
bis(2-Ethylhexyl)phthalate	<b>0.99 U</b>	ug/L	0.99	0.15	1	04/16/18 08:14	04/16/18 18:00	117-81-7	
Fluoranthene	<b>0.99 U</b>	ug/L	0.99	0.080	1	04/16/18 08:14	04/16/18 18:00	206-44-0	
Fluorene	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	86-73-7	
Hexachloro-1,3-butadiene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	87-68-3	
Hexachlorobenzene	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	118-74-1	
Hexachlorocyclopentadiene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	77-47-4	
Hexachloroethane	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	67-72-1	
Indeno(1,2,3-cd)pyrene	<b>0.99 U</b>	ug/L	0.99	0.30	1	04/16/18 08:14	04/16/18 18:00	193-39-5	
Isophorone	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	78-59-1	
1-Methylnaphthalene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	90-12-0	
2-Methylnaphthalene	<b>0.99 U</b>	ug/L	0.99	0.10	1	04/16/18 08:14	04/16/18 18:00	91-57-6	
2-Methylphenol(o-Cresol)	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	95-48-7	
3&4-Methylphenol(m&p Cresol)	<b>2.0 U</b>	ug/L	2.0	0.16	1	04/16/18 08:14	04/16/18 18:00		
Naphthalene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	91-20-3	
2-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	0.80	1	04/16/18 08:14	04/16/18 18:00	88-74-4	
3-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	0.93	1	04/16/18 08:14	04/16/18 18:00	99-09-2	
4-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	1.0	1	04/16/18 08:14	04/16/18 18:00	100-01-6	
Nitrobenzene	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	98-95-3	
2-Nitrophenol	<b>0.99 U</b>	ug/L	0.99	0.13	1	04/16/18 08:14	04/16/18 18:00	88-75-5	
4-Nitrophenol	<b>0.99 U</b>	ug/L	0.99	0.11	1	04/16/18 08:14	04/16/18 18:00	100-02-7	
N-Nitrosodimethylamine	<b>0.99 U</b>	ug/L	0.99	0.065	1	04/16/18 08:14	04/16/18 18:00	62-75-9	
N-Nitroso-di-n-propylamine	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	621-64-7	
N-Nitrosodiphenylamine	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	86-30-6	
Pentachlorophenol	<b>2.5 U</b>	ug/L	2.5	0.83	1	04/16/18 08:14	04/16/18 18:00	87-86-5	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW2**      **Lab ID: 30249475002**      Collected: 04/12/18 11:30      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Phenanthrene	<b>0.99 U</b>	ug/L	0.99	0.16	1	04/16/18 08:14	04/16/18 18:00	85-01-8	
Phenol	<b>0.99 U</b>	ug/L	0.99	0.055	1	04/16/18 08:14	04/16/18 18:00	108-95-2	
Pyrene	<b>0.99 U</b>	ug/L	0.99	0.15	1	04/16/18 08:14	04/16/18 18:00	129-00-0	
1,2,4-Trichlorobenzene	<b>0.99 U</b>	ug/L	0.99	0.12	1	04/16/18 08:14	04/16/18 18:00	120-82-1	
2,4,5-Trichlorophenol	<b>2.5 U</b>	ug/L	2.5	0.81	1	04/16/18 08:14	04/16/18 18:00	95-95-4	
2,4,6-Trichlorophenol	<b>0.99 U</b>	ug/L	0.99	0.14	1	04/16/18 08:14	04/16/18 18:00	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	64	%	13-114		1	04/16/18 08:14	04/16/18 18:00	4165-60-0	
2-Fluorobiphenyl (S)	64	%	19-103		1	04/16/18 08:14	04/16/18 18:00	321-60-8	
Terphenyl-d14 (S)	71	%	14-124		1	04/16/18 08:14	04/16/18 18:00	1718-51-0	
Phenol-d6 (S)	25	%	10-113		1	04/16/18 08:14	04/16/18 18:00	13127-88-3	
2-Fluorophenol (S)	38	%	10-115		1	04/16/18 08:14	04/16/18 18:00	367-12-4	
2,4,6-Tribromophenol (S)	71	%	36-114		1	04/16/18 08:14	04/16/18 18:00	118-79-6	
<b>8260B MSV</b>			Analytical Method: EPA 8260B						
Acetone	<b>10.0 U</b>	ug/L	10.0	2.8	1		04/17/18 17:04	67-64-1	
Benzene	<b>1.0 U</b>	ug/L	1.0	0.24	1		04/17/18 17:04	71-43-2	
Bromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 17:04	74-97-5	
Bromodichloromethane	<b>1.0 U</b>	ug/L	1.0	0.29	1		04/17/18 17:04	75-27-4	
Bromoform	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 17:04	75-25-2	
Bromomethane	<b>1.0 U</b>	ug/L	1.0	0.49	1		04/17/18 17:04	74-83-9	
2-Butanone (MEK)	<b>10.0 U</b>	ug/L	10.0	2.1	1		04/17/18 17:04	78-93-3	
Carbon disulfide	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 17:04	75-15-0	
Carbon tetrachloride	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 17:04	56-23-5	
Chlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.15	1		04/17/18 17:04	108-90-7	
Chloroethane	<b>1.0 U</b>	ug/L	1.0	0.55	1		04/17/18 17:04	75-00-3	
Chloroform	<b>1.0 U</b>	ug/L	1.0	0.30	1		04/17/18 17:04	67-66-3	
Chloromethane	<b>1.0 U</b>	ug/L	1.0	0.68	1		04/17/18 17:04	74-87-3	
Dibromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.27	1		04/17/18 17:04	124-48-1	
1,2-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.50	1		04/17/18 17:04	95-50-1	
1,3-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.13	1		04/17/18 17:04	541-73-1	
1,4-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.20	1		04/17/18 17:04	106-46-7	
1,1-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.19	1		04/17/18 17:04	75-34-3	
1,2-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 17:04	107-06-2	
1,2-Dichloroethene (Total)	<b>2.0 U</b>	ug/L	2.0	0.41	1		04/17/18 17:04	540-59-0	
1,1-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 17:04	75-35-4	
cis-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.18	1		04/17/18 17:04	156-59-2	
trans-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.22	1		04/17/18 17:04	156-60-5	
1,2-Dichloropropane	<b>1.0 U</b>	ug/L	1.0	0.21	1		04/17/18 17:04	78-87-5	
cis-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 17:04	10061-01-5	
trans-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.26	1		04/17/18 17:04	10061-02-6	
Ethylbenzene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 17:04	100-41-4	
2-Hexanone	<b>10.0 U</b>	ug/L	10.0	0.66	1		04/17/18 17:04	591-78-6	
Methylene Chloride	<b>1.0 U</b>	ug/L	1.0	0.77	1		04/17/18 17:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	<b>10.0 U</b>	ug/L	10.0	0.37	1		04/17/18 17:04	108-10-1	
Methyl-tert-butyl ether	<b>1.0 U</b>	ug/L	1.0	0.23	1		04/17/18 17:04	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW2**      **Lab ID: 30249475002**      Collected: 04/12/18 11:30      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 17:04	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 17:04	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.32	1		04/17/18 17:04	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 17:04	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 17:04	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 17:04	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 17:04	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.39	1		04/17/18 17:04	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 17:04	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 17:04	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 17:04	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 17:04	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	100	%	79-129		1		04/17/18 17:04	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120		1		04/17/18 17:04	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		04/17/18 17:04	2037-26-5	
Dibromofluoromethane (S)	102	%	80-120		1		04/17/18 17:04	1868-53-7	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

Sample: MW3 Lab ID: 30249475003 Collected: 04/12/18 12:15 Received: 04/13/18 23:15 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP,Dissolved</b>			Analytical Method: EPA 6010B Preparation Method: EPA 3005A						
Aluminum, Dissolved	28.5J	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:28	7429-90-5	
Antimony, Dissolved	6.0 U	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:28	7440-36-0	
Arsenic, Dissolved	5.0 U	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:28	7440-38-2	
Barium, Dissolved	15.2	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:28	7440-39-3	
Beryllium, Dissolved	1.0 U	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:28	7440-41-7	
Boron, Dissolved	317	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:28	7440-42-8	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:28	7440-43-9	
Calcium, Dissolved	174000	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:28	7440-70-2	
Chromium, Dissolved	20.6	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:28	7440-47-3	
Cobalt, Dissolved	5.0 U	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:28	7440-48-4	
Copper, Dissolved	5.0 U	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:28	7440-50-8	
Iron, Dissolved	86.8	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:28	7439-89-6	B
Lead, Dissolved	5.0 U	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:28	7439-92-1	
Magnesium, Dissolved	55200	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:28	7439-95-4	
Manganese, Dissolved	7.8	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:28	7439-96-5	
Molybdenum, Dissolved	20.0 U	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:28	7439-98-7	
Nickel, Dissolved	10.0 U	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:28	7440-02-0	
Potassium, Dissolved	4350	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:28	7440-09-7	
Selenium, Dissolved	9.1	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:28	7782-49-2	
Silver, Dissolved	6.0 U	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:28	7440-22-4	
Sodium, Dissolved	90000	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:28	7440-23-5	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:28	7440-28-0	
Vanadium, Dissolved	0.71J	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:28	7440-62-2	
Zinc, Dissolved	3.2J	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:28	7440-66-6	
<b>7470 Mercury, Dissolved</b>			Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury, Dissolved	0.20 U	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:18	7439-97-6	
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	0.98 U	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	83-32-9	
Acenaphthylene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	208-96-8	
Anthracene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	120-12-7	
Azobenzene	0.98 U	ug/L	0.98	0.16	1	04/16/18 08:14	04/16/18 18:22	103-33-3	N2
Benzo(a)anthracene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	56-55-3	
Benzo(a)pyrene	0.98 U	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	50-32-8	
Benzo(b)fluoranthene	0.98 U	ug/L	0.98	0.22	1	04/16/18 08:14	04/16/18 18:22	205-99-2	
Benzo(g,h,i)perylene	0.98 U	ug/L	0.98	0.35	1	04/16/18 08:14	04/16/18 18:22	191-24-2	
Benzo(k)fluoranthene	0.98 U	ug/L	0.98	0.090	1	04/16/18 08:14	04/16/18 18:22	207-08-9	
Benzoic acid	0.90J	ug/L	24.5	0.25	1	04/16/18 08:14	04/16/18 18:22	65-85-0	
Benzyl alcohol	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	100-51-6	
4-Bromophenylphenyl ether	0.98 U	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 18:22	101-55-3	
Butylbenzylphthalate	0.48J	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	85-68-7	
Carbazole	0.98 U	ug/L	0.98	0.32	1	04/16/18 08:14	04/16/18 18:22	86-74-8	
4-Chloro-3-methylphenol	0.98 U	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	59-50-7	
4-Chloroaniline	0.98 U	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 18:22	106-47-8	
bis(2-Chloroethoxy)methane	0.98 U	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	111-91-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW3**      **Lab ID: 30249475003**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 18:22	111-44-4	
bis(2-Chloroisopropyl) ether	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	108-60-1	
2-Chloronaphthalene	<b>0.98 U</b>	ug/L	0.98	0.099	1	04/16/18 08:14	04/16/18 18:22	91-58-7	
2-Chlorophenol	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	95-57-8	
4-Chlorophenylphenyl ether	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	7005-72-3	
Chrysene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	218-01-9	
Dibenz(a,h)anthracene	<b>0.98 U</b>	ug/L	0.98	0.30	1	04/16/18 08:14	04/16/18 18:22	53-70-3	
Dibenzofuran	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	132-64-9	
1,2-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.095	1	04/16/18 08:14	04/16/18 18:22	95-50-1	
1,3-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	541-73-1	
1,4-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.099	1	04/16/18 08:14	04/16/18 18:22	106-46-7	
3,3'-Dichlorobenzidine	<b>0.98 U</b>	ug/L	0.98	0.17	1	04/16/18 08:14	04/16/18 18:22	91-94-1	
2,4-Dichlorophenol	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	120-83-2	
Diethylphthalate	<b>0.98 U</b>	ug/L	0.98	0.18	1	04/16/18 08:14	04/16/18 18:22	84-66-2	
2,4-Dimethylphenol	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	105-67-9	
Dimethylphthalate	<b>0.98 U</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 18:22	131-11-3	
Di-n-butylphthalate	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	84-74-2	
4,6-Dinitro-2-methylphenol	<b>2.5 U</b>	ug/L	2.5	0.80	1	04/16/18 08:14	04/16/18 18:22	534-52-1	
2,4-Dinitrophenol	<b>2.5 U</b>	ug/L	2.5	0.71	1	04/16/18 08:14	04/16/18 18:22	51-28-5	
2,4-Dinitrotoluene	<b>0.98 U</b>	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	121-14-2	
2,6-Dinitrotoluene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	606-20-2	
Di-n-octylphthalate	<b>0.98 U</b>	ug/L	0.98	0.17	1	04/16/18 08:14	04/16/18 18:22	117-84-0	
bis(2-Ethylhexyl)phthalate	<b>0.98 U</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 18:22	117-81-7	
Fluoranthene	<b>0.98 U</b>	ug/L	0.98	0.079	1	04/16/18 08:14	04/16/18 18:22	206-44-0	
Fluorene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	86-73-7	
Hexachloro-1,3-butadiene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	87-68-3	
Hexachlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	118-74-1	
Hexachlorocyclopentadiene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	77-47-4	
Hexachloroethane	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	67-72-1	
Indeno(1,2,3-cd)pyrene	<b>0.98 U</b>	ug/L	0.98	0.30	1	04/16/18 08:14	04/16/18 18:22	193-39-5	
Isophorone	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	78-59-1	
1-Methylnaphthalene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	90-12-0	
2-Methylnaphthalene	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 18:22	91-57-6	
2-Methylphenol(o-Cresol)	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	95-48-7	
3&4-Methylphenol(m&p Cresol)	<b>2.0 U</b>	ug/L	2.0	0.16	1	04/16/18 08:14	04/16/18 18:22		
Naphthalene	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 18:22	91-20-3	
2-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	0.80	1	04/16/18 08:14	04/16/18 18:22	88-74-4	
3-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	0.93	1	04/16/18 08:14	04/16/18 18:22	99-09-2	
4-Nitroaniline	<b>2.5 U</b>	ug/L	2.5	1.0	1	04/16/18 08:14	04/16/18 18:22	100-01-6	
Nitrobenzene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	98-95-3	
2-Nitrophenol	<b>0.98 U</b>	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 18:22	88-75-5	
4-Nitrophenol	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	100-02-7	
N-Nitrosodimethylamine	<b>0.98 U</b>	ug/L	0.98	0.065	1	04/16/18 08:14	04/16/18 18:22	62-75-9	
N-Nitroso-di-n-propylamine	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	621-64-7	
N-Nitrosodiphenylamine	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 18:22	86-30-6	
Pentachlorophenol	<b>2.5 U</b>	ug/L	2.5	0.83	1	04/16/18 08:14	04/16/18 18:22	87-86-5	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW3**      **Lab ID: 30249475003**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>									
Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Phenanthrene	<b>0.98 U</b>	ug/L	0.98	0.16	1	04/16/18 08:14	04/16/18 18:22	85-01-8	
Phenol	<b>0.98 U</b>	ug/L	0.98	0.055	1	04/16/18 08:14	04/16/18 18:22	108-95-2	
Pyrene	<b>0.98 U</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 18:22	129-00-0	
1,2,4-Trichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 18:22	120-82-1	
2,4,5-Trichlorophenol	<b>2.5 U</b>	ug/L	2.5	0.80	1	04/16/18 08:14	04/16/18 18:22	95-95-4	
2,4,6-Trichlorophenol	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 18:22	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	52	%	13-114		1	04/16/18 08:14	04/16/18 18:22	4165-60-0	
2-Fluorobiphenyl (S)	58	%	19-103		1	04/16/18 08:14	04/16/18 18:22	321-60-8	
Terphenyl-d14 (S)	67	%	14-124		1	04/16/18 08:14	04/16/18 18:22	1718-51-0	
Phenol-d6 (S)	21	%	10-113		1	04/16/18 08:14	04/16/18 18:22	13127-88-3	
2-Fluorophenol (S)	31	%	10-115		1	04/16/18 08:14	04/16/18 18:22	367-12-4	
2,4,6-Tribromophenol (S)	69	%	36-114		1	04/16/18 08:14	04/16/18 18:22	118-79-6	
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Acetone	<b>10.0 U</b>	ug/L	10.0	2.8	1		04/17/18 17:29	67-64-1	
Benzene	<b>1.0 U</b>	ug/L	1.0	0.24	1		04/17/18 17:29	71-43-2	
Bromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 17:29	74-97-5	
Bromodichloromethane	<b>1.0 U</b>	ug/L	1.0	0.29	1		04/17/18 17:29	75-27-4	
Bromoform	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 17:29	75-25-2	
Bromomethane	<b>1.0 U</b>	ug/L	1.0	0.49	1		04/17/18 17:29	74-83-9	
2-Butanone (MEK)	<b>10.0 U</b>	ug/L	10.0	2.1	1		04/17/18 17:29	78-93-3	
Carbon disulfide	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 17:29	75-15-0	
Carbon tetrachloride	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 17:29	56-23-5	
Chlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.15	1		04/17/18 17:29	108-90-7	
Chloroethane	<b>1.0 U</b>	ug/L	1.0	0.55	1		04/17/18 17:29	75-00-3	
Chloroform	<b>1.0 U</b>	ug/L	1.0	0.30	1		04/17/18 17:29	67-66-3	
Chloromethane	<b>1.0 U</b>	ug/L	1.0	0.68	1		04/17/18 17:29	74-87-3	
Dibromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.27	1		04/17/18 17:29	124-48-1	
1,2-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.50	1		04/17/18 17:29	95-50-1	
1,3-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.13	1		04/17/18 17:29	541-73-1	
1,4-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.20	1		04/17/18 17:29	106-46-7	
1,1-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.19	1		04/17/18 17:29	75-34-3	
1,2-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 17:29	107-06-2	
1,2-Dichloroethene (Total)	<b>2.0 U</b>	ug/L	2.0	0.41	1		04/17/18 17:29	540-59-0	
1,1-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 17:29	75-35-4	
cis-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.18	1		04/17/18 17:29	156-59-2	
trans-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.22	1		04/17/18 17:29	156-60-5	
1,2-Dichloropropane	<b>1.0 U</b>	ug/L	1.0	0.21	1		04/17/18 17:29	78-87-5	
cis-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 17:29	10061-01-5	
trans-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.26	1		04/17/18 17:29	10061-02-6	
Ethylbenzene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 17:29	100-41-4	
2-Hexanone	<b>10.0 U</b>	ug/L	10.0	0.66	1		04/17/18 17:29	591-78-6	
Methylene Chloride	<b>1.0 U</b>	ug/L	1.0	0.77	1		04/17/18 17:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	<b>10.0 U</b>	ug/L	10.0	0.37	1		04/17/18 17:29	108-10-1	
Methyl-tert-butyl ether	<b>1.0 U</b>	ug/L	1.0	0.23	1		04/17/18 17:29	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW3**      **Lab ID: 30249475003**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 17:29	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 17:29	79-34-5	
Tetrachloroethene	2.3	ug/L	1.0	0.32	1		04/17/18 17:29	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 17:29	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 17:29	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 17:29	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 17:29	79-00-5	
Trichloroethene	6.1	ug/L	1.0	0.39	1		04/17/18 17:29	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 17:29	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 17:29	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 17:29	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 17:29	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	103	%	79-129		1		04/17/18 17:29	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-120		1		04/17/18 17:29	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		04/17/18 17:29	2037-26-5	
Dibromofluoromethane (S)	100	%	80-120		1		04/17/18 17:29	1868-53-7	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW4**      **Lab ID: 30249475004**      Collected: 04/12/18 10:40      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010B    Preparation Method: EPA 3005A							
Aluminum, Dissolved	<b>3170</b>	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:34	7429-90-5	
Antimony, Dissolved	<b>6.0 U</b>	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:34	7440-36-0	
Arsenic, Dissolved	<b>5.0 U</b>	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:34	7440-38-2	
Barium, Dissolved	<b>71.5</b>	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:34	7440-39-3	
Beryllium, Dissolved	<b>1.5</b>	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:34	7440-41-7	
Boron, Dissolved	<b>857</b>	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:34	7440-42-8	
Cadmium, Dissolved	<b>3.0 U</b>	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:34	7440-43-9	
Calcium, Dissolved	<b>85500</b>	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:34	7440-70-2	
Chromium, Dissolved	<b>9.5</b>	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:34	7440-47-3	B
Cobalt, Dissolved	<b>6.6</b>	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:34	7440-48-4	
Copper, Dissolved	<b>7.8</b>	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:34	7440-50-8	
Iron, Dissolved	<b>11500</b>	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:34	7439-89-6	
Lead, Dissolved	<b>3.5J</b>	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:34	7439-92-1	
Magnesium, Dissolved	<b>28300</b>	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:34	7439-95-4	
Manganese, Dissolved	<b>1710</b>	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:34	7439-96-5	
Molybdenum, Dissolved	<b>20.0 U</b>	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:34	7439-98-7	
Nickel, Dissolved	<b>12.7</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:34	7440-02-0	
Potassium, Dissolved	<b>6840</b>	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:34	7440-09-7	
Selenium, Dissolved	<b>8.0 U</b>	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:34	7782-49-2	
Silver, Dissolved	<b>6.0 U</b>	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:34	7440-22-4	
Sodium, Dissolved	<b>9920</b>	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:34	7440-23-5	
Thallium, Dissolved	<b>10.0 U</b>	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:34	7440-28-0	
Vanadium, Dissolved	<b>5.9</b>	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:34	7440-62-2	
Zinc, Dissolved	<b>58.3</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:34	7440-66-6	
<b>7470 Mercury, Dissolved</b>		Analytical Method: EPA 7470A    Preparation Method: EPA 7470A							
Mercury, Dissolved	<b>0.20 U</b>	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:20	7439-97-6	
<b>8270D MSSV Organics</b>		Analytical Method: EPA 8270D    Preparation Method: EPA 3510C							
Acenaphthene	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	83-32-9	
Acenaphthylene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	208-96-8	
Anthracene	<b>0.97 U</b>	ug/L	0.97	0.10	1	04/16/18 08:14	04/16/18 18:43	120-12-7	
Azobenzene	<b>0.97 U</b>	ug/L	0.97	0.16	1	04/16/18 08:14	04/16/18 18:43	103-33-3	N2
Benzo(a)anthracene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	56-55-3	
Benzo(a)pyrene	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	50-32-8	
Benzo(b)fluoranthene	<b>0.97 U</b>	ug/L	0.97	0.22	1	04/16/18 08:14	04/16/18 18:43	205-99-2	
Benzo(g,h,i)perylene	<b>0.97 U</b>	ug/L	0.97	0.35	1	04/16/18 08:14	04/16/18 18:43	191-24-2	
Benzo(k)fluoranthene	<b>0.97 U</b>	ug/L	0.97	0.089	1	04/16/18 08:14	04/16/18 18:43	207-08-9	
Benzoic acid	<b>0.45J</b>	ug/L	24.3	0.25	1	04/16/18 08:14	04/16/18 18:43	65-85-0	
Benzyl alcohol	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	100-51-6	
4-Bromophenylphenyl ether	<b>0.97 U</b>	ug/L	0.97	0.15	1	04/16/18 08:14	04/16/18 18:43	101-55-3	
Butylbenzylphthalate	<b>0.48J</b>	ug/L	0.97	0.13	1	04/16/18 08:14	04/16/18 18:43	85-68-7	
Carbazole	<b>0.97 U</b>	ug/L	0.97	0.31	1	04/16/18 08:14	04/16/18 18:43	86-74-8	
4-Chloro-3-methylphenol	<b>0.97 U</b>	ug/L	0.97	0.13	1	04/16/18 08:14	04/16/18 18:43	59-50-7	
4-Chloroaniline	<b>0.97 U</b>	ug/L	0.97	0.10	1	04/16/18 08:14	04/16/18 18:43	106-47-8	
bis(2-Chloroethoxy)methane	<b>0.97 U</b>	ug/L	0.97	0.13	1	04/16/18 08:14	04/16/18 18:43	111-91-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW4**      **Lab ID: 30249475004**      Collected: 04/12/18 10:40      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	<b>0.97 U</b>	ug/L	0.97	0.10	1	04/16/18 08:14	04/16/18 18:43	111-44-4	
bis(2-Chloroisopropyl) ether	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	108-60-1	
2-Chloronaphthalene	<b>0.97 U</b>	ug/L	0.97	0.098	1	04/16/18 08:14	04/16/18 18:43	91-58-7	
2-Chlorophenol	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	95-57-8	
4-Chlorophenylphenyl ether	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	7005-72-3	
Chrysene	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	218-01-9	
Dibenz(a,h)anthracene	<b>0.97 U</b>	ug/L	0.97	0.30	1	04/16/18 08:14	04/16/18 18:43	53-70-3	
Dibenzofuran	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	132-64-9	
1,2-Dichlorobenzene	<b>0.97 U</b>	ug/L	0.97	0.094	1	04/16/18 08:14	04/16/18 18:43	95-50-1	
1,3-Dichlorobenzene	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	541-73-1	
1,4-Dichlorobenzene	<b>0.97 U</b>	ug/L	0.97	0.098	1	04/16/18 08:14	04/16/18 18:43	106-46-7	
3,3'-Dichlorobenzidine	<b>0.97 U</b>	ug/L	0.97	0.17	1	04/16/18 08:14	04/16/18 18:43	91-94-1	
2,4-Dichlorophenol	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	120-83-2	
Diethylphthalate	<b>0.97 U</b>	ug/L	0.97	0.18	1	04/16/18 08:14	04/16/18 18:43	84-66-2	
2,4-Dimethylphenol	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	105-67-9	
Dimethylphthalate	<b>0.97 U</b>	ug/L	0.97	0.15	1	04/16/18 08:14	04/16/18 18:43	131-11-3	
Di-n-butylphthalate	<b>0.97 U</b>	ug/L	0.97	0.13	1	04/16/18 08:14	04/16/18 18:43	84-74-2	
4,6-Dinitro-2-methylphenol	<b>2.4 U</b>	ug/L	2.4	0.79	1	04/16/18 08:14	04/16/18 18:43	534-52-1	
2,4-Dinitrophenol	<b>2.4 U</b>	ug/L	2.4	0.70	1	04/16/18 08:14	04/16/18 18:43	51-28-5	
2,4-Dinitrotoluene	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	121-14-2	
2,6-Dinitrotoluene	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	606-20-2	
Di-n-octylphthalate	<b>0.97 U</b>	ug/L	0.97	0.17	1	04/16/18 08:14	04/16/18 18:43	117-84-0	
bis(2-Ethylhexyl)phthalate	<b>0.16J</b>	ug/L	0.97	0.15	1	04/16/18 08:14	04/16/18 18:43	117-81-7	
Fluoranthene	<b>0.97 U</b>	ug/L	0.97	0.079	1	04/16/18 08:14	04/16/18 18:43	206-44-0	
Fluorene	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	86-73-7	
Hexachloro-1,3-butadiene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	87-68-3	
Hexachlorobenzene	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	118-74-1	
Hexachlorocyclopentadiene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	77-47-4	
Hexachloroethane	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	67-72-1	
Indeno(1,2,3-cd)pyrene	<b>0.97 U</b>	ug/L	0.97	0.30	1	04/16/18 08:14	04/16/18 18:43	193-39-5	
Isophorone	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	78-59-1	
1-Methylnaphthalene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	90-12-0	
2-Methylnaphthalene	<b>0.97 U</b>	ug/L	0.97	0.099	1	04/16/18 08:14	04/16/18 18:43	91-57-6	
2-Methylphenol(o-Cresol)	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	95-48-7	
3&4-Methylphenol(m&p Cresol)	<b>1.9 U</b>	ug/L	1.9	0.16	1	04/16/18 08:14	04/16/18 18:43		
Naphthalene	<b>0.97 U</b>	ug/L	0.97	0.10	1	04/16/18 08:14	04/16/18 18:43	91-20-3	
2-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	0.79	1	04/16/18 08:14	04/16/18 18:43	88-74-4	
3-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	0.92	1	04/16/18 08:14	04/16/18 18:43	99-09-2	
4-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	0.99	1	04/16/18 08:14	04/16/18 18:43	100-01-6	
Nitrobenzene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	98-95-3	
2-Nitrophenol	<b>0.97 U</b>	ug/L	0.97	0.13	1	04/16/18 08:14	04/16/18 18:43	88-75-5	
4-Nitrophenol	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	100-02-7	
N-Nitrosodimethylamine	<b>0.97 U</b>	ug/L	0.97	0.064	1	04/16/18 08:14	04/16/18 18:43	62-75-9	
N-Nitroso-di-n-propylamine	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	621-64-7	
N-Nitrosodiphenylamine	<b>0.97 U</b>	ug/L	0.97	0.12	1	04/16/18 08:14	04/16/18 18:43	86-30-6	
Pentachlorophenol	<b>2.4 U</b>	ug/L	2.4	0.82	1	04/16/18 08:14	04/16/18 18:43	87-86-5	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW4**      **Lab ID: 30249475004**      Collected: 04/12/18 10:40      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Phenanthrene	<b>0.97 U</b>	ug/L	0.97	0.16	1	04/16/18 08:14	04/16/18 18:43	85-01-8	
Phenol	<b>0.97 U</b>	ug/L	0.97	0.054	1	04/16/18 08:14	04/16/18 18:43	108-95-2	
Pyrene	<b>0.97 U</b>	ug/L	0.97	0.15	1	04/16/18 08:14	04/16/18 18:43	129-00-0	
1,2,4-Trichlorobenzene	<b>0.97 U</b>	ug/L	0.97	0.11	1	04/16/18 08:14	04/16/18 18:43	120-82-1	
2,4,5-Trichlorophenol	<b>2.4 U</b>	ug/L	2.4	0.80	1	04/16/18 08:14	04/16/18 18:43	95-95-4	
2,4,6-Trichlorophenol	<b>0.97 U</b>	ug/L	0.97	0.14	1	04/16/18 08:14	04/16/18 18:43	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	42	%	13-114		1	04/16/18 08:14	04/16/18 18:43	4165-60-0	
2-Fluorobiphenyl (S)	42	%	19-103		1	04/16/18 08:14	04/16/18 18:43	321-60-8	
Terphenyl-d14 (S)	63	%	14-124		1	04/16/18 08:14	04/16/18 18:43	1718-51-0	
Phenol-d6 (S)	15	%	10-113		1	04/16/18 08:14	04/16/18 18:43	13127-88-3	
2-Fluorophenol (S)	24	%	10-115		1	04/16/18 08:14	04/16/18 18:43	367-12-4	
2,4,6-Tribromophenol (S)	57	%	36-114		1	04/16/18 08:14	04/16/18 18:43	118-79-6	
<b>8260B MSV</b>			Analytical Method: EPA 8260B						
Acetone	<b>10.0 U</b>	ug/L	10.0	2.8	1		04/17/18 16:14	67-64-1	
Benzene	<b>1.0 U</b>	ug/L	1.0	0.24	1		04/17/18 16:14	71-43-2	
Bromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 16:14	74-97-5	
Bromodichloromethane	<b>1.0 U</b>	ug/L	1.0	0.29	1		04/17/18 16:14	75-27-4	
Bromoform	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 16:14	75-25-2	
Bromomethane	<b>1.0 U</b>	ug/L	1.0	0.49	1		04/17/18 16:14	74-83-9	
2-Butanone (MEK)	<b>10.0 U</b>	ug/L	10.0	2.1	1		04/17/18 16:14	78-93-3	
Carbon disulfide	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 16:14	75-15-0	
Carbon tetrachloride	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 16:14	56-23-5	
Chlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.15	1		04/17/18 16:14	108-90-7	
Chloroethane	<b>1.0 U</b>	ug/L	1.0	0.55	1		04/17/18 16:14	75-00-3	
Chloroform	<b>1.0 U</b>	ug/L	1.0	0.30	1		04/17/18 16:14	67-66-3	
Chloromethane	<b>1.0 U</b>	ug/L	1.0	0.68	1		04/17/18 16:14	74-87-3	
Dibromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.27	1		04/17/18 16:14	124-48-1	
1,2-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.50	1		04/17/18 16:14	95-50-1	
1,3-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.13	1		04/17/18 16:14	541-73-1	
1,4-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.20	1		04/17/18 16:14	106-46-7	
1,1-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.19	1		04/17/18 16:14	75-34-3	
1,2-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 16:14	107-06-2	
1,2-Dichloroethene (Total)	<b>2.0 U</b>	ug/L	2.0	0.41	1		04/17/18 16:14	540-59-0	
1,1-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 16:14	75-35-4	
cis-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.18	1		04/17/18 16:14	156-59-2	
trans-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.22	1		04/17/18 16:14	156-60-5	
1,2-Dichloropropane	<b>1.0 U</b>	ug/L	1.0	0.21	1		04/17/18 16:14	78-87-5	
cis-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 16:14	10061-01-5	
trans-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.26	1		04/17/18 16:14	10061-02-6	
Ethylbenzene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 16:14	100-41-4	
2-Hexanone	<b>10.0 U</b>	ug/L	10.0	0.66	1		04/17/18 16:14	591-78-6	
Methylene Chloride	<b>1.0 U</b>	ug/L	1.0	0.77	1		04/17/18 16:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	<b>10.0 U</b>	ug/L	10.0	0.37	1		04/17/18 16:14	108-10-1	
Methyl-tert-butyl ether	<b>1.0 U</b>	ug/L	1.0	0.23	1		04/17/18 16:14	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW4**      **Lab ID: 30249475004**      Collected: 04/12/18 10:40      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 16:14	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 16:14	79-34-5	
Tetrachloroethene	0.55J	ug/L	1.0	0.32	1		04/17/18 16:14	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 16:14	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 16:14	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 16:14	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 16:14	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.39	1		04/17/18 16:14	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 16:14	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 16:14	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 16:14	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 16:14	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	100	%	79-129		1		04/17/18 16:14	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120		1		04/17/18 16:14	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		04/17/18 16:14	2037-26-5	
Dibromofluoromethane (S)	104	%	80-120		1		04/17/18 16:14	1868-53-7	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW5**      **Lab ID: 30249475005**      Collected: 04/12/18 11:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP, Dissolved</b> Analytical Method: EPA 6010B      Preparation Method: EPA 3005A									
Aluminum, Dissolved	4740	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:36	7429-90-5	
Antimony, Dissolved	6.0 U	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:36	7440-36-0	
Arsenic, Dissolved	3.3J	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:36	7440-38-2	
Barium, Dissolved	128	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:36	7440-39-3	
Beryllium, Dissolved	2.6	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:36	7440-41-7	
Boron, Dissolved	939	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:36	7440-42-8	
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:36	7440-43-9	
Calcium, Dissolved	11700	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:36	7440-70-2	
Chromium, Dissolved	2.2J	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:36	7440-47-3	B
Cobalt, Dissolved	12.7	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:36	7440-48-4	
Copper, Dissolved	9.7	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:36	7440-50-8	
Iron, Dissolved	23000	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:36	7439-89-6	
Lead, Dissolved	7.5	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:36	7439-92-1	
Magnesium, Dissolved	13900	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:36	7439-95-4	
Manganese, Dissolved	15000	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:36	7439-96-5	
Molybdenum, Dissolved	20.0 U	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:36	7439-98-7	
Nickel, Dissolved	24.3	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:36	7440-02-0	
Potassium, Dissolved	14600	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:36	7440-09-7	
Selenium, Dissolved	8.0 U	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:36	7782-49-2	
Silver, Dissolved	6.0 U	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:36	7440-22-4	
Sodium, Dissolved	87500	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:36	7440-23-5	
Thallium, Dissolved	10.0 U	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:36	7440-28-0	
Vanadium, Dissolved	8.2	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:36	7440-62-2	
Zinc, Dissolved	68.2	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:36	7440-66-6	
<b>7470 Mercury, Dissolved</b> Analytical Method: EPA 7470A      Preparation Method: EPA 7470A									
Mercury, Dissolved	0.20 U	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:22	7439-97-6	
<b>8270D MSSV Organics</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Acenaphthene	0.98 U	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	83-32-9	
Acenaphthylene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	208-96-8	
Anthracene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	120-12-7	
Azobenzene	0.98 U	ug/L	0.98	0.16	1	04/16/18 08:14	04/16/18 19:05	103-33-3	N2
Benzo(a)anthracene	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	56-55-3	
Benzo(a)pyrene	0.98 U	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	50-32-8	
Benzo(b)fluoranthene	0.98 U	ug/L	0.98	0.22	1	04/16/18 08:14	04/16/18 19:05	205-99-2	
Benzo(g,h,i)perylene	0.98 U	ug/L	0.98	0.35	1	04/16/18 08:14	04/16/18 19:05	191-24-2	
Benzo(k)fluoranthene	0.98 U	ug/L	0.98	0.090	1	04/16/18 08:14	04/16/18 19:05	207-08-9	
Benzoic acid	0.39J	ug/L	24.4	0.25	1	04/16/18 08:14	04/16/18 19:05	65-85-0	
Benzyl alcohol	0.98 U	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	100-51-6	
4-Bromophenylphenyl ether	0.98 U	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 19:05	101-55-3	
Butylbenzylphthalate	0.48J	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 19:05	85-68-7	
Carbazole	0.98 U	ug/L	0.98	0.32	1	04/16/18 08:14	04/16/18 19:05	86-74-8	
4-Chloro-3-methylphenol	0.98 U	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 19:05	59-50-7	
4-Chloroaniline	0.98 U	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 19:05	106-47-8	
bis(2-Chloroethoxy)methane	0.98 U	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 19:05	111-91-1	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW5**      **Lab ID: 30249475005**      Collected: 04/12/18 11:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 19:05	111-44-4	
bis(2-Chloroisopropyl) ether	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	108-60-1	
2-Chloronaphthalene	<b>0.98 U</b>	ug/L	0.98	0.099	1	04/16/18 08:14	04/16/18 19:05	91-58-7	
2-Chlorophenol	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	95-57-8	
4-Chlorophenylphenyl ether	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	7005-72-3	
Chrysene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	218-01-9	
Dibenz(a,h)anthracene	<b>0.98 U</b>	ug/L	0.98	0.30	1	04/16/18 08:14	04/16/18 19:05	53-70-3	
Dibenzofuran	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	132-64-9	
1,2-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.095	1	04/16/18 08:14	04/16/18 19:05	95-50-1	
1,3-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	541-73-1	
1,4-Dichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.099	1	04/16/18 08:14	04/16/18 19:05	106-46-7	
3,3'-Dichlorobenzidine	<b>0.98 U</b>	ug/L	0.98	0.17	1	04/16/18 08:14	04/16/18 19:05	91-94-1	
2,4-Dichlorophenol	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	120-83-2	
Diethylphthalate	<b>0.98 U</b>	ug/L	0.98	0.18	1	04/16/18 08:14	04/16/18 19:05	84-66-2	
2,4-Dimethylphenol	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	105-67-9	
Dimethylphthalate	<b>0.98 U</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 19:05	131-11-3	
Di-n-butylphthalate	<b>0.98 U</b>	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 19:05	84-74-2	
4,6-Dinitro-2-methylphenol	<b>2.4 U</b>	ug/L	2.4	0.79	1	04/16/18 08:14	04/16/18 19:05	534-52-1	
2,4-Dinitrophenol	<b>2.4 U</b>	ug/L	2.4	0.71	1	04/16/18 08:14	04/16/18 19:05	51-28-5	
2,4-Dinitrotoluene	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	121-14-2	
2,6-Dinitrotoluene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	606-20-2	
Di-n-octylphthalate	<b>0.98 U</b>	ug/L	0.98	0.17	1	04/16/18 08:14	04/16/18 19:05	117-84-0	
bis(2-Ethylhexyl)phthalate	<b>0.28J</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 19:05	117-81-7	
Fluoranthene	<b>0.98 U</b>	ug/L	0.98	0.079	1	04/16/18 08:14	04/16/18 19:05	206-44-0	
Fluorene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	86-73-7	
Hexachloro-1,3-butadiene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	87-68-3	
Hexachlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	118-74-1	
Hexachlorocyclopentadiene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	77-47-4	
Hexachloroethane	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	67-72-1	
Indeno(1,2,3-cd)pyrene	<b>0.98 U</b>	ug/L	0.98	0.30	1	04/16/18 08:14	04/16/18 19:05	193-39-5	
Isophorone	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	78-59-1	
1-Methylnaphthalene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	90-12-0	
2-Methylnaphthalene	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 19:05	91-57-6	
2-Methylphenol(o-Cresol)	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	95-48-7	
3&4-Methylphenol(m&p Cresol)	<b>2.0 U</b>	ug/L	2.0	0.16	1	04/16/18 08:14	04/16/18 19:05		
Naphthalene	<b>0.98 U</b>	ug/L	0.98	0.10	1	04/16/18 08:14	04/16/18 19:05	91-20-3	
2-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	0.80	1	04/16/18 08:14	04/16/18 19:05	88-74-4	
3-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	0.93	1	04/16/18 08:14	04/16/18 19:05	99-09-2	
4-Nitroaniline	<b>2.4 U</b>	ug/L	2.4	1.0	1	04/16/18 08:14	04/16/18 19:05	100-01-6	
Nitrobenzene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	98-95-3	
2-Nitrophenol	<b>0.98 U</b>	ug/L	0.98	0.13	1	04/16/18 08:14	04/16/18 19:05	88-75-5	
4-Nitrophenol	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	100-02-7	
N-Nitrosodimethylamine	<b>0.98 U</b>	ug/L	0.98	0.064	1	04/16/18 08:14	04/16/18 19:05	62-75-9	
N-Nitroso-di-n-propylamine	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	621-64-7	
N-Nitrosodiphenylamine	<b>0.98 U</b>	ug/L	0.98	0.12	1	04/16/18 08:14	04/16/18 19:05	86-30-6	
Pentachlorophenol	<b>2.4 U</b>	ug/L	2.4	0.83	1	04/16/18 08:14	04/16/18 19:05	87-86-5	

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## ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

**Sample: MW5**      **Lab ID: 30249475005**      Collected: 04/12/18 11:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Phenanthrene	<b>0.98 U</b>	ug/L	0.98	0.16	1	04/16/18 08:14	04/16/18 19:05	85-01-8	
Phenol	<b>0.98 U</b>	ug/L	0.98	0.055	1	04/16/18 08:14	04/16/18 19:05	108-95-2	
Pyrene	<b>0.98 U</b>	ug/L	0.98	0.15	1	04/16/18 08:14	04/16/18 19:05	129-00-0	
1,2,4-Trichlorobenzene	<b>0.98 U</b>	ug/L	0.98	0.11	1	04/16/18 08:14	04/16/18 19:05	120-82-1	
2,4,5-Trichlorophenol	<b>2.4 U</b>	ug/L	2.4	0.80	1	04/16/18 08:14	04/16/18 19:05	95-95-4	
2,4,6-Trichlorophenol	<b>0.98 U</b>	ug/L	0.98	0.14	1	04/16/18 08:14	04/16/18 19:05	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	29	%	13-114		1	04/16/18 08:14	04/16/18 19:05	4165-60-0	
2-Fluorobiphenyl (S)	34	%	19-103		1	04/16/18 08:14	04/16/18 19:05	321-60-8	
Terphenyl-d14 (S)	46	%	14-124		1	04/16/18 08:14	04/16/18 19:05	1718-51-0	
Phenol-d6 (S)	12	%	10-113		1	04/16/18 08:14	04/16/18 19:05	13127-88-3	
2-Fluorophenol (S)	18	%	10-115		1	04/16/18 08:14	04/16/18 19:05	367-12-4	
2,4,6-Tribromophenol (S)	53	%	36-114		1	04/16/18 08:14	04/16/18 19:05	118-79-6	
<b>8260B MSV</b>			Analytical Method: EPA 8260B						
Acetone	<b>10.0 U</b>	ug/L	10.0	2.8	1		04/17/18 16:39	67-64-1	
Benzene	<b>1.0 U</b>	ug/L	1.0	0.24	1		04/17/18 16:39	71-43-2	
Bromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 16:39	74-97-5	
Bromodichloromethane	<b>1.0 U</b>	ug/L	1.0	0.29	1		04/17/18 16:39	75-27-4	
Bromoform	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 16:39	75-25-2	
Bromomethane	<b>1.0 U</b>	ug/L	1.0	0.49	1		04/17/18 16:39	74-83-9	
2-Butanone (MEK)	<b>10.0 U</b>	ug/L	10.0	2.1	1		04/17/18 16:39	78-93-3	
Carbon disulfide	<b>1.0 U</b>	ug/L	1.0	0.32	1		04/17/18 16:39	75-15-0	
Carbon tetrachloride	<b>1.0 U</b>	ug/L	1.0	0.34	1		04/17/18 16:39	56-23-5	
Chlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.15	1		04/17/18 16:39	108-90-7	
Chloroethane	<b>1.0 U</b>	ug/L	1.0	0.55	1		04/17/18 16:39	75-00-3	
Chloroform	<b>1.0 U</b>	ug/L	1.0	0.30	1		04/17/18 16:39	67-66-3	
Chloromethane	<b>1.0 U</b>	ug/L	1.0	0.68	1		04/17/18 16:39	74-87-3	
Dibromochloromethane	<b>1.0 U</b>	ug/L	1.0	0.27	1		04/17/18 16:39	124-48-1	
1,2-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.50	1		04/17/18 16:39	95-50-1	
1,3-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.13	1		04/17/18 16:39	541-73-1	
1,4-Dichlorobenzene	<b>1.0 U</b>	ug/L	1.0	0.20	1		04/17/18 16:39	106-46-7	
1,1-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.19	1		04/17/18 16:39	75-34-3	
1,2-Dichloroethane	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 16:39	107-06-2	
1,2-Dichloroethene (Total)	<b>2.0 U</b>	ug/L	2.0	0.41	1		04/17/18 16:39	540-59-0	
1,1-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 16:39	75-35-4	
cis-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.18	1		04/17/18 16:39	156-59-2	
trans-1,2-Dichloroethene	<b>1.0 U</b>	ug/L	1.0	0.22	1		04/17/18 16:39	156-60-5	
1,2-Dichloropropane	<b>1.0 U</b>	ug/L	1.0	0.21	1		04/17/18 16:39	78-87-5	
cis-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.25	1		04/17/18 16:39	10061-01-5	
trans-1,3-Dichloropropene	<b>1.0 U</b>	ug/L	1.0	0.26	1		04/17/18 16:39	10061-02-6	
Ethylbenzene	<b>1.0 U</b>	ug/L	1.0	0.31	1		04/17/18 16:39	100-41-4	
2-Hexanone	<b>10.0 U</b>	ug/L	10.0	0.66	1		04/17/18 16:39	591-78-6	
Methylene Chloride	<b>1.0 U</b>	ug/L	1.0	0.77	1		04/17/18 16:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	<b>10.0 U</b>	ug/L	10.0	0.37	1		04/17/18 16:39	108-10-1	
Methyl-tert-butyl ether	<b>0.46J</b>	ug/L	1.0	0.23	1		04/17/18 16:39	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW5**      **Lab ID: 30249475005**      Collected: 04/12/18 11:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 16:39	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 16:39	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.32	1		04/17/18 16:39	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 16:39	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 16:39	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 16:39	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 16:39	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.39	1		04/17/18 16:39	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 16:39	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 16:39	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 16:39	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 16:39	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	103	%	79-129		1		04/17/18 16:39	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120		1		04/17/18 16:39	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		04/17/18 16:39	2037-26-5	
Dibromofluoromethane (S)	102	%	80-120		1		04/17/18 16:39	1868-53-7	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW6**      **Lab ID: 30249475006**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP, Dissolved</b>			Analytical Method: EPA 6010B    Preparation Method: EPA 3005A						
Aluminum, Dissolved	<b>84.9</b>	ug/L	50.0	14.1	1	04/16/18 17:17	04/17/18 12:39	7429-90-5	
Antimony, Dissolved	<b>6.0 U</b>	ug/L	6.0	3.4	1	04/16/18 17:17	04/17/18 12:39	7440-36-0	
Arsenic, Dissolved	<b>5.0 U</b>	ug/L	5.0	2.7	1	04/16/18 17:17	04/17/18 12:39	7440-38-2	
Barium, Dissolved	<b>39.0</b>	ug/L	10.0	0.76	1	04/16/18 17:17	04/17/18 12:39	7440-39-3	
Beryllium, Dissolved	<b>1.0 U</b>	ug/L	1.0	0.24	1	04/16/18 17:17	04/17/18 12:39	7440-41-7	
Boron, Dissolved	<b>6440</b>	ug/L	50.0	1.4	1	04/16/18 17:17	04/17/18 12:39	7440-42-8	
Cadmium, Dissolved	<b>3.0 U</b>	ug/L	3.0	0.87	1	04/16/18 17:17	04/17/18 12:39	7440-43-9	
Calcium, Dissolved	<b>65400</b>	ug/L	1000	20.3	1	04/16/18 17:17	04/17/18 12:39	7440-70-2	
Chromium, Dissolved	<b>5.0J</b>	ug/L	5.0	0.86	1	04/16/18 17:17	04/17/18 12:39	7440-47-3	B
Cobalt, Dissolved	<b>5.0 U</b>	ug/L	5.0	0.93	1	04/16/18 17:17	04/17/18 12:39	7440-48-4	
Copper, Dissolved	<b>5.0 U</b>	ug/L	5.0	3.3	1	04/16/18 17:17	04/17/18 12:39	7440-50-8	
Iron, Dissolved	<b>486</b>	ug/L	70.0	7.1	1	04/16/18 17:17	04/17/18 12:39	7439-89-6	
Lead, Dissolved	<b>5.0 U</b>	ug/L	5.0	1.8	1	04/16/18 17:17	04/17/18 12:39	7439-92-1	
Magnesium, Dissolved	<b>21900</b>	ug/L	200	22.2	1	04/16/18 17:17	04/17/18 12:39	7439-95-4	
Manganese, Dissolved	<b>46.5</b>	ug/L	5.0	0.77	1	04/16/18 17:17	04/17/18 12:39	7439-96-5	
Molybdenum, Dissolved	<b>20.0 U</b>	ug/L	20.0	2.0	1	04/16/18 17:17	04/17/18 12:39	7439-98-7	
Nickel, Dissolved	<b>1.5J</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:39	7440-02-0	
Potassium, Dissolved	<b>2680</b>	ug/L	500	36.0	1	04/16/18 17:17	04/17/18 12:39	7440-09-7	
Selenium, Dissolved	<b>8.0 U</b>	ug/L	8.0	4.8	1	04/16/18 17:17	04/17/18 12:39	7782-49-2	
Silver, Dissolved	<b>6.0 U</b>	ug/L	6.0	0.99	1	04/16/18 17:17	04/17/18 12:39	7440-22-4	
Sodium, Dissolved	<b>183000</b>	ug/L	1000	434	1	04/16/18 17:17	04/17/18 12:39	7440-23-5	
Thallium, Dissolved	<b>10.0 U</b>	ug/L	10.0	2.2	1	04/16/18 17:17	04/17/18 12:39	7440-28-0	
Vanadium, Dissolved	<b>0.82J</b>	ug/L	5.0	0.47	1	04/16/18 17:17	04/17/18 12:39	7440-62-2	
Zinc, Dissolved	<b>3.4J</b>	ug/L	10.0	1.0	1	04/16/18 17:17	04/17/18 12:39	7440-66-6	
<b>7470 Mercury, Dissolved</b>			Analytical Method: EPA 7470A    Preparation Method: EPA 7470A						
Mercury, Dissolved	<b>0.20 U</b>	ug/L	0.20	0.030	1	04/16/18 09:13	04/16/18 15:23	7439-97-6	
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Acenaphthene	<b>1.0 U</b>	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	83-32-9	
Acenaphthylene	<b>1.0 U</b>	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	208-96-8	
Anthracene	<b>1.0 U</b>	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	120-12-7	
Azobenzene	<b>1.0 U</b>	ug/L	1.0	0.16	1	04/16/18 08:14	04/16/18 19:27	103-33-3	N2
Benzo(a)anthracene	<b>1.0 U</b>	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	56-55-3	
Benzo(a)pyrene	<b>1.0 U</b>	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	50-32-8	
Benzo(b)fluoranthene	<b>1.0 U</b>	ug/L	1.0	0.24	1	04/16/18 08:14	04/16/18 19:27	205-99-2	
Benzo(g,h,i)perylene	<b>1.0 U</b>	ug/L	1.0	0.37	1	04/16/18 08:14	04/16/18 19:27	191-24-2	R1
Benzo(k)fluoranthene	<b>1.0 U</b>	ug/L	1.0	0.095	1	04/16/18 08:14	04/16/18 19:27	207-08-9	
Benzoic acid	<b>0.52J</b>	ug/L	25.8	0.27	1	04/16/18 08:14	04/16/18 19:27	65-85-0	
Benzyl alcohol	<b>1.0 U</b>	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	100-51-6	
4-Bromophenylphenyl ether	<b>1.0 U</b>	ug/L	1.0	0.16	1	04/16/18 08:14	04/16/18 19:27	101-55-3	
Butylbenzylphthalate	<b>0.51J</b>	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	85-68-7	
Carbazole	<b>1.0 U</b>	ug/L	1.0	0.33	1	04/16/18 08:14	04/16/18 19:27	86-74-8	R1
4-Chloro-3-methylphenol	<b>1.0 U</b>	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	59-50-7	
4-Chloroaniline	<b>1.0 U</b>	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	106-47-8	
bis(2-Chloroethoxy)methane	<b>1.0 U</b>	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	111-91-1	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW6**      **Lab ID: 30249475006**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
bis(2-Chloroethyl) ether	1.0 U	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	111-44-4	
bis(2-Chloroisopropyl) ether	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	108-60-1	
2-Chloronaphthalene	1.0 U	ug/L	1.0	0.10	1	04/16/18 08:14	04/16/18 19:27	91-58-7	
2-Chlorophenol	1.0 U	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	95-57-8	
4-Chlorophenylphenyl ether	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	7005-72-3	
Chrysene	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	218-01-9	
Dibenz(a,h)anthracene	1.0 U	ug/L	1.0	0.31	1	04/16/18 08:14	04/16/18 19:27	53-70-3	R1
Dibenzofuran	1.0 U	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	132-64-9	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.10	1	04/16/18 08:14	04/16/18 19:27	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.10	1	04/16/18 08:14	04/16/18 19:27	106-46-7	
3,3'-Dichlorobenzidine	1.0 U	ug/L	1.0	0.18	1	04/16/18 08:14	04/16/18 19:27	91-94-1	ML
2,4-Dichlorophenol	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	120-83-2	
Diethylphthalate	1.0 U	ug/L	1.0	0.19	1	04/16/18 08:14	04/16/18 19:27	84-66-2	
2,4-Dimethylphenol	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	105-67-9	
Dimethylphthalate	1.0 U	ug/L	1.0	0.16	1	04/16/18 08:14	04/16/18 19:27	131-11-3	
Di-n-butylphthalate	1.0 U	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	84-74-2	
4,6-Dinitro-2-methylphenol	2.6 U	ug/L	2.6	0.84	1	04/16/18 08:14	04/16/18 19:27	534-52-1	
2,4-Dinitrophenol	2.6 U	ug/L	2.6	0.75	1	04/16/18 08:14	04/16/18 19:27	51-28-5	
2,4-Dinitrotoluene	1.0 U	ug/L	1.0	0.13	1	04/16/18 08:14	04/16/18 19:27	121-14-2	
2,6-Dinitrotoluene	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	606-20-2	
Di-n-octylphthalate	1.0 U	ug/L	1.0	0.18	1	04/16/18 08:14	04/16/18 19:27	117-84-0	
bis(2-Ethylhexyl)phthalate	0.91J	ug/L	1.0	0.16	1	04/16/18 08:14	04/16/18 19:27	117-81-7	
Fluoranthene	1.0 U	ug/L	1.0	0.084	1	04/16/18 08:14	04/16/18 19:27	206-44-0	
Fluorene	1.0 U	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	86-73-7	
Hexachloro-1,3-butadiene	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	87-68-3	
Hexachlorobenzene	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	118-74-1	
Hexachlorocyclopentadiene	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	77-47-4	
Hexachloroethane	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	67-72-1	
Indeno(1,2,3-cd)pyrene	1.0 U	ug/L	1.0	0.31	1	04/16/18 08:14	04/16/18 19:27	193-39-5	
Isophorone	1.0 U	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	78-59-1	
1-Methylnaphthalene	1.0 U	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	90-12-0	
2-Methylnaphthalene	1.0 U	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	91-57-6	
2-Methylphenol(o-Cresol)	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	95-48-7	
3&4-Methylphenol(m&p Cresol)	2.1 U	ug/L	2.1	0.17	1	04/16/18 08:14	04/16/18 19:27		
Naphthalene	1.0 U	ug/L	1.0	0.11	1	04/16/18 08:14	04/16/18 19:27	91-20-3	
2-Nitroaniline	2.6 U	ug/L	2.6	0.84	1	04/16/18 08:14	04/16/18 19:27	88-74-4	
3-Nitroaniline	2.6 U	ug/L	2.6	0.98	1	04/16/18 08:14	04/16/18 19:27	99-09-2	
4-Nitroaniline	2.6 U	ug/L	2.6	1.1	1	04/16/18 08:14	04/16/18 19:27	100-01-6	
Nitrobenzene	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	98-95-3	
2-Nitrophenol	1.0 U	ug/L	1.0	0.14	1	04/16/18 08:14	04/16/18 19:27	88-75-5	
4-Nitrophenol	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	100-02-7	R1
N-Nitrosodimethylamine	1.0 U	ug/L	1.0	0.068	1	04/16/18 08:14	04/16/18 19:27	62-75-9	
N-Nitroso-di-n-propylamine	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	621-64-7	
N-Nitrosodiphenylamine	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	86-30-6	
Pentachlorophenol	2.6 U	ug/L	2.6	0.87	1	04/16/18 08:14	04/16/18 19:27	87-86-5	

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## ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW6**      **Lab ID: 30249475006**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270D MSSV Organics</b>			Analytical Method: EPA 8270D    Preparation Method: EPA 3510C						
Phenanthrene	1.0 U	ug/L	1.0	0.17	1	04/16/18 08:14	04/16/18 19:27	85-01-8	
Phenol	1.0 U	ug/L	1.0	0.058	1	04/16/18 08:14	04/16/18 19:27	108-95-2	
Pyrene	1.0 U	ug/L	1.0	0.16	1	04/16/18 08:14	04/16/18 19:27	129-00-0	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.12	1	04/16/18 08:14	04/16/18 19:27	120-82-1	
2,4,5-Trichlorophenol	2.6 U	ug/L	2.6	0.84	1	04/16/18 08:14	04/16/18 19:27	95-95-4	
2,4,6-Trichlorophenol	1.0 U	ug/L	1.0	0.15	1	04/16/18 08:14	04/16/18 19:27	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	40	%	13-114		1	04/16/18 08:14	04/16/18 19:27	4165-60-0	
2-Fluorobiphenyl (S)	41	%	19-103		1	04/16/18 08:14	04/16/18 19:27	321-60-8	
Terphenyl-d14 (S)	51	%	14-124		1	04/16/18 08:14	04/16/18 19:27	1718-51-0	
Phenol-d6 (S)	16	%	10-113		1	04/16/18 08:14	04/16/18 19:27	13127-88-3	
2-Fluorophenol (S)	25	%	10-115		1	04/16/18 08:14	04/16/18 19:27	367-12-4	
2,4,6-Tribromophenol (S)	52	%	36-114		1	04/16/18 08:14	04/16/18 19:27	118-79-6	
<b>8260B MSV</b>			Analytical Method: EPA 8260B						
Acetone	10.0 U	ug/L	10.0	2.8	1		04/17/18 17:54	67-64-1	
Benzene	1.0 U	ug/L	1.0	0.24	1		04/17/18 17:54	71-43-2	
Bromochloromethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 17:54	74-97-5	
Bromodichloromethane	1.0 U	ug/L	1.0	0.29	1		04/17/18 17:54	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.32	1		04/17/18 17:54	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.49	1		04/17/18 17:54	74-83-9	
2-Butanone (MEK)	10.0 U	ug/L	10.0	2.1	1		04/17/18 17:54	78-93-3	
Carbon disulfide	1.0 U	ug/L	1.0	0.32	1		04/17/18 17:54	75-15-0	
Carbon tetrachloride	1.0 U	ug/L	1.0	0.34	1		04/17/18 17:54	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.15	1		04/17/18 17:54	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.55	1		04/17/18 17:54	75-00-3	
Chloroform	1.0 U	ug/L	1.0	0.30	1		04/17/18 17:54	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.68	1		04/17/18 17:54	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.27	1		04/17/18 17:54	124-48-1	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.50	1		04/17/18 17:54	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.13	1		04/17/18 17:54	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.20	1		04/17/18 17:54	106-46-7	
1,1-Dichloroethane	0.42J	ug/L	1.0	0.19	1		04/17/18 17:54	75-34-3	
1,2-Dichloroethane	0.34J	ug/L	1.0	0.25	1		04/17/18 17:54	107-06-2	
1,2-Dichloroethene (Total)	15.3	ug/L	2.0	0.41	1		04/17/18 17:54	540-59-0	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.31	1		04/17/18 17:54	75-35-4	
cis-1,2-Dichloroethene	15.3	ug/L	1.0	0.18	1		04/17/18 17:54	156-59-2	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.22	1		04/17/18 17:54	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.21	1		04/17/18 17:54	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.25	1		04/17/18 17:54	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.26	1		04/17/18 17:54	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.31	1		04/17/18 17:54	100-41-4	
2-Hexanone	10.0 U	ug/L	10.0	0.66	1		04/17/18 17:54	591-78-6	
Methylene Chloride	1.0 U	ug/L	1.0	0.77	1		04/17/18 17:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	10.0 U	ug/L	10.0	0.37	1		04/17/18 17:54	108-10-1	
Methyl-tert-butyl ether	0.49J	ug/L	1.0	0.23	1		04/17/18 17:54	1634-04-4	

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### ANALYTICAL RESULTS

Project: Springfield Twp

Pace Project No.: 30249475

**Sample: MW6**      **Lab ID: 30249475006**      Collected: 04/12/18 12:15      Received: 04/13/18 23:15      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>									
Analytical Method: EPA 8260B									
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 17:54	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 17:54	79-34-5	
Tetrachloroethene	8.0	ug/L	1.0	0.32	1		04/17/18 17:54	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 17:54	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 17:54	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 17:54	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 17:54	79-00-5	
Trichloroethene	66.6	ug/L	1.0	0.39	1		04/17/18 17:54	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 17:54	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 17:54	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 17:54	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 17:54	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	98	%	79-129		1		04/17/18 17:54	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120		1		04/17/18 17:54	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		04/17/18 17:54	2037-26-5	
Dibromofluoromethane (S)	102	%	80-120		1		04/17/18 17:54	1868-53-7	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

Sample: Trip Blank									
Lab ID: 30249475008 Collected: 04/12/18 00:01 Received: 04/13/18 23:15 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b> Analytical Method: EPA 8260B									
Acetone	10.0 U	ug/L	10.0	2.8	1		04/17/18 15:23	67-64-1	
Benzene	1.0 U	ug/L	1.0	0.24	1		04/17/18 15:23	71-43-2	
Bromochloromethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:23	74-97-5	
Bromodichloromethane	1.0 U	ug/L	1.0	0.29	1		04/17/18 15:23	75-27-4	
Bromoform	1.0 U	ug/L	1.0	0.32	1		04/17/18 15:23	75-25-2	
Bromomethane	1.0 U	ug/L	1.0	0.49	1		04/17/18 15:23	74-83-9	
2-Butanone (MEK)	10.0 U	ug/L	10.0	2.1	1		04/17/18 15:23	78-93-3	
Carbon disulfide	1.0 U	ug/L	1.0	0.32	1		04/17/18 15:23	75-15-0	
Carbon tetrachloride	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:23	56-23-5	
Chlorobenzene	1.0 U	ug/L	1.0	0.15	1		04/17/18 15:23	108-90-7	
Chloroethane	1.0 U	ug/L	1.0	0.55	1		04/17/18 15:23	75-00-3	
Chloroform	1.0 U	ug/L	1.0	0.30	1		04/17/18 15:23	67-66-3	
Chloromethane	1.0 U	ug/L	1.0	0.68	1		04/17/18 15:23	74-87-3	
Dibromochloromethane	1.0 U	ug/L	1.0	0.27	1		04/17/18 15:23	124-48-1	
1,2-Dichlorobenzene	1.0 U	ug/L	1.0	0.50	1		04/17/18 15:23	95-50-1	
1,3-Dichlorobenzene	1.0 U	ug/L	1.0	0.13	1		04/17/18 15:23	541-73-1	
1,4-Dichlorobenzene	1.0 U	ug/L	1.0	0.20	1		04/17/18 15:23	106-46-7	
1,1-Dichloroethane	1.0 U	ug/L	1.0	0.19	1		04/17/18 15:23	75-34-3	
1,2-Dichloroethane	1.0 U	ug/L	1.0	0.25	1		04/17/18 15:23	107-06-2	
1,2-Dichloroethene (Total)	2.0 U	ug/L	2.0	0.41	1		04/17/18 15:23	540-59-0	
1,1-Dichloroethene	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:23	75-35-4	
cis-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.18	1		04/17/18 15:23	156-59-2	
trans-1,2-Dichloroethene	1.0 U	ug/L	1.0	0.22	1		04/17/18 15:23	156-60-5	
1,2-Dichloropropane	1.0 U	ug/L	1.0	0.21	1		04/17/18 15:23	78-87-5	
cis-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.25	1		04/17/18 15:23	10061-01-5	
trans-1,3-Dichloropropene	1.0 U	ug/L	1.0	0.26	1		04/17/18 15:23	10061-02-6	
Ethylbenzene	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:23	100-41-4	
2-Hexanone	10.0 U	ug/L	10.0	0.66	1		04/17/18 15:23	591-78-6	
Methylene Chloride	2.0	ug/L	1.0	0.77	1		04/17/18 15:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	10.0 U	ug/L	10.0	0.37	1		04/17/18 15:23	108-10-1	
Methyl-tert-butyl ether	1.0 U	ug/L	1.0	0.23	1		04/17/18 15:23	1634-04-4	
Styrene	1.0 U	ug/L	1.0	0.17	1		04/17/18 15:23	100-42-5	
1,1,2,2-Tetrachloroethane	1.0 U	ug/L	1.0	0.34	1		04/17/18 15:23	79-34-5	
Tetrachloroethene	1.0 U	ug/L	1.0	0.32	1		04/17/18 15:23	127-18-4	
Toluene	1.0 U	ug/L	1.0	0.30	1		04/17/18 15:23	108-88-3	
1,2,4-Trichlorobenzene	1.0 U	ug/L	1.0	0.14	1		04/17/18 15:23	120-82-1	
1,1,1-Trichloroethane	1.0 U	ug/L	1.0	0.28	1		04/17/18 15:23	71-55-6	
1,1,2-Trichloroethane	1.0 U	ug/L	1.0	0.20	1		04/17/18 15:23	79-00-5	
Trichloroethene	1.0 U	ug/L	1.0	0.39	1		04/17/18 15:23	79-01-6	
Vinyl chloride	1.0 U	ug/L	1.0	0.31	1		04/17/18 15:23	75-01-4	
Xylene (Total)	3.0 U	ug/L	3.0	0.78	1		04/17/18 15:23	1330-20-7	
m&p-Xylene	2.0 U	ug/L	2.0	0.60	1		04/17/18 15:23	179601-23-1	
o-Xylene	1.0 U	ug/L	1.0	0.18	1		04/17/18 15:23	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	100	%	79-129		1		04/17/18 15:23	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	80-120		1		04/17/18 15:23	17060-07-0	

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### ANALYTICAL RESULTS

Project: Springfield Twp  
Pace Project No.: 30249475

Sample: Trip Blank		Lab ID: 30249475008		Collected: 04/12/18 00:01	Received: 04/13/18 23:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260B MSV</b>		Analytical Method: EPA 8260B							
<b>Surrogates</b>									
Toluene-d8 (S)	97	%	80-120		1		04/17/18 15:23	2037-26-5	
Dibromofluoromethane (S)	104	%	80-120		1		04/17/18 15:23	1868-53-7	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

QC Batch: 294731 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury Dissolved  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

METHOD BLANK: 1443351 Matrix: Water  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	0.20 U	0.20	0.030	04/16/18 15:03	

LABORATORY CONTROL SAMPLE: 1443352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	0.89	89	80-120	

MATRIX SPIKE SAMPLE: 1443354

Parameter	Units	30249475001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	0.20 U	2.5	2.3	92	75-125	

SAMPLE DUPLICATE: 1443353

Parameter	Units	30249475001 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: Springfield Twp  
Pace Project No.: 30249475

QC Batch: 294851 Analysis Method: EPA 6010B  
QC Batch Method: EPA 3005A Analysis Description: 6010 MET Dissolved  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

METHOD BLANK: 1443790 Matrix: Water  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	50.0 U	50.0	14.1	04/17/18 12:08	
Antimony, Dissolved	ug/L	6.0 U	6.0	3.4	04/17/18 12:08	
Arsenic, Dissolved	ug/L	5.0 U	5.0	2.7	04/17/18 12:08	
Barium, Dissolved	ug/L	10.0 U	10.0	0.76	04/17/18 12:08	
Beryllium, Dissolved	ug/L	1.0 U	1.0	0.24	04/17/18 12:08	
Boron, Dissolved	ug/L	50.0 U	50.0	1.4	04/17/18 12:08	
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.87	04/17/18 12:08	
Calcium, Dissolved	ug/L	1000 U	1000	20.3	04/17/18 12:08	
Chromium, Dissolved	ug/L	0.95J	5.0	0.86	04/17/18 12:08	
Cobalt, Dissolved	ug/L	5.0 U	5.0	0.93	04/17/18 12:08	
Copper, Dissolved	ug/L	5.0 U	5.0	3.3	04/17/18 12:08	
Iron, Dissolved	ug/L	20.1J	70.0	7.1	04/17/18 12:08	
Lead, Dissolved	ug/L	5.0 U	5.0	1.8	04/17/18 12:08	
Magnesium, Dissolved	ug/L	200 U	200	22.2	04/17/18 12:08	
Manganese, Dissolved	ug/L	5.0 U	5.0	0.77	04/17/18 12:08	
Molybdenum, Dissolved	ug/L	20.0 U	20.0	2.0	04/17/18 12:08	
Nickel, Dissolved	ug/L	10.0 U	10.0	1.0	04/17/18 12:08	
Potassium, Dissolved	ug/L	500 U	500	36.0	04/17/18 12:08	
Selenium, Dissolved	ug/L	8.0 U	8.0	4.8	04/17/18 12:08	
Silver, Dissolved	ug/L	6.0 U	6.0	0.99	04/17/18 12:08	
Sodium, Dissolved	ug/L	1000 U	1000	434	04/17/18 12:08	
Thallium, Dissolved	ug/L	10.0 U	10.0	2.2	04/17/18 12:08	
Vanadium, Dissolved	ug/L	5.0 U	5.0	0.47	04/17/18 12:08	
Zinc, Dissolved	ug/L	10.0 U	10.0	1.0	04/17/18 12:08	

LABORATORY CONTROL SAMPLE: 1443791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	5000	4700	94	80-120	
Antimony, Dissolved	ug/L	500	468	94	80-120	
Arsenic, Dissolved	ug/L	500	458	92	80-120	
Barium, Dissolved	ug/L	500	475	95	80-120	
Beryllium, Dissolved	ug/L	500	476	95	80-120	
Boron, Dissolved	ug/L	500	470	94	80-120	
Cadmium, Dissolved	ug/L	500	475	95	80-120	
Calcium, Dissolved	ug/L	5000	4750	95	80-120	
Chromium, Dissolved	ug/L	500	472	94	80-120	
Cobalt, Dissolved	ug/L	500	453	91	80-120	
Copper, Dissolved	ug/L	500	478	96	80-120	
Iron, Dissolved	ug/L	5000	4720	94	80-120	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

LABORATORY CONTROL SAMPLE: 1443791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	500	452	90	80-120	
Magnesium, Dissolved	ug/L	5000	4680	94	80-120	
Manganese, Dissolved	ug/L	500	469	94	80-120	
Molybdenum, Dissolved	ug/L	500	455	91	80-120	
Nickel, Dissolved	ug/L	500	478	96	80-120	
Potassium, Dissolved	ug/L	5000	4670	93	80-120	
Selenium, Dissolved	ug/L	500	479	96	80-120	
Silver, Dissolved	ug/L	250	239	96	80-120	
Sodium, Dissolved	ug/L	5000	4660	93	80-120	
Thallium, Dissolved	ug/L	500	450	90	80-120	
Vanadium, Dissolved	ug/L	500	463	93	80-120	
Zinc, Dissolved	ug/L	500	476	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1443793 1443794

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		30249345001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Aluminum, Dissolved	ug/L	ND	5000	5000	5150	5210	103	104	75-125	1	20	
Antimony, Dissolved	ug/L	ND	500	500	512	514	102	103	75-125	1	20	
Arsenic, Dissolved	ug/L	ND	500	500	506	506	101	101	75-125	0	20	
Barium, Dissolved	ug/L	31.5	500	500	551	555	104	105	75-125	1	20	
Beryllium, Dissolved	ug/L	ND	500	500	522	520	104	104	75-125	0	20	
Boron, Dissolved	ug/L	ND	500	500	542	546	104	105	75-125	1	20	
Cadmium, Dissolved	ug/L	ND	500	500	517	517	103	103	75-125	0	20	
Calcium, Dissolved	ug/L	22200	5000	5000	27800	27700	114	112	75-125	0	20	
Chromium, Dissolved	ug/L	ND	500	500	511	508	102	101	75-125	1	20	
Cobalt, Dissolved	ug/L	ND	500	500	501	501	100	100	75-125	0	20	
Copper, Dissolved	ug/L	222	500	500	747	746	105	105	75-125	0	20	
Iron, Dissolved	ug/L	120	5000	5000	5260	5320	103	104	75-125	1	20	
Lead, Dissolved	ug/L	ND	500	500	503	503	100	100	75-125	0	20	
Magnesium, Dissolved	ug/L	5220	5000	5000	10300	10300	102	101	75-125	1	20	
Manganese, Dissolved	ug/L	6.5	500	500	513	512	101	101	75-125	0	20	
Molybdenum, Dissolved	ug/L	ND	500	500	516	520	103	104	75-125	1	20	
Nickel, Dissolved	ug/L	ND	500	500	518	516	103	103	75-125	0	20	
Potassium, Dissolved	ug/L	1590	5000	5000	6630	6660	101	101	75-125	0	20	
Selenium, Dissolved	ug/L	ND	500	500	518	518	103	104	75-125	0	20	
Silver, Dissolved	ug/L	ND	250	250	260	260	104	104	75-125	0	20	
Sodium, Dissolved	ug/L	21800	5000	5000	27300	27000	111	105	75-125	1	20	
Thallium, Dissolved	ug/L	ND	500	500	488	492	98	98	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	500	500	502	498	100	100	75-125	1	20	
Zinc, Dissolved	ug/L	379	500	500	892	887	103	102	75-125	1	20	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30249475

SAMPLE DUPLICATE: 1443792

Parameter	Units	30249345001 Result	Dup Result	RPD	Max RPD	Qualifiers
Aluminum, Dissolved	ug/L	ND	50.0 U		20	
Antimony, Dissolved	ug/L	ND	6.0 U		20	
Arsenic, Dissolved	ug/L	ND	5.0 U		20	
Barium, Dissolved	ug/L	31.5	31.4	0	20	
Beryllium, Dissolved	ug/L	ND	1.0 U		20	
Boron, Dissolved	ug/L	ND	23.4J		20	
Cadmium, Dissolved	ug/L	ND	3.0 U		20	
Calcium, Dissolved	ug/L	22200	22400	1	20	
Chromium, Dissolved	ug/L	ND	9.7		20	
Cobalt, Dissolved	ug/L	ND	5.0 U		20	
Copper, Dissolved	ug/L	222	222	0	20	
Iron, Dissolved	ug/L	120	170	34	20	D6
Lead, Dissolved	ug/L	ND	5.0 U		20	
Magnesium, Dissolved	ug/L	5220	5250	1	20	
Manganese, Dissolved	ug/L	6.5	6.7	4	20	
Molybdenum, Dissolved	ug/L	ND	20.0 U		20	
Nickel, Dissolved	ug/L	ND	2.1J		20	
Potassium, Dissolved	ug/L	1590	1600	0	20	
Selenium, Dissolved	ug/L	ND	8.0 U		20	
Silver, Dissolved	ug/L	ND	6.0 U		20	
Sodium, Dissolved	ug/L	21800	22100	2	20	
Thallium, Dissolved	ug/L	ND	10.0 U		20	
Vanadium, Dissolved	ug/L	ND	5.0 U		20	
Zinc, Dissolved	ug/L	379	380	0	20	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

QC Batch: 294957 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006, 30249475008

METHOD BLANK: 1444227 Matrix: Water  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006, 30249475008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	1.0 U	1.0	0.28	04/17/18 14:58	
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0	0.34	04/17/18 14:58	
1,1,2-Trichloroethane	ug/L	1.0 U	1.0	0.20	04/17/18 14:58	
1,1-Dichloroethane	ug/L	1.0 U	1.0	0.19	04/17/18 14:58	
1,1-Dichloroethene	ug/L	1.0 U	1.0	0.31	04/17/18 14:58	
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0	0.14	04/17/18 14:58	
1,2-Dichlorobenzene	ug/L	1.0 U	1.0	0.50	04/17/18 14:58	
1,2-Dichloroethane	ug/L	1.0 U	1.0	0.25	04/17/18 14:58	
1,2-Dichloroethene (Total)	ug/L	2.0 U	2.0	0.41	04/17/18 14:58	
1,2-Dichloropropane	ug/L	1.0 U	1.0	0.21	04/17/18 14:58	
1,3-Dichlorobenzene	ug/L	1.0 U	1.0	0.13	04/17/18 14:58	
1,4-Dichlorobenzene	ug/L	1.0 U	1.0	0.20	04/17/18 14:58	
2-Butanone (MEK)	ug/L	10.0 U	10.0	2.1	04/17/18 14:58	
2-Hexanone	ug/L	10.0 U	10.0	0.66	04/17/18 14:58	
4-Methyl-2-pentanone (MIBK)	ug/L	10.0 U	10.0	0.37	04/17/18 14:58	
Acetone	ug/L	10.0 U	10.0	2.8	04/17/18 14:58	
Benzene	ug/L	1.0 U	1.0	0.24	04/17/18 14:58	
Bromochloromethane	ug/L	1.0 U	1.0	0.34	04/17/18 14:58	
Bromodichloromethane	ug/L	1.0 U	1.0	0.29	04/17/18 14:58	
Bromoform	ug/L	1.0 U	1.0	0.32	04/17/18 14:58	
Bromomethane	ug/L	1.0 U	1.0	0.49	04/17/18 14:58	
Carbon disulfide	ug/L	1.0 U	1.0	0.32	04/17/18 14:58	
Carbon tetrachloride	ug/L	1.0 U	1.0	0.34	04/17/18 14:58	
Chlorobenzene	ug/L	1.0 U	1.0	0.15	04/17/18 14:58	
Chloroethane	ug/L	1.0 U	1.0	0.55	04/17/18 14:58	
Chloroform	ug/L	1.0 U	1.0	0.30	04/17/18 14:58	
Chloromethane	ug/L	1.0 U	1.0	0.68	04/17/18 14:58	
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0	0.18	04/17/18 14:58	
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0	0.25	04/17/18 14:58	
Dibromochloromethane	ug/L	1.0 U	1.0	0.27	04/17/18 14:58	
Ethylbenzene	ug/L	1.0 U	1.0	0.31	04/17/18 14:58	
m&p-Xylene	ug/L	2.0 U	2.0	0.60	04/17/18 14:58	
Methyl-tert-butyl ether	ug/L	1.0 U	1.0	0.23	04/17/18 14:58	
Methylene Chloride	ug/L	1.0 U	1.0	0.77	04/17/18 14:58	
o-Xylene	ug/L	1.0 U	1.0	0.18	04/17/18 14:58	
Styrene	ug/L	1.0 U	1.0	0.17	04/17/18 14:58	
Tetrachloroethene	ug/L	1.0 U	1.0	0.32	04/17/18 14:58	
Toluene	ug/L	1.0 U	1.0	0.30	04/17/18 14:58	
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0	0.22	04/17/18 14:58	
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0	0.26	04/17/18 14:58	
Trichloroethene	ug/L	1.0 U	1.0	0.39	04/17/18 14:58	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30249475

METHOD BLANK: 1444227

Matrix: Water

Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006, 30249475008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Vinyl chloride	ug/L	1.0 U	1.0	0.31	04/17/18 14:58	
Xylene (Total)	ug/L	3.0 U	3.0	0.78	04/17/18 14:58	
1,2-Dichloroethane-d4 (S)	%	104	80-120		04/17/18 14:58	
4-Bromofluorobenzene (S)	%	97	79-129		04/17/18 14:58	
Dibromofluoromethane (S)	%	102	80-120		04/17/18 14:58	
Toluene-d8 (S)	%	98	80-120		04/17/18 14:58	

LABORATORY CONTROL SAMPLE: 1444228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	16.7	84	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	65-127	
1,1,2-Trichloroethane	ug/L	20	18.9	95	70-130	
1,1-Dichloroethane	ug/L	20	17.0	85	70-130	
1,1-Dichloroethene	ug/L	20	15.4	77	70-130	
1,2,4-Trichlorobenzene	ug/L	20	20.9	105	70-130	
1,2-Dichlorobenzene	ug/L	20	20.8	104	70-130	
1,2-Dichloroethane	ug/L	20	17.3	87	70-130	
1,2-Dichloroethene (Total)	ug/L	40	32.5	81	70-130	
1,2-Dichloropropane	ug/L	20	17.7	89	70-130	
1,3-Dichlorobenzene	ug/L	20	20.5	102	70-130	
1,4-Dichlorobenzene	ug/L	20	20.6	103	70-130	
2-Butanone (MEK)	ug/L	20	24.8	124	72-170	
2-Hexanone	ug/L	20	21.7	108	65-151	
4-Methyl-2-pentanone (MIBK)	ug/L	20	22.2	111	66-150	
Acetone	ug/L	20	21.2	106	30-179	
Benzene	ug/L	20	17.1	86	70-130	
Bromochloromethane	ug/L	20	16.7	84	70-130	
Bromodichloromethane	ug/L	20	19.9	100	70-130	
Bromoform	ug/L	20	18.5	92	70-130	
Bromomethane	ug/L	20	22.5	112	47-174	
Carbon disulfide	ug/L	20	20.6	103	43-133	
Carbon tetrachloride	ug/L	20	16.4	82	56-143	
Chlorobenzene	ug/L	20	19.1	95	70-130	
Chloroethane	ug/L	20	24.3	122	67-139	
Chloroform	ug/L	20	17.8	89	70-130	
Chloromethane	ug/L	20	21.5	107	57-138	
cis-1,2-Dichloroethene	ug/L	20	16.3	82	70-130	
cis-1,3-Dichloropropene	ug/L	20	18.2	91	70-130	
Dibromochloromethane	ug/L	20	18.5	92	70-130	
Ethylbenzene	ug/L	20	18.5	92	70-130	
m&p-Xylene	ug/L	40	37.2	93	70-130	
Methyl-tert-butyl ether	ug/L	20	20.9	105	70-130	
Methylene Chloride	ug/L	20	14.9	75	55-144	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

LABORATORY CONTROL SAMPLE: 1444228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	20	18.8	94	70-130	
Styrene	ug/L	20	18.9	94	70-130	
Tetrachloroethene	ug/L	20	18.0	90	70-130	
Toluene	ug/L	20	18.0	90	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.2	81	70-130	
trans-1,3-Dichloropropene	ug/L	20	17.9	89	70-130	
Trichloroethene	ug/L	20	18.2	91	70-130	
Vinyl chloride	ug/L	20	20.2	101	70-130	
Xylene (Total)	ug/L	60	56.0	93	70-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			98	79-129	
Dibromofluoromethane (S)	%			100	80-120	
Toluene-d8 (S)	%			97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1444229 1444230

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		30249475001 Result	Spike Conc.	Spike Conc.	Result							
1,1,1-Trichloroethane	ug/L	1.0 U	20	20	16.7	17.4	83	87	79-129	4	30	
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	20	20	20.7	21.7	103	108	57-118	5	30	
1,1,2-Trichloroethane	ug/L	1.0 U	20	20	18.4	18.8	92	94	68-117	2	30	
1,1-Dichloroethane	ug/L	1.0 U	20	20	16.3	17.7	81	88	74-119	8	30	
1,1-Dichloroethene	ug/L	1.0 U	20	20	14.9	16.2	74	81	63-126	8	30	
1,2,4-Trichlorobenzene	ug/L	1.0 U	20	20	19.9	20.5	99	102	60-117	3	30	
1,2-Dichlorobenzene	ug/L	1.0 U	20	20	19.7	20.1	99	101	72-119	2	30	
1,2-Dichloroethane	ug/L	1.0 U	20	20	16.9	17.8	84	89	69-116	5	30	
1,2-Dichloroethene (Total)	ug/L	2.0 U	40	40	30.8	33.3	77	83	70-119	8	30	
1,2-Dichloropropane	ug/L	1.0 U	20	20	16.9	17.6	84	88	63-118	4	30	
1,3-Dichlorobenzene	ug/L	1.0 U	20	20	19.9	20.8	99	104	81-119	5	30	
1,4-Dichlorobenzene	ug/L	1.0 U	20	20	19.3	20.7	97	104	72-118	7	30	
2-Butanone (MEK)	ug/L	10.0 U	20	20	24.9	25.4	125	127	72-168	2	30	
2-Hexanone	ug/L	10.0 U	20	20	22.4	22.0	112	110	66-143	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	10.0 U	20	20	23.2	23.6	116	118	67-145	2	30	
Acetone	ug/L	10.0 U	20	20	24.7	26.1	124	131	15-175	6	30	
Benzene	ug/L	1.0 U	20	20	16.9	17.2	85	86	67-121	2	30	
Bromochloromethane	ug/L	1.0 U	20	20	16.2	17.1	81	85	62-128	5	30	
Bromodichloromethane	ug/L	1.0 U	20	20	18.4	19.4	92	97	66-127	6	30	
Bromoform	ug/L	1.0 U	20	20	16.8	16.5	84	82	71-127	2	30	
Bromomethane	ug/L	1.0 U	20	20	17.9	20.2	89	101	10-156	12	30	
Carbon disulfide	ug/L	1.0 U	20	20	18.6	19.7	93	99	45-131	6	30	
Carbon tetrachloride	ug/L	1.0 U	20	20	15.2	16.0	76	80	69-134	5	30	
Chlorobenzene	ug/L	1.0 U	20	20	18.6	18.9	93	95	69-119	2	30	
Chloroethane	ug/L	1.0 U	20	20	24.9	26.5	125	133	60-156	6	30	
Chloroform	ug/L	1.0 U	20	20	16.6	17.4	83	87	69-115	5	30	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1444229		1444230		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		30249475001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Chloromethane	ug/L	1.0 U	20	20	20.1	21.2	101	106	52-145	5	30		
cis-1,2-Dichloroethene	ug/L	1.0 U	20	20	15.9	16.5	79	82	65-120	4	30		
cis-1,3-Dichloropropene	ug/L	1.0 U	20	20	17.7	17.8	88	89	57-125	1	30		
Dibromochloromethane	ug/L	1.0 U	20	20	17.2	17.8	86	89	64-131	3	30		
Ethylbenzene	ug/L	1.0 U	20	20	18.2	18.7	91	93	70-127	2	30		
m&p-Xylene	ug/L	2.0 U	40	40	36.9	37.8	92	94	71-128	2	30		
Methyl-tert-butyl ether	ug/L	1.0 U	20	20	19.9	20.4	100	102	79-135	2	30		
Methylene Chloride	ug/L	1.0 U	20	20	14.8	15.8	74	79	54-133	6	30		
o-Xylene	ug/L	1.0 U	20	20	18.3	18.8	92	94	68-125	2	30		
Styrene	ug/L	1.0 U	20	20	15.6	16.6	78	83	65-121	6	30		
Tetrachloroethene	ug/L	0.66J	20	20	18.0	18.9	86	91	77-125	5	30		
Toluene	ug/L	1.0 U	20	20	17.6	18.4	88	92	77-125	4	30		
trans-1,2-Dichloroethene	ug/L	1.0 U	20	20	14.9	16.9	74	84	70-119	12	30		
trans-1,3-Dichloropropene	ug/L	1.0 U	20	20	17.2	17.6	86	88	52-125	2	30		
Trichloroethene	ug/L	1.0 U	20	20	17.1	18.1	84	89	74-128	6	30		
Vinyl chloride	ug/L	1.0 U	20	20	19.1	19.6	95	98	60-131	3	30		
Xylene (Total)	ug/L	3.0 U	60	60	55.3	56.5	92	94	69-128	2	30		
1,2-Dichloroethane-d4 (S)	%						107	109	80-120				
4-Bromofluorobenzene (S)	%						100	100	79-129				
Dibromofluoromethane (S)	%						102	101	80-120				
Toluene-d8 (S)	%						100	100	80-120				

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

QC Batch: 294719 Analysis Method: EPA 8270D  
QC Batch Method: EPA 3510C Analysis Description: 8270D Water MSSV  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

METHOD BLANK: 1443317 Matrix: Water  
Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
1,2-Dichlorobenzene	ug/L	1.0 U	1.0	0.097	04/16/18 14:23	
1,3-Dichlorobenzene	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
1,4-Dichlorobenzene	ug/L	1.0 U	1.0	0.10	04/16/18 14:23	
1-Methylnaphthalene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
2,4,5-Trichlorophenol	ug/L	2.5 U	2.5	0.82	04/16/18 14:23	
2,4,6-Trichlorophenol	ug/L	1.0 U	1.0	0.15	04/16/18 14:23	
2,4-Dichlorophenol	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
2,4-Dimethylphenol	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
2,4-Dinitrophenol	ug/L	2.5 U	2.5	0.73	04/16/18 14:23	
2,4-Dinitrotoluene	ug/L	1.0 U	1.0	0.13	04/16/18 14:23	
2,6-Dinitrotoluene	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
2-Chloronaphthalene	ug/L	1.0 U	1.0	0.10	04/16/18 14:23	
2-Chlorophenol	ug/L	1.0 U	1.0	0.13	04/16/18 14:23	
2-Methylnaphthalene	ug/L	1.0 U	1.0	0.10	04/16/18 14:23	
2-Methylphenol(o-Cresol)	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
2-Nitroaniline	ug/L	2.5 U	2.5	0.82	04/16/18 14:23	
2-Nitrophenol	ug/L	1.0 U	1.0	0.13	04/16/18 14:23	
3&4-Methylphenol(m&p Cresol)	ug/L	2.0 U	2.0	0.16	04/16/18 14:23	
3,3'-Dichlorobenzidine	ug/L	1.0 U	1.0	0.17	04/16/18 14:23	
3-Nitroaniline	ug/L	2.5 U	2.5	0.95	04/16/18 14:23	
4,6-Dinitro-2-methylphenol	ug/L	2.5 U	2.5	0.81	04/16/18 14:23	
4-Bromophenylphenyl ether	ug/L	1.0 U	1.0	0.16	04/16/18 14:23	
4-Chloro-3-methylphenol	ug/L	1.0 U	1.0	0.13	04/16/18 14:23	
4-Chloroaniline	ug/L	1.0 U	1.0	0.10	04/16/18 14:23	
4-Chlorophenylphenyl ether	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
4-Nitroaniline	ug/L	2.5 U	2.5	1.0	04/16/18 14:23	
4-Nitrophenol	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Acenaphthene	ug/L	1.0 U	1.0	0.13	04/16/18 14:23	
Acenaphthylene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Anthracene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Azobenzene	ug/L	1.0 U	1.0	0.16	04/16/18 14:23	N2
Benzo(a)anthracene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Benzo(a)pyrene	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
Benzo(b)fluoranthene	ug/L	1.0 U	1.0	0.23	04/16/18 14:23	
Benzo(g,h,i)perylene	ug/L	1.0 U	1.0	0.36	04/16/18 14:23	
Benzo(k)fluoranthene	ug/L	1.0 U	1.0	0.092	04/16/18 14:23	
Benzoic acid	ug/L	25.0 U	25.0	0.26	04/16/18 14:23	
Benzyl alcohol	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
bis(2-Chloroethoxy)methane	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
bis(2-Chloroethyl) ether	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

METHOD BLANK: 1443317

Matrix: Water

Associated Lab Samples: 30249475001, 30249475002, 30249475003, 30249475004, 30249475005, 30249475006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
bis(2-Chloroisopropyl) ether	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
bis(2-Ethylhexyl)phthalate	ug/L	1.0 U	1.0	0.15	04/16/18 14:23	
Butylbenzylphthalate	ug/L	0.47J	1.0	0.13	04/16/18 14:23	
Carbazole	ug/L	1.0 U	1.0	0.32	04/16/18 14:23	
Chrysene	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
Di-n-butylphthalate	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
Di-n-octylphthalate	ug/L	1.0 U	1.0	0.18	04/16/18 14:23	
Dibenz(a,h)anthracene	ug/L	1.0 U	1.0	0.30	04/16/18 14:23	
Dibenzofuran	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
Diethylphthalate	ug/L	1.0 U	1.0	0.19	04/16/18 14:23	
Dimethylphthalate	ug/L	1.0 U	1.0	0.15	04/16/18 14:23	
Fluoranthene	ug/L	1.0 U	1.0	0.081	04/16/18 14:23	
Fluorene	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
Hexachloro-1,3-butadiene	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
Hexachlorobenzene	ug/L	1.0 U	1.0	0.14	04/16/18 14:23	
Hexachlorocyclopentadiene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Hexachloroethane	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
Indeno(1,2,3-cd)pyrene	ug/L	1.0 U	1.0	0.30	04/16/18 14:23	
Isophorone	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
N-Nitroso-di-n-propylamine	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
N-Nitrosodimethylamine	ug/L	1.0 U	1.0	0.066	04/16/18 14:23	
N-Nitrosodiphenylamine	ug/L	1.0 U	1.0	0.12	04/16/18 14:23	
Naphthalene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Nitrobenzene	ug/L	1.0 U	1.0	0.11	04/16/18 14:23	
Pentachlorophenol	ug/L	2.5 U	2.5	0.85	04/16/18 14:23	
Phenanthrene	ug/L	1.0 U	1.0	0.16	04/16/18 14:23	
Phenol	ug/L	1.0 U	1.0	0.056	04/16/18 14:23	
Pyrene	ug/L	1.0 U	1.0	0.15	04/16/18 14:23	
2,4,6-Tribromophenol (S)	%	32	36-114		04/16/18 14:23	SR
2-Fluorobiphenyl (S)	%	35	19-103		04/16/18 14:23	
2-Fluorophenol (S)	%	25	10-115		04/16/18 14:23	
Nitrobenzene-d5 (S)	%	34	13-114		04/16/18 14:23	
Phenol-d6 (S)	%	18	10-113		04/16/18 14:23	
Terphenyl-d14 (S)	%	47	14-124		04/16/18 14:23	

LABORATORY CONTROL SAMPLE: 1443318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	10	6.2	62	29-81	
1,2-Dichlorobenzene	ug/L	10	7.0	70	29-97	
1,3-Dichlorobenzene	ug/L	10	7.0	70	26-95	
1,4-Dichlorobenzene	ug/L	10	6.8	68	30-100	
1-Methylnaphthalene	ug/L	10	6.6	66	33-84	
2,4,5-Trichlorophenol	ug/L	10	8.8	88	48-109	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30249475

LABORATORY CONTROL SAMPLE: 1443318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,6-Trichlorophenol	ug/L	10	8.5	85	45-109	
2,4-Dichlorophenol	ug/L	10	7.1	71	36-86	
2,4-Dimethylphenol	ug/L	10	5.5	55	30-79	
2,4-Dinitrophenol	ug/L	10	8.4	84	10-131	
2,4-Dinitrotoluene	ug/L	10	9.3	93	40-111	
2,6-Dinitrotoluene	ug/L	10	8.8	88	43-117	
2-Chloronaphthalene	ug/L	10	7.9	79	37-99	
2-Chlorophenol	ug/L	10	7.8	78	37-94	
2-Methylnaphthalene	ug/L	10	6.5	65	32-77	
2-Methylphenol(o-Cresol)	ug/L	10	7.3	73	33-105	
2-Nitroaniline	ug/L	10	9.6	96	47-116	
2-Nitrophenol	ug/L	10	6.6	66	32-86	
3&4-Methylphenol(m&p Cresol)	ug/L	10	7.5	75	25-110	
3,3'-Dichlorobenzidine	ug/L	10	8.7	87	26-135	
3-Nitroaniline	ug/L	10	7.9	79	42-131	
4,6-Dinitro-2-methylphenol	ug/L	10	10.2	102	26-142	
4-Bromophenylphenyl ether	ug/L	10	9.0	90	44-111	
4-Chloro-3-methylphenol	ug/L	10	7.6	76	40-93	
4-Chloroaniline	ug/L	10	5.6	56	23-78	
4-Chlorophenylphenyl ether	ug/L	10	8.4	84	42-111	
4-Nitroaniline	ug/L	10	8.2	82	42-158	
4-Nitrophenol	ug/L	10	4.9	49	16-63	
Acenaphthene	ug/L	10	8.5	85	40-105	
Acenaphthylene	ug/L	10	8.4	84	39-106	
Anthracene	ug/L	10	8.7	87	49-101	
Azobenzene	ug/L	10	8.6	86	44-120	N2
Benzo(a)anthracene	ug/L	10	9.3	93	55-114	
Benzo(a)pyrene	ug/L	10	9.0	90	55-109	
Benzo(b)fluoranthene	ug/L	10	8.8	88	54-123	
Benzo(g,h,i)perylene	ug/L	10	8.8	88	29-132	
Benzo(k)fluoranthene	ug/L	10	9.7	97	58-115	
Benzoic acid	ug/L	10	3.1J	31	10-52	
Benzyl alcohol	ug/L	10	8.3	83	24-121	
bis(2-Chloroethoxy)methane	ug/L	10	6.6	66	34-84	
bis(2-Chloroethyl) ether	ug/L	10	7.6	76	33-92	
bis(2-Chloroisopropyl) ether	ug/L	10	7.8	78	33-100	
bis(2-Ethylhexyl)phthalate	ug/L	10	9.7	97	57-129	
Butylbenzylphthalate	ug/L	10	9.3	93	59-128	
Carbazole	ug/L	10	7.7	77	54-123	
Chrysene	ug/L	10	9.4	94	59-109	
Di-n-butylphthalate	ug/L	10	9.9	99	60-120	
Di-n-octylphthalate	ug/L	10	8.7	87	54-136	
Dibenz(a,h)anthracene	ug/L	10	8.9	89	40-124	
Dibenzofuran	ug/L	10	8.4	84	41-107	
Diethylphthalate	ug/L	10	9.1	91	51-113	
Dimethylphthalate	ug/L	10	8.8	88	45-115	
Fluoranthene	ug/L	10	9.4	94	57-112	

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30249475

LABORATORY CONTROL SAMPLE: 1443318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/L	10	8.7	87	44-108	
Hexachloro-1,3-butadiene	ug/L	10	6.2	62	20-103	
Hexachlorobenzene	ug/L	10	8.9	89	10-119	
Hexachlorocyclopentadiene	ug/L	10	5.8	58	16-85	
Hexachloroethane	ug/L	10	6.8	68	26-102	
Indeno(1,2,3-cd)pyrene	ug/L	10	9.1	91	38-121	
Isophorone	ug/L	10	6.5	65	35-85	
N-Nitroso-di-n-propylamine	ug/L	10	8.2	82	40-108	
N-Nitrosodimethylamine	ug/L	10	5.5	55	18-73	
N-Nitrosodiphenylamine	ug/L	10	6.7	67	34-87	
Naphthalene	ug/L	10	6.5	65	32-77	
Nitrobenzene	ug/L	10	6.9	69	26-111	
Pentachlorophenol	ug/L	10	10.8	108	24-131	
Phenanthrene	ug/L	10	8.9	89	48-110	
Phenol	ug/L	10	4.4	44	13-49	
Pyrene	ug/L	10	9.5	95	56-117	
2,4,6-Tribromophenol (S)	%			89	36-114	
2-Fluorobiphenyl (S)	%			77	19-103	
2-Fluorophenol (S)	%			55	10-115	
Nitrobenzene-d5 (S)	%			66	13-114	
Phenol-d6 (S)	%			39	10-113	
Terphenyl-d14 (S)	%			86	14-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1443319 1443320

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		30249475006 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,2,4-Trichlorobenzene	ug/L	1.0 U	11.1	10.1	4.2	3.9	38	39	10-81	9	25	
1,2-Dichlorobenzene	ug/L	1.0 U	11.1	10.1	4.6	4.3	41	42	10-87	8	25	
1,3-Dichlorobenzene	ug/L	1.0 U	11.1	10.1	4.5	4.2	40	42	10-82	5	25	
1,4-Dichlorobenzene	ug/L	1.0 U	11.1	10.1	4.7	4.2	42	41	12-110	11	25	
1-Methylnaphthalene	ug/L	1.0 U	11.1	10.1	4.5	4.1	40	40	10-91	9	25	
2,4,5-Trichlorophenol	ug/L	2.6 U	11.1	10.1	5.7	5.2	51	51	28-126	10	25	
2,4,6-Trichlorophenol	ug/L	1.0 U	11.1	10.1	5.7	5.5	51	54	22-130	5	25	
2,4-Dichlorophenol	ug/L	1.0 U	11.1	10.1	4.5	4.1	41	40	14-91	10	25	
2,4-Dimethylphenol	ug/L	1.0 U	11.1	10.1	3.3	3.0	30	30	12-83	9	25	
2,4-Dinitrophenol	ug/L	2.6 U	11.1	10.1	7.2	6.0	65	60	10-123	18	25	
2,4-Dinitrotoluene	ug/L	1.0 U	11.1	10.1	6.8	5.3	61	53	40-114	23	25	
2,6-Dinitrotoluene	ug/L	1.0 U	11.1	10.1	5.8	5.2	52	52	21-115	10	25	
2-Chloronaphthalene	ug/L	1.0 U	11.1	10.1	5.0	4.7	45	46	11-98	8	25	
2-Chlorophenol	ug/L	1.0 U	11.1	10.1	4.8	4.5	43	44	16-92	7	25	
2-Methylnaphthalene	ug/L	1.0 U	11.1	10.1	4.4	4.1	40	40	10-78	9	25	
2-Methylphenol(o-Cresol)	ug/L	1.0 U	11.1	10.1	4.2	3.8	37	37	10-124	10	25	
2-Nitroaniline	ug/L	2.6 U	11.1	10.1	6.4	5.9	58	59	22-117	8	25	
2-Nitrophenol	ug/L	1.0 U	11.1	10.1	4.5	4.2	41	42	10-93	6	25	

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### QUALITY CONTROL DATA

Project: Springfield Twp  
Pace Project No.: 30249475

Parameter	Units	1443319		1443320		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		30249475006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
3&4-Methylphenol(m&p Cresol)	ug/L	2.1 U	11.1	10.1	4.1	3.6	37	36	10-123	12	25		
3,3'-Dichlorobenzidine	ug/L	1.0 U	11.1	10.1	0.43J	0.28J	4	3	10-123		25	ML	
3-Nitroaniline	ug/L	2.6 U	11.1	10.1	4.5	3.6	40	35	10-130	23	25		
4,6-Dinitro-2-methylphenol	ug/L	2.6 U	11.1	10.1	8.2	7.1	74	70	16-142	15	25		
4-Bromophenylphenyl ether	ug/L	1.0 U	11.1	10.1	6.0	4.9	54	49	18-117	20	25		
4-Chloro-3-methylphenol	ug/L	1.0 U	11.1	10.1	5.1	4.7	46	46	15-106	9	25		
4-Chloroaniline	ug/L	1.0 U	11.1	10.1	2.7	2.6	24	26	10-78	1	25		
4-Chlorophenylphenyl ether	ug/L	1.0 U	11.1	10.1	5.3	5.0	48	49	14-111	6	25		
4-Nitroaniline	ug/L	2.6 U	11.1	10.1	6.2	4.8	55	47	10-161	25	25		
4-Nitrophenol	ug/L	1.0 U	11.1	10.1	3.6	2.5	33	24	10-61	38	25	R1	
Acenaphthene	ug/L	1.0 U	11.1	10.1	5.4	4.9	48	48	10-113	10	25		
Acenaphthylene	ug/L	1.0 U	11.1	10.1	5.3	4.8	48	48	11-104	9	25		
Anthracene	ug/L	1.0 U	11.1	10.1	6.3	5.4	57	53	26-111	16	25		
Azobenzene	ug/L	1.0 U	11.1	10.1	5.4	4.9	49	48	17-121	11	25	N2	
Benzo(a)anthracene	ug/L	1.0 U	11.1	10.1	7.6	6.1	69	61	36-120	22	25		
Benzo(a)pyrene	ug/L	1.0 U	11.1	10.1	7.0	5.8	63	58	37-116	19	25		
Benzo(b)fluoranthene	ug/L	1.0 U	11.1	10.1	7.7	6.7	69	66	37-128	14	25		
Benzo(g,h,i)perylene	ug/L	1.0 U	11.1	10.1	7.1	5.4	64	53	10-133	27	25	R1	
Benzo(k)fluoranthene	ug/L	1.0 U	11.1	10.1	7.4	6.0	66	59	37-127	21	25		
Benzoic acid	ug/L	0.52J	11.1	10.1	2.7J	2.4J	20	18	10-46		25		
Benzyl alcohol	ug/L	1.0 U	11.1	10.1	4.9	4.3	44	43	21-99	12	25		
bis(2-Chloroethoxy)methane	ug/L	1.0 U	11.1	10.1	4.2	3.9	38	38	12-85	9	25		
bis(2-Chloroethyl) ether	ug/L	1.0 U	11.1	10.1	4.8	4.4	43	44	14-92	9	25		
bis(2-Chloroisopropyl) ether	ug/L	1.0 U	11.1	10.1	4.8	4.4	44	44	10-107	8	25		
bis(2-Ethylhexyl)phthalate	ug/L	0.91J	11.1	10.1	9.1	7.6	74	66	35-132	19	25		
Butylbenzylphthalate	ug/L	0.51J	11.1	10.1	8.2	6.9	69	63	35-137	18	25		
Carbazole	ug/L	1.0 U	11.1	10.1	7.6	5.4	68	54	40-125	33	25	R1	
Chrysene	ug/L	1.0 U	11.1	10.1	7.4	6.3	66	62	38-120	16	25		
Di-n-butylphthalate	ug/L	1.0 U	11.1	10.1	7.7	6.4	69	62	39-125	20	25		
Di-n-octylphthalate	ug/L	1.0 U	11.1	10.1	7.5	6.3	67	62	28-143	17	25		
Dibenz(a,h)anthracene	ug/L	1.0 U	11.1	10.1	7.4	5.7	66	56	12-132	26	25	R1	
Dibenzofuran	ug/L	1.0 U	11.1	10.1	5.2	4.8	47	48	10-115	8	25		
Diethylphthalate	ug/L	1.0 U	11.1	10.1	6.6	5.3	60	52	29-118	23	25		
Dimethylphthalate	ug/L	1.0 U	11.1	10.1	5.6	5.1	50	51	17-119	9	25		
Fluoranthene	ug/L	1.0 U	11.1	10.1	7.8	6.1	70	61	35-125	24	25		
Fluorene	ug/L	1.0 U	11.1	10.1	5.7	5.3	51	52	12-114	8	25		
Hexachloro-1,3-butadiene	ug/L	1.0 U	11.1	10.1	4.3	3.8	39	38	10-109	11	25		
Hexachlorobenzene	ug/L	1.0 U	11.1	10.1	6.0	5.5	54	54	10-120	9	25		
Hexachlorocyclopentadiene	ug/L	1.0 U	11.1	10.1	3.9	3.6	35	35	10-66	9	25		
Hexachloroethane	ug/L	1.0 U	11.1	10.1	4.4	4.0	40	40	10-106	10	25		
Indeno(1,2,3-cd)pyrene	ug/L	1.0 U	11.1	10.1	7.4	5.8	66	57	11-130	24	25		
Isophorone	ug/L	1.0 U	11.1	10.1	4.2	3.8	37	37	11-89	10	25		
N-Nitroso-di-n-propylamine	ug/L	1.0 U	11.1	10.1	5.0	4.5	45	45	19-104	10	25		
N-Nitrosodimethylamine	ug/L	1.0 U	11.1	10.1	3.4	3.0	31	29	10-67	14	25		
N-Nitrosodiphenylamine	ug/L	1.0 U	11.1	10.1	4.3	3.5	39	35	14-100	21	25		

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### QUALITY CONTROL DATA

Project: Springfield Twp

Pace Project No.: 30249475

Parameter	Units	1443319		1443320		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		30249475006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Naphthalene	ug/L	1.0 U	11.1	10.1	4.5	4.1	40	40	10-79	9	25	
Nitrobenzene	ug/L	1.0 U	11.1	10.1	4.7	4.2	42	42	10-122	9	25	
Pentachlorophenol	ug/L	2.6 U	11.1	10.1	10	7.8	90	78	38-135	24	25	
Phenanthrene	ug/L	1.0 U	11.1	10.1	7.0	5.8	63	58	27-116	18	25	
Phenol	ug/L	1.0 U	11.1	10.1	2.3	1.9	20	19	10-42	18	25	
Pyrene	ug/L	1.0 U	11.1	10.1	7.8	6.7	70	66	32-129	16	25	
2,4,6-Tribromophenol (S)	%						60	58	36-114			
2-Fluorobiphenyl (S)	%						41	41	19-103			
2-Fluorophenol (S)	%						27	26	10-115			
Nitrobenzene-d5 (S)	%						40	40	13-114			
Phenol-d6 (S)	%						18	17	10-113			
Terphenyl-d14 (S)	%						56	54	14-124			

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## QUALIFIERS

Project: Springfield Twp  
Pace Project No.: 30249475

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
TNTC - Too Numerous To Count  
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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
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.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

### ANALYTE QUALIFIERS

A5 Greater than 5% sediment in sample determined by visual observation. Aqueous portion decanted from the sediment and extracted.  
B Analyte was detected in the associated method blank.  
D6 The precision between the sample and sample duplicate exceeded laboratory control limits.  
ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.  
N2 The lab does not hold NELAC/TNI accreditation for this parameter.  
R1 RPD value was outside control limits.  
SR Surrogate recovery was below laboratory control limits. Results may be biased low.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Springfield Twp

Pace Project No.: 30249475

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30249475001	MW1	EPA 3005A	294851	EPA 6010B	294869
30249475002	MW2	EPA 3005A	294851	EPA 6010B	294869
30249475003	MW3	EPA 3005A	294851	EPA 6010B	294869
30249475004	MW4	EPA 3005A	294851	EPA 6010B	294869
30249475005	MW5	EPA 3005A	294851	EPA 6010B	294869
30249475006	MW6	EPA 3005A	294851	EPA 6010B	294869
30249475001	MW1	EPA 7470A	294731	EPA 7470A	294757
30249475002	MW2	EPA 7470A	294731	EPA 7470A	294757
30249475003	MW3	EPA 7470A	294731	EPA 7470A	294757
30249475004	MW4	EPA 7470A	294731	EPA 7470A	294757
30249475005	MW5	EPA 7470A	294731	EPA 7470A	294757
30249475006	MW6	EPA 7470A	294731	EPA 7470A	294757
30249475001	MW1	EPA 3510C	294719	EPA 8270D	294778
30249475002	MW2	EPA 3510C	294719	EPA 8270D	294778
30249475003	MW3	EPA 3510C	294719	EPA 8270D	294778
30249475004	MW4	EPA 3510C	294719	EPA 8270D	294778
30249475005	MW5	EPA 3510C	294719	EPA 8270D	294778
30249475006	MW6	EPA 3510C	294719	EPA 8270D	294778
30249475001	MW1	EPA 8260B	294957		
30249475002	MW2	EPA 8260B	294957		
30249475003	MW3	EPA 8260B	294957		
30249475004	MW4	EPA 8260B	294957		
30249475005	MW5	EPA 8260B	294957		
30249475006	MW6	EPA 8260B	294957		
30249475008	Trip Blank	EPA 8260B	294957		

### REPORT OF LABORATORY ANALYSIS

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Pittsburgh Lab Sample Condition Upon Receipt

30249475 -

Face Analytical

Client Name: BL Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Label	<u>AKM</u>
LIMS Login	<u>AKM</u>

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

Thermometer Used 6 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 1.8 °C Correction Factor: 0.0 °C Final Temp: 1.8 °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents
	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			/	13.
Organic Samples checked for dechlorination:	/			14.
Filtered volume received for Dissolved tests	/			15. <u>AKM 4/14/18</u>
All containers have been checked for preservation.	/			16.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: <u>VOA</u> , coliform, TOC, O&G, Phenolics				
				Initial when completed: <u>AKM</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	/			17.
Trip Blank Present:	/			18.
Trip Blank Custody Seals Present	/			
Rad Aqueous Samples Screened > 0.5 mrem/hr			/	Initial when completed: _____ Date: _____

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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)

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

## Sample Summary

**BL Companies**

**Job No: JD23413**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
---------------	----------------	---------	----------	-------------	------	------------------

**This report contains results reported as ND = Not detected. The following applies:  
Organics ND = Not detected above the MDL**

JD23413-1	04/13/21	14:50	SS	04/14/21	AQ	Ground Water	MW-1
JD23413-1F	04/13/21	14:50	SS	04/14/21	AQ	Groundwater Filtered	MW-1
JD23413-2	04/13/21	12:10	NP	04/14/21	AQ	Ground Water	MW-2
JD23413-2F	04/13/21	12:10	NP	04/14/21	AQ	Groundwater Filtered	MW-2
JD23413-3	04/12/21	12:40	NP	04/14/21	AQ	Ground Water	MW-3
JD23413-3F	04/12/21	12:40	NP	04/14/21	AQ	Groundwater Filtered	MW-3
JD23413-4	04/13/21	14:19	NP	04/14/21	AQ	Ground Water	MW-4
JD23413-4F	04/13/21	14:19	NP	04/14/21	AQ	Groundwater Filtered	MW-4
JD23413-5	04/13/21	12:15	SS	04/14/21	AQ	Ground Water	MW-5
JD23413-5F	04/13/21	12:15	SS	04/14/21	AQ	Groundwater Filtered	MW-5
JD23413-6	04/12/21	17:50	SS	04/14/21	AQ	Ground Water	MW-6
JD23413-6F	04/12/21	17:50	SS	04/14/21	AQ	Groundwater Filtered	MW-6

## Sample Summary

(continued)

BL Companies

Job No: JD23413

Former TCCA, Oreland, PA  
Project No: 17L5438

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD23413-7	04/13/21	15:25 SS	04/14/21	AQ	Ground Water	MW-7
JD23413-7F	04/13/21	15:25 SS	04/14/21	AQ	Groundwater Filtered	MW-7
JD23413-8	04/12/21	12:10 SS	04/14/21	AQ	Ground Water	MW-8
JD23413-8F	04/12/21	12:10 SS	04/14/21	AQ	Groundwater Filtered	MW-8
JD23413-9	04/12/21	13:25 SS	04/14/21	AQ	Ground Water	MW-9
JD23413-9F	04/12/21	13:25 SS	04/14/21	AQ	Groundwater Filtered	MW-9
JD23413-10	04/12/21	18:04 NP	04/14/21	AQ	Ground Water	MW-10
JD23413-10F	04/12/21	18:04 NP	04/14/21	AQ	Groundwater Filtered	MW-10
JD23413-11	04/12/21	13:52 NP	04/14/21	AQ	Ground Water	MW-11
JD23413-11F	04/12/21	13:52 NP	04/14/21	AQ	Groundwater Filtered	MW-11
JD23413-12	04/12/21	16:08 NP	04/14/21	AQ	Ground Water	MW-11D
JD23413-12F	04/12/21	16:08 NP	04/14/21	AQ	Groundwater Filtered	MW-11D
JD23413-13	04/12/21	15:25 SCS	04/14/21	AQ	Ground Water	MW-12D

**Sample Summary**  
(continued)

**BL Companies**

**Job No: JD23413**

**Former TCCA, Oreland, PA**  
**Project No: 17L5438**

<b>Sample Number</b>	<b>Collected Date</b>	<b>Time By</b>	<b>Received</b>	<b>Matrix Code</b>	<b>Type</b>	<b>Client Sample ID</b>
JD23413-13F	04/12/21	15:25	04/14/21	AQ	Groundwater Filtered	MW-12D
JD23413-14	04/13/21	09:29	04/14/21	AQ	Ground Water	MW-13D
JD23413-14F	04/13/21	09:29	04/14/21	AQ	Groundwater Filtered	MW-13D

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-1	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D109139.D	1	04/20/21 18:28	EH	n/a	n/a	V4D4854
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-1	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		85-118%
17060-07-0	1,2-Dichloroethane-D4	101%		80-121%
2037-26-5	Toluene-D8	89%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID: MW-1	Date Sampled: 04/13/21
Lab Sample ID: JD23413-1	Date Received: 04/14/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	F198823.D	1	04/20/21 14:26	KLS	04/19/21 08:45	OP32844	EF8669

Run #1	Initial Volume	Final Volume
Run #2	1050 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-1	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	10.7	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-1	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	22%		10-82%
118-79-6	2,4,6-Tribromophenol	82%		37-139%
4165-60-0	Nitrobenzene-d5	73%		35-127%
321-60-8	2-Fluorobiphenyl	81%		35-121%
1718-51-0	Terphenyl-d14	48%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-1F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>2</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50399

(2) Instrument QC Batch: MA50410

(3) Prep QC Batch: MP26012

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-2	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D109140.D	1	04/20/21 19:01	EH	n/a	n/a	V4D4854
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-2	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		85-118%
17060-07-0	1,2-Dichloroethane-D4	104%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

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J = Indicates an estimated value  
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 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-2	Date Sampled: 04/13/21
Lab Sample ID: JD23413-2	Date Received: 04/14/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	F198836.D	1	04/20/21 20:21	KLS	04/19/21 08:45	OP32844	EF8669

Run #1	Initial Volume	Final Volume
Run #2	1030 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	0.23	0.97	0.13	ug/l	J
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	0.52	0.97	0.20	ug/l	J
50-32-8	Benzo(a)pyrene	0.66	0.97	0.21	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.94	0.97	0.20	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.66	0.97	0.33	ug/l	J
207-08-9	Benzo(k)fluoranthene	0.45	0.97	0.20	ug/l	J
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-2	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.63	ug/l	
218-01-9	Chrysene	0.66	0.97	0.17	ug/l	J
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	0.83	0.97	0.17	ug/l	J
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	0.97	0.32	ug/l	J
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.22	ug/l	
85-01-8	Phenanthrene	0.22	0.97	0.17	ug/l	J
129-00-0	Pyrene	0.80	0.97	0.21	ug/l	J
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-2	
<b>Lab Sample ID:</b> JD23413-2	<b>Date Sampled:</b> 04/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	17%		10-82%
118-79-6	2,4,6-Tribromophenol	62%		37-139%
4165-60-0	Nitrobenzene-d5	69%		35-127%
321-60-8	2-Fluorobiphenyl	73%		35-121%
1718-51-0	Terphenyl-d14	49%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-2F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Copper	41.6	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>2</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Zinc	201	20	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50399

(2) Instrument QC Batch: MA50410

(3) Prep QC Batch: MP26012

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-3	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D109141.D	1	04/20/21 19:34	EH	n/a	n/a	V4D4854
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-3	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		85-118%
17060-07-0	1,2-Dichloroethane-D4	102%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-3	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198824.D	1	04/20/21 14:53	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-3	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	
<b>Lab Sample ID:</b> JD23413-3	<b>Date Sampled:</b> 04/12/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	30%		10-82%
118-79-6	2,4,6-Tribromophenol	92%		37-139%
4165-60-0	Nitrobenzene-d5	78%		35-127%
321-60-8	2-Fluorobiphenyl	86%		35-121%
1718-51-0	Terphenyl-d14	90%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-3F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Chromium	19.4	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>2</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/19/21 LL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50399

(2) Instrument QC Batch: MA50410

(3) Prep QC Batch: MP26012

(4) Prep QC Batch: MP26121

RL = Reporting Limit



## Report of Analysis

Client Sample ID: MW-4	Date Sampled: 04/13/21
Lab Sample ID: JD23413-4	Date Received: 04/14/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190390.D	1	04/20/21 17:08	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-4	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	104%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-4	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	F198825.D	1	04/20/21 15:21	KLS	04/19/21 08:45	OP32844	EF8669

Run #1	Initial Volume	Final Volume
Run #2	1030 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	ND	0.97	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.97	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.97	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.97	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.97	0.33	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.97	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-4	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	39.1	1.9	0.63	ug/l	
218-01-9	Chrysene	ND	0.97	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.97	0.17	ug/l	
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.97	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.22	ug/l	
85-01-8	Phenanthrene	ND	0.97	0.17	ug/l	
129-00-0	Pyrene	ND	0.97	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-4	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	24%		10-82%
118-79-6	2,4,6-Tribromophenol	80%		37-139%
4165-60-0	Nitrobenzene-d5	80%		35-127%
321-60-8	2-Fluorobiphenyl	86%		35-121%
1718-51-0	Terphenyl-d14	49%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-4F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-5	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190391.D	1	04/20/21 17:37	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-5	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	104%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-5	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198834.D	1	04/20/21 19:26	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	0.28	0.95	0.20	ug/l	J
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	0.92	0.95	0.22	ug/l	J

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-5	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	19.7	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	1.7	1.9	1.6	ug/l	J
206-44-0	Fluoranthene	0.38	0.95	0.16	ug/l	J
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	0.33	0.95	0.21	ug/l	J
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-5	
<b>Lab Sample ID:</b> JD23413-5	<b>Date Sampled:</b> 04/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-82%
118-79-6	2,4,6-Tribromophenol	94%		37-139%
4165-60-0	Nitrobenzene-d5	74%		35-127%
321-60-8	2-Fluorobiphenyl	86%		35-121%
1718-51-0	Terphenyl-d14	56%		28-135%

- (a) Associated CCV outside of control limits high, sample was ND.  
 (b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-5F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	15.2	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium <sup>a</sup>	< 20	20	ug/l	2	04/19/21	04/28/21 ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium <sup>a</sup>	< 20	20	ug/l	2	04/19/21	04/28/21 ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Instrument QC Batch: MA50436

(4) Prep QC Batch: MP26017

(5) Prep QC Batch: MP26121

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-6	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190395.D	1	04/20/21 19:31	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	8.3	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	0.83	1.0	0.60	ug/l	J
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-6	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	0.91	1.0	0.90	ug/l	J
108-88-3	Toluene	0.64	1.0	0.53	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	1.8	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	0.98	1.0	0.78	ug/l	J
95-47-6	o-Xylene	1.3	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	2.3	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		85-118%
17060-07-0	1,2-Dichloroethane-D4	101%		80-121%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-6	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198835.D	1	04/20/21 19:54	KLS	04/19/21 08:45	OP32844	EF8669
Run #2	F198843.D	5	04/21/21 11:02	KLS	04/19/21 08:45	OP32844	EF8670

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2	1050 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	0.49	0.95	0.20	ug/l	J
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-6	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	6.3	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.4	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	2.5	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	160 <sup>c</sup>	4.8	1.1	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%	25%	10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-6	
<b>Lab Sample ID:</b> JD23413-6	<b>Date Sampled:</b> 04/12/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	23%	15%	10-82%
118-79-6	2,4,6-Tribromophenol	82%	64%	37-139%
4165-60-0	Nitrobenzene-d5	65%	55%	35-127%
321-60-8	2-Fluorobiphenyl	72%	61%	35-121%
1718-51-0	Terphenyl-d14	72%	60%	28-135%

- (a) Associated CCV outside of control limits high, sample was ND.  
 (b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.  
 (c) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-6F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-7	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190392.D	1	04/20/21 18:06	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-7	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		85-118%
17060-07-0	1,2-Dichloroethane-D4	95%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-7	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198826.D	1	04/20/21 15:48	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-7	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-7	
<b>Lab Sample ID:</b> JD23413-7	<b>Date Sampled:</b> 04/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	24%		10-82%
118-79-6	2,4,6-Tribromophenol	92%		37-139%
4165-60-0	Nitrobenzene-d5	81%		35-127%
321-60-8	2-Fluorobiphenyl	89%		35-121%
1718-51-0	Terphenyl-d14	62%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-7F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-8	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190393.D	1	04/20/21 18:34	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-8	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-8	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198827.D	1	04/20/21 16:16	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	ND	0.97	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.97	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.97	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.97	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.97	0.33	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.97	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-8	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.63	ug/l	
218-01-9	Chrysene	ND	0.97	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.97	0.17	ug/l	
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.97	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.22	ug/l	
85-01-8	Phenanthrene	ND	0.97	0.17	ug/l	
129-00-0	Pyrene	ND	0.97	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		10-83%

ND = Not detected

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RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-8	Date Sampled: 04/12/21
Lab Sample ID: JD23413-8	Date Received: 04/14/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	25%		10-82%
118-79-6	2,4,6-Tribromophenol	88%		37-139%
4165-60-0	Nitrobenzene-d5	67%		35-127%
321-60-8	2-Fluorobiphenyl	75%		35-121%
1718-51-0	Terphenyl-d14	79%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-8F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	14.6	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D163626.D	1	04/20/21 14:42	ED	n/a	n/a	V3D6969
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	0.65	1.0	0.55	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	0.61	1.0	0.60	ug/l	J
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	15.9	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.1	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	16.8	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		85-118%
17060-07-0	1,2-Dichloroethane-D4	92%		80-121%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198828.D	1	04/20/21 16:43	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-82%
118-79-6	2,4,6-Tribromophenol	95%		37-139%
4165-60-0	Nitrobenzene-d5	70%		35-127%
321-60-8	2-Fluorobiphenyl	78%		35-121%
1718-51-0	Terphenyl-d14	88%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-9F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-10	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D163627.D	1	04/20/21 15:07	ED	n/a	n/a	V3D6969
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-10	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-10	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198829.D	1	04/20/21 17:10	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	ND	0.97	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.97	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.97	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.97	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.97	0.33	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.97	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-10	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.63	ug/l	
218-01-9	Chrysene	ND	0.97	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.97	0.17	ug/l	
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.97	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.22	ug/l	
85-01-8	Phenanthrene	ND	0.97	0.17	ug/l	
129-00-0	Pyrene	ND	0.97	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-10	
<b>Lab Sample ID:</b> JD23413-10	<b>Date Sampled:</b> 04/12/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-82%
118-79-6	2,4,6-Tribromophenol	89%		37-139%
4165-60-0	Nitrobenzene-d5	73%		35-127%
321-60-8	2-Fluorobiphenyl	82%		35-121%
1718-51-0	Terphenyl-d14	69%		28-135%

- (a) Associated CCV outside of control limits high, sample was ND.  
 (b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-10F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-11	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D163628.D	1	04/20/21 15:32	ED	n/a	n/a	V3D6969
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-11	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		85-118%
17060-07-0	1,2-Dichloroethane-D4	93%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-11	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198830.D	1	04/20/21 17:38	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.8	0.78	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.8	0.85	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.8	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.8	1.2	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.85	ug/l	
	3&4-Methylphenol	ND	1.9	0.84	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.91	ug/l	
100-02-7	4-Nitrophenol	ND	9.5	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.8	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.37	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.88	ug/l	
83-32-9	Acenaphthene	ND	0.95	0.18	ug/l	
208-96-8	Acenaphthylene	ND	0.95	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.95	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.8	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.95	0.19	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.95	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.95	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.95	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.95	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.95	0.20	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.22	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.8	0.32	ug/l	
86-74-8	Carbazole	ND	0.95	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-11	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.62	ug/l	
218-01-9	Chrysene	ND	0.95	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.26	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.38	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.95	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.95	0.45	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.48	ug/l	
123-91-1	1,4-Dioxane	ND	0.95	0.63	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.95	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.47	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.22	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.0	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.95	0.16	ug/l	
86-73-7	Fluorene	ND	0.95	0.16	ug/l	
118-74-1	Hexachlorobenzene	ND	0.95	0.31	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.95	0.47	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.6	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.37	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.95	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.26	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	0.26	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.8	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	0.42	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.21	ug/l	
85-01-8	Phenanthrene	ND	0.95	0.17	ug/l	
129-00-0	Pyrene	ND	0.95	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	20%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-11	
<b>Lab Sample ID:</b> JD23413-11	<b>Date Sampled:</b> 04/12/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	14%		10-82%
118-79-6	2,4,6-Tribromophenol	31% <sup>c</sup>		37-139%
4165-60-0	Nitrobenzene-d5	72%		35-127%
321-60-8	2-Fluorobiphenyl	68%		35-121%
1718-51-0	Terphenyl-d14	40%		28-135%

- (a) Associated CCV outside of control limits high, sample was ND.  
 (b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.  
 (c) Outside of in house control limits.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-11F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26121

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D163629.D	1	04/20/21 15:57	ED	n/a	n/a	V3D6969
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	0.46	0.50	0.43	ug/l	J
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	F198831.D	1	04/20/21 18:05	KLS	04/19/21 08:45	OP32844	EF8669

Run #1	Initial Volume	Final Volume
Run #2	1030 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	ND	0.97	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.97	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.97	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.97	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.97	0.33	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.97	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.63	ug/l	
218-01-9	Chrysene	ND	0.97	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	4.3	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.97	0.17	ug/l	
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.97	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	0.79	4.9	0.22	ug/l	J
85-01-8	Phenanthrene	ND	0.97	0.17	ug/l	
129-00-0	Pyrene	ND	0.97	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		10-83%

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B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	19%		10-82%
118-79-6	2,4,6-Tribromophenol	79%		37-139%
4165-60-0	Nitrobenzene-d5	61%		35-127%
321-60-8	2-Fluorobiphenyl	66%		35-121%
1718-51-0	Terphenyl-d14	61%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-12F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26122

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-13	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D163630.D	1	04/20/21 16:22	ED	n/a	n/a	V3D6969
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.3	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-13	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

(a) Associated CCV outside of control limits low.

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 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-13	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198832.D	1	04/20/21 18:32	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	0.82	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	0.89	ug/l	
120-83-2	2,4-Dichlorophenol	ND	2.0	1.3	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	5.0	1.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	5.0	1.3	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.89	ug/l	
	3&4-Methylphenol	ND	2.0	0.88	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	0.96	ug/l	
100-02-7	4-Nitrophenol	ND	10	1.2	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.39	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	1.5	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.92	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
98-86-2	Acetophenone	ND	2.0	0.21	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
1912-24-9	Atrazine	ND	2.0	0.45	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.40	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.46	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.24	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	5.0	0.34	ug/l	
86-74-8	Carbazole	ND	1.0	0.23	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-13	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	2.0	0.65	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.28	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.25	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	2.0	0.40	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.37	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	1.0	0.55	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	1.0	0.48	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	2.0	0.51	ug/l	
123-91-1	1,4-Dioxane	ND	1.0	0.66	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.50	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.26	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.22	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.7	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.17	ug/l	
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.8	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.39	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.33	ug/l	
78-59-1	Isophorone	ND	2.0	0.28	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.21	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.28	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	5.0	0.39	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.44	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.48	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	ND	1.0	0.22	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	2.0	0.37	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-12D	
<b>Lab Sample ID:</b> JD23413-13	<b>Date Sampled:</b> 04/12/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	25%		10-82%
118-79-6	2,4,6-Tribromophenol	91%		37-139%
4165-60-0	Nitrobenzene-d5	71%		35-127%
321-60-8	2-Fluorobiphenyl	78%		35-121%
1718-51-0	Terphenyl-d14	73%		28-135%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	04/12/21
Lab Sample ID:	JD23413-13F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26122

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-14	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X190394.D	1	04/20/21 19:03	ED	n/a	n/a	VX8234
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	1.2	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-14	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	0.91	1.0	0.90	ug/l	J
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	1.2	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		85-118%
17060-07-0	1,2-Dichloroethane-D4	101%		80-121%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-14	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F198833.D	1	04/20/21 18:59	KLS	04/19/21 08:45	OP32844	EF8669
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.9	0.80	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.9	0.87	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	1.2	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.9	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.9	1.3	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.86	ug/l	
	3&4-Methylphenol	ND	1.9	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	9.7	1.1	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.9	1.3	ug/l	
108-95-2	Phenol	ND	1.9	0.38	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.90	ug/l	
83-32-9	Acenaphthene	ND	0.97	0.19	ug/l	
208-96-8	Acenaphthylene	ND	0.97	0.13	ug/l	
98-86-2	Acetophenone	ND	1.9	0.20	ug/l	
120-12-7	Anthracene	ND	0.97	0.20	ug/l	
1912-24-9	Atrazine	ND	1.9	0.43	ug/l	
100-52-7	Benzaldehyde	ND	4.9	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.97	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.97	0.21	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.97	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.97	0.33	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.97	0.20	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.39	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.44	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.97	0.21	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.23	ug/l	
106-47-8	4-Chloroaniline <sup>b</sup>	ND	4.9	0.33	ug/l	
86-74-8	Carbazole	ND	0.97	0.22	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-14	Date Received:	04/14/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.63	ug/l	
218-01-9	Chrysene	ND	0.97	0.17	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.27	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.24	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.36	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.97	0.54	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.97	0.46	ug/l	
91-94-1	3,3'-Dichlorobenzidine <sup>b</sup>	ND	1.9	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	0.97	0.64	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.97	0.32	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.23	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.25	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.21	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	6.1	1.9	1.6	ug/l	
206-44-0	Fluoranthene	ND	0.97	0.17	ug/l	
86-73-7	Fluorene	ND	0.97	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	0.97	0.32	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.97	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.7	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.38	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.97	0.32	ug/l	
78-59-1	Isophorone	ND	1.9	0.27	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	0.27	ug/l	
99-09-2	3-Nitroaniline <sup>b</sup>	ND	4.9	0.38	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	0.43	ug/l	
91-20-3	Naphthalene	ND	0.97	0.23	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.47	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.22	ug/l	
85-01-8	Phenanthrene	ND	0.97	0.17	ug/l	
129-00-0	Pyrene	ND	0.97	0.21	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%		10-83%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-13D	
<b>Lab Sample ID:</b> JD23413-14	<b>Date Sampled:</b> 04/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 04/14/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	26%		10-82%
118-79-6	2,4,6-Tribromophenol	97%		37-139%
4165-60-0	Nitrobenzene-d5	79%		35-127%
321-60-8	2-Fluorobiphenyl	87%		35-121%
1718-51-0	Terphenyl-d14	79%		28-135%

- (a) Associated CCV outside of control limits high, sample was ND.  
 (b) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	04/13/21
Lab Sample ID:	JD23413-14F	Date Received:	04/14/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	04/21/21	04/23/21 LL	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	04/19/21	04/22/21 LL	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50410

(2) Instrument QC Batch: MA50416

(3) Prep QC Batch: MP26017

(4) Prep QC Batch: MP26122

RL = Reporting Limit



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08819
TEL: 732-329-0200 FAX: 732-329-3488/3480
www.sgs.com/ehsusa

EHSQA-QAC-0023-02-FORM-Standard COC

CW

FED-Ex Tracking #
State Order Control # JS-04621-449
SGS Order # JD23413

Client / Reporting Information, Project Information, Billing Information, Project Contact, Sample(s) Name(s), Project Manager

Table with columns: Sample #, Field ID / Point of Collection, MECH/VEH, Date, Time, Sampled by, Cont (D), Cont (C), Matrix, # of bottles, # of containers, VOCs, SVOCs, Priority Analytical Metals (PAM), Requested Analysis, Matrix Codes, LAB USE ONLY

Turn Around Time (Business Days), Approved By (SGS Pst.), Deliverable, Comments / Special Instructions

Chain of Custody table with columns: Released by, Date / Time, Received By, Date / Time, Custody Seal #, Held, Preserved when applicable, On line, Cooler Temp. C



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3498/3480
www.sgs.com/labusa

EHS-0402-02-02 FORM Standard COC

FED-Ex Tracking #
Bottle Order Control #
SGS Quote #
SGS Job # JD 23413

Client / Reporting Information
Project Information
Requested Analysis
Matrix Codes
Collection table with columns for Date, Time, Sampled by, etc.
Turn Around Time (Business Days)
Deliverable
Comments / Special Instructions
Chain of Custody table with columns for Requested by, Date/Time, Received by, etc.

JD23413: Chain of Custody

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## SGS Sample Receipt Summary

**Job Number:** JD23413

**Client:** BL COMPANIES

**Project:** FORMER TCCA, ORELAND, PA

**Date / Time Received:** 4/14/2021 5:12:00 PM

**Delivery Method:** \_\_\_\_\_

**Airbill #s:** \_\_\_\_\_

**Cooler Temps (Raw Measured) °C:** Cooler 1: (3.2); Cooler 2: (3.9); Cooler 3: (4.1); Cooler 4: (3.0);

**Cooler Temps (Corrected) °C:** Cooler 1: (1.9); Cooler 2: (2.6); Cooler 3: (2.8); Cooler 4: (1.7);

<u>Cooler Security</u>	<u>Y or N</u>			<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	4	

<u>Quality Control Preservation</u>	<u>Y or N</u>		<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y or N</u>		<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 212820	pH 12+: 203117A	Other: (Specify) _____
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Comments	
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SM089-02 Rev. Date 12/1/16

**JD23413: Chain of Custody**

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Responded to by:

Response Date:

**JD23413: Chain of Custody**  
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## SGS Sample Receipt Summary

Job Number: JD23413

Client: BL COMPANIES

Project: FORMER TCCA, ORELAND PA

Date / Time Received: 4/14/2021

Delivery Method: SGS Courier

Airbill #s:

Cooler Temps (Raw Measured) °C: 3.2, 3.9, 4.1, 3.0

Cooler Temps (Corrected) °C:

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	_____		
3. Cooler media:	_____		
4. No. Coolers:	4		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 212820	pH 12+: 203117A	Other: (Specify) _____
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Comments	Sample-13) Received broken cap on one of three VOC vialsl with head space greater than 6mm. Labeled as screen. Please confirm.
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SM089-02 Rev. Date 12/11/16

**JD23413: Chain of Custody**

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Proceed as noted

**JD23413: Chain of Custody**  
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## Sample Summary

**BL Companies**

**Job No: JD28351**

**Former TCCA, Oreland, PA  
Project No: TM-07121-162 PO#17L5438**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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**This report contains results reported as ND = Not detected. The following applies:  
Organics ND = Not detected above the MDL**

JD28351-1	07/14/21	08:14	SCS	07/15/21	AQ	Ground Water	MW-1
JD28351-1F	07/14/21	08:14	SCS	07/15/21	AQ	Groundwater Filtered	MW-1
JD28351-2	07/14/21	12:01	SCS	07/15/21	AQ	Ground Water	MW-2
JD28351-2F	07/14/21	12:01	SCS	07/15/21	AQ	Groundwater Filtered	MW-2
JD28351-3	07/14/21	14:25	SCS	07/15/21	AQ	Ground Water	MW-3
JD28351-3F	07/14/21	14:25	SCS	07/15/21	AQ	Groundwater Filtered	MW-3
JD28351-4	07/14/21	08:55	SCS	07/15/21	AQ	Ground Water	MW-4
JD28351-4F	07/14/21	08:55	SCS	07/15/21	AQ	Groundwater Filtered	MW-4
JD28351-5	07/14/21	10:50	SCS	07/15/21	AQ	Ground Water	MW-5
JD28351-5F	07/14/21	10:50	SCS	07/15/21	AQ	Groundwater Filtered	MW-5
JD28351-6	07/13/21	13:35	SCS	07/15/21	AQ	Ground Water	MW-6
JD28351-6F	07/13/21	13:35	SCS	07/15/21	AQ	Groundwater Filtered	MW-6

**Sample Summary**  
(continued)

**BL Companies**

**Job No: JD28351**

**Former TCCA, Oreland, PA**  
**Project No: TM-07121-162 PO#17L5438**

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD28351-7	07/14/21	07:29 SCS	07/15/21	AQ	Ground Water	MW-7
JD28351-7F	07/14/21	07:29 SCS	07/15/21	AQ	Groundwater Filtered	MW-7
JD28351-8	07/14/21	15:18 SCS	07/15/21	AQ	Ground Water	MW-8
JD28351-8F	07/14/21	15:18 SCS	07/15/21	AQ	Groundwater Filtered	MW-8
JD28351-9	07/13/21	14:10 SCS	07/15/21	AQ	Ground Water	MW-9
JD28351-9F	07/13/21	14:10 SCS	07/15/21	AQ	Groundwater Filtered	MW-9
JD28351-10	07/14/21	09:25 SCS	07/15/21	AQ	Ground Water	MW-10
JD28351-10F	07/14/21	09:25 SCS	07/15/21	AQ	Groundwater Filtered	MW-10
JD28351-11	07/13/21	16:42 SCS	07/15/21	AQ	Ground Water	MW-11
JD28351-11F	07/13/21	16:42 SCS	07/15/21	AQ	Groundwater Filtered	MW-11
JD28351-12	07/14/21	15:16 SCS	07/15/21	AQ	Ground Water	MW-11D
JD28351-12F	07/14/21	15:16 SCS	07/15/21	AQ	Groundwater Filtered	MW-11D
JD28351-13	07/13/21	15:57 SCS	07/15/21	AQ	Ground Water	MW-12D

**Sample Summary**  
(continued)

**BL Companies**

**Job No: JD28351**

**Former TCCA, Oreland, PA**  
**Project No: TM-07121-162 PO#17L5438**

<b>Sample Number</b>	<b>Collected Date</b>	<b>Time By</b>	<b>Received</b>	<b>Matrix Code</b>	<b>Type</b>	<b>Client Sample ID</b>
JD28351-13F	07/13/21	15:57	SCS	07/15/21	AQ Groundwater Filtered	MW-12D
JD28351-14	07/14/21	12:17	SCS	07/15/21	AQ Ground Water	MW-13D
JD28351-14F	07/14/21	12:17	SCS	07/15/21	AQ Groundwater Filtered	MW-13D

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-1	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211728.D	1	07/25/21 18:23	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-1	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		85-118%
17060-07-0	1,2-Dichloroethane-D4	90%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-1	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119643.D	1	07/27/21 21:43	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-1	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1	
<b>Lab Sample ID:</b> JD28351-1	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	30%		10-64%
118-79-6	2,4,6-Tribromophenol	81%		31-130%
4165-60-0	Nitrobenzene-d5	107%		28-126%
321-60-8	2-Fluorobiphenyl	89%		26-114%
1718-51-0	Terphenyl-d14	59%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-1F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID: MW-2	Date Sampled: 07/14/21
Lab Sample ID: JD28351-2	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211729.D	1	07/25/21 18:52	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-2	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		85-118%
17060-07-0	1,2-Dichloroethane-D4	90%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-2	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119644.D	1	07/27/21 22:07	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-2	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-2	
<b>Lab Sample ID:</b> JD28351-2	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	28%		10-64%
118-79-6	2,4,6-Tribromophenol	94%		31-130%
4165-60-0	Nitrobenzene-d5	117%		28-126%
321-60-8	2-Fluorobiphenyl	97%		26-114%
1718-51-0	Terphenyl-d14	75%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-2F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	24.8	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	109	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-3	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211730.D	1	07/25/21 19:20	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-3	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.0	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		85-118%
17060-07-0	1,2-Dichloroethane-D4	90%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-3	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119645.D	1	07/27/21 22:32	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

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J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-3	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	1.3	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	
<b>Lab Sample ID:</b> JD28351-3	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	31%		10-64%
118-79-6	2,4,6-Tribromophenol	94%		31-130%
4165-60-0	Nitrobenzene-d5	116%		28-126%
321-60-8	2-Fluorobiphenyl	95%		26-114%
1718-51-0	Terphenyl-d14	85%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-3F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-4	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211731.D	1	07/25/21 19:49	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-4	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		85-118%
17060-07-0	1,2-Dichloroethane-D4	90%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-4	Date Sampled: 07/14/21
Lab Sample ID: JD28351-4	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119646.D	1	07/27/21 22:56	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-4	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-73%

ND = Not detected

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RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-4	Date Sampled: 07/14/21
Lab Sample ID: JD28351-4	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	23%		10-64%
118-79-6	2,4,6-Tribromophenol	81%		31-130%
4165-60-0	Nitrobenzene-d5	116%		28-126%
321-60-8	2-Fluorobiphenyl	95%		26-114%
1718-51-0	Terphenyl-d14	71%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

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 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-4F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-5	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211732.D	1	07/25/21 20:17	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	0.73	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-5	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		85-118%
17060-07-0	1,2-Dichloroethane-D4	91%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-5	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119647.D	1	07/27/21 23:20	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.63	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.49	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.53	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	2.9	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-5	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	0.33	0.91	0.17	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-5	
<b>Lab Sample ID:</b> JD28351-5	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	36%		10-64%
118-79-6	2,4,6-Tribromophenol	97%		31-130%
4165-60-0	Nitrobenzene-d5	114%		28-126%
321-60-8	2-Fluorobiphenyl	94%		26-114%
1718-51-0	Terphenyl-d14	61%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-5F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	14.0	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	12.5	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-6	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B166292.D	1	07/23/21 21:06	BK	n/a	n/a	V3B7496
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	44.5	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	5.1	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-6	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.79	1.0	0.65	ug/l	J
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	0.94	1.0	0.90	ug/l	J
108-88-3	Toluene	4.2	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	2.2	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	0.88	1.0	0.79	ug/l	J
	m,p-Xylene	10.5	1.0	0.78	ug/l	
95-47-6	o-Xylene	7.4	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	17.9	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

(a) Associated CCV outside of control limits low.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-6	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119648.D	1	07/27/21 23:44	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-6	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-6	Date Sampled: 07/13/21
Lab Sample ID: JD28351-6	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	39%		10-64%
118-79-6	2,4,6-Tribromophenol	102%		31-130%
4165-60-0	Nitrobenzene-d5	113%		28-126%
321-60-8	2-Fluorobiphenyl	93%		26-114%
1718-51-0	Terphenyl-d14	75%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-6F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	12.7	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-7	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B166296.D	1	07/23/21 23:03	BK	n/a	n/a	V3B7496
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-7	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		85-118%
17060-07-0	1,2-Dichloroethane-D4	105%		80-121%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

(a) Associated CCV outside of control limits low.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-7	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119649.D	1	07/28/21 00:09	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-7	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-7	
<b>Lab Sample ID:</b> JD28351-7	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	37%		10-64%
118-79-6	2,4,6-Tribromophenol	91%		31-130%
4165-60-0	Nitrobenzene-d5	113%		28-126%
321-60-8	2-Fluorobiphenyl	92%		26-114%
1718-51-0	Terphenyl-d14	82%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-7F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-8	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B166297.D	1	07/23/21 23:32	BK	n/a	n/a	V3B7496
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-8	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		85-118%
17060-07-0	1,2-Dichloroethane-D4	108%		80-121%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

(a) Associated CCV outside of control limits low.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-8	Date Sampled: 07/14/21
Lab Sample ID: JD28351-8	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119650.D	1	07/28/21 00:33	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-8	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		10-73%

ND = Not detected

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RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-8	
<b>Lab Sample ID:</b> JD28351-8	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	30%		10-64%
118-79-6	2,4,6-Tribromophenol	90%		31-130%
4165-60-0	Nitrobenzene-d5	102%		28-126%
321-60-8	2-Fluorobiphenyl	86%		26-114%
1718-51-0	Terphenyl-d14	77%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-8F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	2.3	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	15.2	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	11.6	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-9	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211745.D	1	07/26/21 12:31	BK	n/a	n/a	V2A9213
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	0.71	1.0	0.55	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.69	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	0.82	1.0	0.60	ug/l	J
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	22.7	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.5	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-9	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.1	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	18.5	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		85-118%
17060-07-0	1,2-Dichloroethane-D4	94%		80-121%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-9	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119656.D	1	07/28/21 02:58	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.63	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.49	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.53	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	0.50	0.91	0.39	ug/l	J
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	0.63	0.91	0.51	ug/l	J
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	1.1	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	2.1	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	2.8	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	2.0	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	0.97	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-9	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	1.6	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	0.57	0.91	0.17	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	2.4	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	2.2	0.91	0.58	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	0.78	0.91	0.44	ug/l	J
129-00-0	Pyrene	2.1	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-9	
<b>Lab Sample ID:</b> JD28351-9	<b>Date Sampled:</b> 07/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	19%		10-64%
118-79-6	2,4,6-Tribromophenol	56%		31-130%
4165-60-0	Nitrobenzene-d5	97%		28-126%
321-60-8	2-Fluorobiphenyl	85%		26-114%
1718-51-0	Terphenyl-d14	75%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-9F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-10	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211733.D	1	07/25/21 20:46	BK	n/a	n/a	V2A9212
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-10	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		85-118%
17060-07-0	1,2-Dichloroethane-D4	92%		80-121%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-10	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119651.D	1	07/28/21 00:57	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-10	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-10	
<b>Lab Sample ID:</b> JD28351-10	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	37%		10-64%
118-79-6	2,4,6-Tribromophenol	93%		31-130%
4165-60-0	Nitrobenzene-d5	111%		28-126%
321-60-8	2-Fluorobiphenyl	92%		26-114%
1718-51-0	Terphenyl-d14	86%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-10F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-11	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211746.D	1	07/26/21 12:59	BK	n/a	n/a	V2A9213
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-11	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		85-118%
17060-07-0	1,2-Dichloroethane-D4	93%		80-121%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-11	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119652.D	1	07/28/21 01:22	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-11	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	4.9	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-11	
<b>Lab Sample ID:</b> JD28351-11	<b>Date Sampled:</b> 07/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	21%		10-64%
118-79-6	2,4,6-Tribromophenol	55%		31-130%
4165-60-0	Nitrobenzene-d5	98%		28-126%
321-60-8	2-Fluorobiphenyl	81%		26-114%
1718-51-0	Terphenyl-d14	61%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-11F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-12	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B166298.D	1	07/24/21 00:01	BK	n/a	n/a	V3B7496
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-12	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		85-118%
17060-07-0	1,2-Dichloroethane-D4	108%		80-121%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	89%		80-120%

(a) Associated CCV outside of control limits low.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-11D	Date Sampled: 07/14/21
Lab Sample ID: JD28351-12	Date Received: 07/15/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119653.D	1	07/28/21 01:46	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-12	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-11D	
<b>Lab Sample ID:</b> JD28351-12	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	42%		10-64%
118-79-6	2,4,6-Tribromophenol	102%		31-130%
4165-60-0	Nitrobenzene-d5	115%		28-126%
321-60-8	2-Fluorobiphenyl	99%		26-114%
1718-51-0	Terphenyl-d14	99%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-12F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-13	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B166295.D	1	07/23/21 22:34	BK	n/a	n/a	V3B7496
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-13	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.0	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	1.9	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		85-118%
17060-07-0	1,2-Dichloroethane-D4	102%		80-121%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	89%		80-120%

(a) Associated CCV outside of control limits low.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-13	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119654.D	1	07/28/21 02:10	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.7	0.34	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.7	0.49	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.7	0.62	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.7	0.64	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.7	0.50	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.43	ug/l	
	3&4-Methylphenol	ND	1.9	0.33	ug/l	
88-75-5	2-Nitrophenol	ND	3.7	0.37	ug/l	
100-02-7	4-Nitrophenol	ND	7.4	0.42	ug/l	
87-86-5	Pentachlorophenol <sup>a</sup>	ND	3.7	0.54	ug/l	
108-95-2	Phenol	ND	1.9	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.7	0.59	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.7	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.7	0.55	ug/l	
83-32-9	Acenaphthene	ND	0.93	0.57	ug/l	
208-96-8	Acenaphthylene	ND	0.93	0.39	ug/l	
98-86-2	Acetophenone	ND	1.9	0.48	ug/l	
120-12-7	Anthracene	ND	0.93	0.51	ug/l	
1912-24-9	Atrazine	ND	1.9	0.66	ug/l	
100-52-7	Benzaldehyde	ND	3.7	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.93	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.93	0.58	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.93	0.53	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.93	0.59	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.93	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.51	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.80	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.93	0.54	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.40	ug/l	
106-47-8	4-Chloroaniline	ND	3.7	0.49	ug/l	
86-74-8	Carbazole	ND	0.93	0.53	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-13	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.32	ug/l	
218-01-9	Chrysene	ND	0.93	0.48	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.42	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.46	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.55	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.93	0.51	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.93	0.52	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.93	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.93	0.46	ug/l	
132-64-9	Dibenzofuran	ND	3.7	0.67	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.49	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.54	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.51	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.93	0.53	ug/l	
86-73-7	Fluorene	ND	0.93	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	0.93	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.93	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.4	0.91	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.51	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.93	0.59	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.9	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.93	0.60	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.7	0.57	ug/l	
99-09-2	3-Nitroaniline	ND	3.7	0.59	ug/l	
100-01-6	4-Nitroaniline	ND	3.7	0.69	ug/l	
91-20-3	Naphthalene	ND	0.93	0.41	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.9	0.39	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.9	0.60	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.7	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.93	0.45	ug/l	
129-00-0	Pyrene	ND	0.93	0.46	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.45	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-12D	
<b>Lab Sample ID:</b> JD28351-13	<b>Date Sampled:</b> 07/13/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	34%		10-64%
118-79-6	2,4,6-Tribromophenol	80%		31-130%
4165-60-0	Nitrobenzene-d5	94%		28-126%
321-60-8	2-Fluorobiphenyl	80%		26-114%
1718-51-0	Terphenyl-d14	84%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	07/13/21
Lab Sample ID:	JD28351-13F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-14	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A211747.D	1	07/26/21 13:28	BK	n/a	n/a	V2A9213
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-14	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.1	1.0	0.90	ug/l	
108-88-3	Toluene <sup>a</sup>	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	1.7	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		85-118%
17060-07-0	1,2-Dichloroethane-D4	93%		80-121%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) This compound in blank spike is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-14	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M119655.D	1	07/28/21 02:34	KLS	07/20/21 14:00	OP34421	E2M5367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	0.62	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	0.48	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	0.32	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol a	ND	3.6	0.52	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-14	Date Received:	07/15/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone <sup>a</sup>	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene <sup>a</sup>	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine <sup>a</sup>	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	52%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-13D	
<b>Lab Sample ID:</b> JD28351-14	<b>Date Sampled:</b> 07/14/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/15/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	36%		10-64%
118-79-6	2,4,6-Tribromophenol	91%		31-130%
4165-60-0	Nitrobenzene-d5	103%		28-126%
321-60-8	2-Fluorobiphenyl	89%		26-114%
1718-51-0	Terphenyl-d14	97%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	07/14/21
Lab Sample ID:	JD28351-14F	Date Received:	07/15/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Arsenic	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Beryllium	< 1.0	1.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Cadmium	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Copper	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Lead	< 3.0	3.0	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	07/23/21	07/23/21	MS	SW846 7470A <sup>1</sup> SW846 7470A <sup>4</sup>
Nickel	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Selenium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Silver	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Thallium	< 10	10	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>
Zinc	< 20	20	ug/l	1	07/21/21	07/22/21	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA50870

(2) Instrument QC Batch: MA50873

(3) Prep QC Batch: MP27540

(4) Prep QC Batch: MP27605

RL = Reporting Limit



GW

### CHAIN OF CUSTODY

SGS North America Inc. - Dayton  
 2235 Route 130, Dayton, NJ 08810  
 TEL: 732-329-0200 FAX: 732-329-3499/3480  
 www.sgs.com/ehausa

FED EX Tracking #  
 SGS Quote #  
 Bottle Order Contact # **TM-07121-762**  
 SGS Job # **JD28357**

EHS-AOC-0023-02 FORM Standard COC

Client / Reporting Information		Project Information		Requested Analysis												Matrix Codes		
Company Name: <b>BL Companies</b>		Project Name: <b>Former TCCA, Oreland, PA</b>		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">           V82100TCL20            ABLV82170TCL20            PM 13 [FF]            MET-SU846         </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">           DW - Drinking Water            GW - Ground Water            WW - Water            SW - Surface Water            SO - Soil            SL - Sludge            SED - Sediment            OI - Oil            LIQ - Other Liquid            AIR - Air            SOL - Other Solid            WP - Wipe            FB - Field Blank            EB - Equipment Blank            RB - Rinse Blank            TB - Trip Blank         </div> </div>												Matrix Codes		
Street Address: <b>1100 First Ave</b>		Street: <b>1725 Walnut Ave</b>																
City, State, Zip: <b>King of Prussia, PA 19406</b>		City, State, Zip: <b>Oreland, PA</b>																
Project Contact: <b>m.mcgowan@blcompanies.com</b>		Project # <b>TM-07121-162</b>																
Phone # <b>(609) 410-6869</b>		Client Purchase Order # <b>17LS438</b>																
Sampler(s) Name(s): <b>Michael Reynolds, Sam Schuetz</b>		Project Manager: <b>Mike McGowan</b>																
SGS Sample #	Field ID / Point of Collection	MECH (D) / Vis #	Date	Time	Sampled by	Grab (G) / Comp (C)	Matrix	# of bottles	HCl	NO3H	PHD	PHSD	NONE	DI Water	MEDIA	ENDURE	LAB USE ONLY	
1	MW-1		7/14/21	8:21	SCS	G	6	3									E3U	
2	MW-2		7/14/21	11:01	SCS												A2	
3	MW-3		7/14/21	14:25	SCS												V1128	
4	MW-4		7/14/21	8:55	SCS													
5	MW-5		7/14/21	10:50	SCS													
6	MW-6		7/13/21	13:35	SCS													
7	MW-7		7/14/21	7:29	CLR													
8	MW-8		7/14/21	15:18	SCS													
9	MW-9		7/13/21	14:10	CLR													
10	MW-10		7/14/21	9:25	CLR													
11	MW-11		7/13/21	16:42	CLR													
12	MW-11D		7/14/21	15:16	CLR													

Turn Around Time (Business Days)		Approved By (SGS PM) / Date:		Deliverable												Comments / Special Instructions	
<input checked="" type="checkbox"/> 10 Business Days <input type="checkbox"/> 5 Business Days <input type="checkbox"/> 3 Business Days* <input type="checkbox"/> 2 Business Days* <input type="checkbox"/> 1 Business Day* <input type="checkbox"/> Other _____ <small>All data available via Lablink</small>		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NJ Reduced (Level 3) <input checked="" type="checkbox"/> Full Tier 1 (Level 4) <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ DKQP		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> MA MCP Criteria <input type="checkbox"/> CT RCP Criteria <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format												INITIAL ASSESSMENT <u>RK/IB</u> LABEL VERIFICATION _____ <a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>	

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By: <b>Aliment AEA</b>	Date / Time: <b>7/15/21 8:35</b>	Received By: <b>Robin Kemp</b>	Date / Time: <b>7/15/21</b>	Relinquished By: <b>Robin Kemp</b>	Date / Time: <b>7/15/21</b>	Received By: <b>Shirani G</b>	Date / Time: <b>7/15/21</b>
Relinquished By:	Date / Time:	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:	Date / Time:

Custody Seal # **2**    Intact  Not intact     Preserved where applicable     On ice     Cooler Temp. °C **5**

3.1 LFA 2.8 L ID





# CHAIN OF CUSTODY

SGS North America Inc. - Dayton  
2235 Route 130, Dayton, NJ 08810  
TEL: 732-329-0200 FAX: 732-329-3499/3480  
www.sgs.com/ehsusa

EHSQA-QAC-0023-02-FORM-Standard COC

FED-EX Tracking #	Bottle Order Copy #
SGS Quote #	SGS Job #
TM-07121-162 JD28357	
Requested Analysis	
V8260TCL20 ABLV8270TCL20 PM13 [FF] MET-SW846	
Matrix Codes	
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
LAB USE ONLY	

Client / Reporting Information		Project Information	
Company Name: BL Companies		Project Name: Former TCCA, Oreland, PA	
Street Address: 1100 First Ave		Street: 1725 Walnut Ave	
City: King of Prussia, PA 19046		City: Oreland PA	
Project Contact: mmcgowan@blcompanies.com		Project #	
Phone #: (609)-410-6869		Client Purchase Order #	
E-mail: mmcgowan@blcompanies.com		Project Manager: Mike McGowan	
Sample(s) Name(s): Reynolds, Schuetz		Attention:	
MECHDI Val #		Date	
Field ID / Point of Collection		Time	
Sampled by		Matrix	
Glab (G) Comp (C)		# of bottles	
Matrix		HCl	
Matrix		NH3	
Matrix		H2SO4	
Matrix		NONE	
Matrix		DI Water	
Matrix		MEDIUM	
Matrix		ENCLOSURE	

SGS Sample #	Field ID / Point of Collection	MECHDI Val #	Date	Time	Sampled by	Glab (G) Comp (C)	Matrix	# of bottles	HCl	NH3	H2SO4	NONE	DI Water	MEDIUM	ENCLOSURE
13	MW-12D		7/13/21	15:57	SSC	G		6	3		1	2			
14	MW-13D		7/14/21	12:17	CLR	G		6	3		1	2			

Turn Around Time (Business Days)		Deliverable		Comments / Special Instructions	
<input checked="" type="checkbox"/> 10 Business Days <input type="checkbox"/> 5 Business Days <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 2 Business Days <input type="checkbox"/> 1 Business Day <input type="checkbox"/> Other		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NJ Reduced (Level 3) <input checked="" type="checkbox"/> Full Tier I (Level 4) <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ DKQP		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> MA MCP Criteria <input type="checkbox"/> CT RCP Criteria <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format	
Approved By (SGS PM) / Date: _____ * Approval needed for 1-3 Business Day TAT		<input type="checkbox"/> DOD-QSMS		Commercial "A" = Results only; Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw data <a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>	

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by: 1 [Signature]	Date / Time: 14:35	Received By: 1 [Signature]	Relinquished by: 2 [Signature]	Date / Time: 1740	Received By: 2 [Signature]
Relinquished by: 3	Date / Time:	Received By: 3	Relinquished by: 4	Date / Time:	Received By: 4
Relinquished by: 5	Date / Time:	Received By: 5	Custody Seal # <input type="checkbox"/> Intact <input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp: °C <input type="checkbox"/> Not intact <input type="checkbox"/> Absent <input type="checkbox"/> Therm ID: 4		

## SGS Sample Receipt Summary

Job Number: JD28351

Client: BL Companies

Project: Former TCAA, Oreland, PA

Date / Time Received: 7/19/2021

Delivery Method: \_\_\_\_\_

Airbill #s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

**Cooler Security**

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature**

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____                               |                          |
| 3. Cooler media:             | _____                               |                          |
| 4. No. Coolers:              | _____                               |                          |

**Quality Control Preservation**

Y or N

N/A

- |                                 |                                     |                          |                          |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Documentation**

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition**

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact _____                        |                          |

**Sample Integrity - Instructions**

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: 212820	pH 12+: 203117A	Other: (Specify) _____
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Comments	Analysis not marked off on COC for samples. Received VOA, LV ABN and Metals volumes for all samples
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All samples should be run for VO, LV ABN and Metals per Michael McGowan

**JD28351: Chain of Custody**  
**Page 4 of 6**

## SGS Sample Receipt Summary

**Job Number:** JD28351

**Client:** BL COMPANIES

**Project:** FORMER TCCA, ORELAND, PA

**Date / Time Received:** 7/15/2021 5:48:00 PM

**Delivery Method:**

**Airbill #s:**

**Cooler Temps (Raw Measured) °C:** Cooler 1: (3.1); Cooler 2: (2.8);

**Cooler Temps (Corrected) °C:** Cooler 1: (3.1); Cooler 2: (2.8);

**Cooler Security**

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature**

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____                               |                          |
| 3. Cooler media:             | Ice (Bag)                           |                          |
| 4. No. Coolers:              | 2                                   |                          |

**Quality Control Preservation**

Y or N

N/A

- |                                 |                                     |                                     |                          |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |

**Sample Integrity - Documentation**

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition**

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

**Sample Integrity - Instructions**

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: 212820	pH 12+: 203117A	Other: (Specify) _____
--------------------	-----------------	-----------------	------------------------

Comments	
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SM089-02 Rev. Date 12/1/16

**JD28351: Chain of Custody**

**Page 5 of 6**

Responded to by:

Response Date:

**JD28351: Chain of Custody**  
**Page 6 of 6**

## Sample Summary

### BL Companies

Job No: JD34349

Former TCCA, Oreland, PA  
Project No: 17L5438

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
---------------	----------------	---------	----------	-------------	------	------------------

This report contains results reported as ND = Not detected. The following applies:  
Organics ND = Not detected above the MDL

JD34349-1	10/26/21	13:52	SCS	10/28/21	AQ	Ground Water	MW-1
JD34349-1F	10/26/21	13:52	SCS	10/28/21	AQ	Groundwater Filtered	MW-1
JD34349-2	10/27/21	10:31	SCS	10/28/21	AQ	Ground Water	MW-2
JD34349-2F	10/27/21	10:31	SCS	10/28/21	AQ	Groundwater Filtered	MW-2
JD34349-3	10/26/21	16:05	SCS	10/28/21	AQ	Ground Water	MW-3
JD34349-3F	10/26/21	16:05	SCS	10/28/21	AQ	Groundwater Filtered	MW-3
JD34349-4	10/26/21	14:28	SCS	10/28/21	AQ	Ground Water	MW-4
JD34349-4F	10/26/21	14:28	SCS	10/28/21	AQ	Groundwater Filtered	MW-4
JD34349-5	10/26/21	09:35	SCS	10/28/21	AQ	Ground Water	MW-5
JD34349-5F	10/26/21	09:35	SCS	10/28/21	AQ	Groundwater Filtered	MW-5
JD34349-6	10/26/21	17:52	CR	10/28/21	AQ	Ground Water	MW-6
JD34349-6F	10/26/21	17:52	CR	10/28/21	AQ	Groundwater Filtered	MW-6

## Sample Summary (continued)

**BL Companies**

**Job No: JD34349**

**Former TCCA, Oreland, PA  
Project No: 17L5438**

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD34349-7	10/26/21	11:42 SCS	10/28/21	AQ	Ground Water	MW-7
JD34349-7F	10/26/21	11:42 SCS	10/28/21	AQ	Groundwater Filtered	MW-7
JD34349-8	10/26/21	16:50 SCS	10/28/21	AQ	Ground Water	MW-8
JD34349-8F	10/26/21	16:50 SCS	10/28/21	AQ	Groundwater Filtered	MW-8
JD34349-9	10/27/21	09:16 CR	10/28/21	AQ	Ground Water	MW-9
JD34349-9F	10/27/21	09:16 CR	10/28/21	AQ	Groundwater Filtered	MW-9
JD34349-10	10/27/21	11:27 SCS	10/28/21	AQ	Ground Water	MW-10
JD34349-10F	10/27/21	11:27 SCS	10/28/21	AQ	Groundwater Filtered	MW-10
JD34349-11	10/27/21	10:27 CR	10/28/21	AQ	Ground Water	MW-11
JD34349-11F	10/27/21	10:27 CR	10/28/21	AQ	Groundwater Filtered	MW-11
JD34349-12	10/27/21	11:30 CR	10/28/21	AQ	Ground Water	MW-11D
JD34349-12F	10/27/21	11:30 CR	10/28/21	AQ	Groundwater Filtered	MW-11D
JD34349-13	10/26/21	16:15 CR	10/28/21	AQ	Ground Water	MW-12D

**Sample Summary**  
(continued)

**BL Companies**

**Job No: JD34349**

**Former TCCA, Oreland, PA**  
**Project No: 17L5438**

<b>Sample Number</b>	<b>Collected Date</b>	<b>Time By</b>	<b>Received</b>	<b>Matrix Code</b>	<b>Type</b>	<b>Client Sample ID</b>
JD34349-13F	10/26/21	16:15 CR	10/28/21	AQ	Groundwater Filtered	MW-12D
JD34349-14	10/27/21	12:21 CR	10/28/21	AQ	Ground Water	MW-13D
JD34349-14F	10/27/21	12:21 CR	10/28/21	AQ	Groundwater Filtered	MW-13D



## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-1	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186907.D	1	11/08/21 15:02	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-1	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-1	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79451.D	1	11/03/21 05:38	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-1	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1	
<b>Lab Sample ID:</b> JD34349-1	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	26%		10-64%
118-79-6	2,4,6-Tribromophenol	78%		31-130%
4165-60-0	Nitrobenzene-d5	78%		28-126%
321-60-8	2-Fluorobiphenyl	76%		26-114%
1718-51-0	Terphenyl-d14	88%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-1F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-2	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186908.D	1	11/08/21 15:31	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-2	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID: MW-2	Date Sampled: 10/27/21
Lab Sample ID: JD34349-2	Date Received: 10/28/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79452.D	1	11/03/21 06:04	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-2	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-2	
<b>Lab Sample ID:</b> JD34349-2	<b>Date Sampled:</b> 10/27/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	30%		10-64%
118-79-6	2,4,6-Tribromophenol	75%		31-130%
4165-60-0	Nitrobenzene-d5	85%		28-126%
321-60-8	2-Fluorobiphenyl	83%		26-114%
1718-51-0	Terphenyl-d14	84%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-2F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	41.7	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/03/21	11/03/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/03/21	11/03/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	125	20	ug/l	1	11/07/21	11/08/21 ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51373

(2) Instrument QC Batch: MA51379

(3) Instrument QC Batch: MA51403

(4) Prep QC Batch: MP29613

(5) Prep QC Batch: MP29631

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-3	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186909.D	1	11/08/21 16:01	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-3	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		85-118%
17060-07-0	1,2-Dichloroethane-D4	97%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-3	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79453.D	1	11/03/21 06:30	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-3	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-3	
<b>Lab Sample ID:</b> JD34349-3	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	28%		10-64%
118-79-6	2,4,6-Tribromophenol	86%		31-130%
4165-60-0	Nitrobenzene-d5	85%		28-126%
321-60-8	2-Fluorobiphenyl	84%		26-114%
1718-51-0	Terphenyl-d14	62%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-3F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID: MW-4	Date Sampled: 10/26/21
Lab Sample ID: JD34349-4	Date Received: 10/28/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186910.D	1	11/08/21 16:30	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-4	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		85-118%
17060-07-0	1,2-Dichloroethane-D4	97%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-4	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79454.D	1	11/03/21 06:56	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-4	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	21%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-4	
<b>Lab Sample ID:</b> JD34349-4	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	15%		10-64%
118-79-6	2,4,6-Tribromophenol	46%		31-130%
4165-60-0	Nitrobenzene-d5	74%		28-126%
321-60-8	2-Fluorobiphenyl	67%		26-114%
1718-51-0	Terphenyl-d14	74%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-4F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	2.7	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	9.1	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	24.3	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	84.9	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-5	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186911.D	1	11/08/21 17:00	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-5	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	96%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-5	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79465.D	1	11/03/21 11:42	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	1.1	0.89	0.51	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-5	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-5	
<b>Lab Sample ID:</b> JD34349-5	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	31%		10-64%
118-79-6	2,4,6-Tribromophenol	79%		31-130%
4165-60-0	Nitrobenzene-d5	83%		28-126%
321-60-8	2-Fluorobiphenyl	84%		26-114%
1718-51-0	Terphenyl-d14	83%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-5F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	12.2	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-6	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2B186903.D	4	11/08/21 13:05	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	40	12	ug/l	
71-43-2	Benzene	48.4	2.0	1.7	ug/l	
74-97-5	Bromochloromethane	ND	4.0	1.9	ug/l	
75-27-4	Bromodichloromethane	ND	4.0	1.8	ug/l	
75-25-2	Bromoform	ND	4.0	2.5	ug/l	
74-83-9	Bromomethane	ND	8.0	6.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	40	27	ug/l	
75-15-0	Carbon disulfide	ND	8.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	4.0	2.2	ug/l	
108-90-7	Chlorobenzene	ND	4.0	2.2	ug/l	
75-00-3	Chloroethane	ND	4.0	2.9	ug/l	
67-66-3	Chloroform	3.9	4.0	2.0	ug/l	J
74-87-3	Chloromethane	ND	4.0	3.0	ug/l	
110-82-7	Cyclohexane	ND	20	3.1	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	8.0	2.1	ug/l	
124-48-1	Dibromochloromethane	ND	4.0	2.2	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	1.9	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	4.0	2.1	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	4.0	2.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	4.0	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	8.0	2.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	4.0	2.3	ug/l	
107-06-2	1,2-Dichloroethane	ND	4.0	2.4	ug/l	
75-35-4	1,1-Dichloroethene	ND	4.0	2.4	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	4.0	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	4.0	2.1	ug/l	
78-87-5	1,2-Dichloropropane	ND	4.0	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	4.0	1.9	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	4.0	1.7	ug/l	
100-41-4	Ethylbenzene	2.8	4.0	2.4	ug/l	J
76-13-1	Freon 113	ND	20	2.3	ug/l	
591-78-6	2-Hexanone	ND	20	8.1	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-6	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	4.0	2.6	ug/l	
79-20-9	Methyl Acetate <sup>b</sup>	ND	20	3.2	ug/l	
108-87-2	Methylcyclohexane	ND	20	2.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	20	7.4	ug/l	
75-09-2	Methylene chloride	ND	8.0	4.0	ug/l	
100-42-5	Styrene	ND	4.0	1.9	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.0	2.6	ug/l	
127-18-4	Tetrachloroethene	ND	4.0	3.6	ug/l	
108-88-3	Toluene	2.8	4.0	2.1	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	4.0	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	4.0	2.1	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	4.0	2.1	ug/l	
79-01-6	Trichloroethene	ND	4.0	2.1	ug/l	
75-69-4	Trichlorofluoromethane	ND	8.0	1.6	ug/l	
75-01-4	Vinyl chloride	ND	4.0	3.1	ug/l	
	m,p-Xylene	6.9	4.0	3.1	ug/l	
95-47-6	o-Xylene	8.4	4.0	2.4	ug/l	
1330-20-7	Xylene (total)	15.3	4.0	2.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

(a) Dilution required due to high concentraton of non-target compound.

(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-6	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79456.D	1	11/03/21 07:49	CS	11/02/21 11:50	OP36340	E5P3760
Run #2	5P79466.D	50	11/03/21 12:08	CS	11/02/21 11:50	OP36340	E5P3760

Run #	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2	270 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.7	0.34	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.7	0.49	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.7	0.62	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.7	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.7	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.43	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.7	0.37	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.4	0.42	ug/l	
87-86-5	Pentachlorophenol	ND	3.7	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.7	0.59	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.7	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.7	0.55	ug/l	
83-32-9	Acenaphthene	ND	0.93	0.57	ug/l	
208-96-8	Acenaphthylene	ND	0.93	0.39	ug/l	
98-86-2	Acetophenone	ND	1.9	0.48	ug/l	
120-12-7	Anthracene	ND	0.93	0.51	ug/l	
1912-24-9	Atrazine	ND	1.9	0.66	ug/l	
100-52-7	Benzaldehyde	ND	3.7	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.93	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.93	0.58	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.93	0.53	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.93	0.59	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.93	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.51	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.9	0.80	ug/l	
92-52-4	1,1'-Biphenyl	1.1	0.93	0.54	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.40	ug/l	
106-47-8	4-Chloroaniline	ND	3.7	0.49	ug/l	
86-74-8	Carbazole	ND	0.93	0.53	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-6	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.9	0.32	ug/l	
218-01-9	Chrysene	ND	0.93	0.48	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.42	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.9	0.46	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.55	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.93	0.51	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.93	0.52	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.93	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.93	0.46	ug/l	
132-64-9	Dibenzofuran	1.0	3.7	0.67	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	1.9	0.49	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.9	0.54	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.51	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.93	0.53	ug/l	
86-73-7	Fluorene	ND	0.93	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	0.93	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.93	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.4	0.91	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.51	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.93	0.59	ug/l	
78-59-1	Isophorone	ND	1.9	0.36	ug/l	
91-57-6	2-Methylnaphthalene	8.3	0.93	0.60	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.7	0.57	ug/l	
99-09-2	3-Nitroaniline	ND	3.7	0.59	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.7	0.69	ug/l	
91-20-3	Naphthalene	864 <sup>b</sup>	46	20	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.39	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.60	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.7	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.93	0.45	ug/l	
129-00-0	Pyrene	ND	0.93	0.46	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.45	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%	26%	10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-6	
<b>Lab Sample ID:</b> JD34349-6	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	26%	21%	10-64%
118-79-6	2,4,6-Tribromophenol	76%	61%	31-130%
4165-60-0	Nitrobenzene-d5	72%	72%	28-126%
321-60-8	2-Fluorobiphenyl	69%	84%	26-114%
1718-51-0	Terphenyl-d14	81%	104%	16-122%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-6F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-7	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186912.D	1	11/08/21 17:29	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-7	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-7	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79457.D	1	11/03/21 08:15	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-7	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-7	
<b>Lab Sample ID:</b> JD34349-7	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-64%
118-79-6	2,4,6-Tribromophenol	81%		31-130%
4165-60-0	Nitrobenzene-d5	83%		28-126%
321-60-8	2-Fluorobiphenyl	77%		26-114%
1718-51-0	Terphenyl-d14	71%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-7F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-8	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186913.D	1	11/08/21 17:59	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-8	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-8	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79458.D	1	11/03/21 08:41	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-8	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-8	
<b>Lab Sample ID:</b> JD34349-8	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-64%
118-79-6	2,4,6-Tribromophenol	78%		31-130%
4165-60-0	Nitrobenzene-d5	87%		28-126%
321-60-8	2-Fluorobiphenyl	82%		26-114%
1718-51-0	Terphenyl-d14	71%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-8F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	10.6	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-9	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186914.D	1	11/08/21 18:28	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	0.83	1.0	0.55	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.62	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	0.84	1.0	0.60	ug/l	J
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	20.6	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.3	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-9	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.9	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	21.8	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-9	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79459.D	1	11/03/21 09:07	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-9	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-9	Date Sampled: 10/27/21
Lab Sample ID: JD34349-9	Date Received: 10/28/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	31%		10-64%
118-79-6	2,4,6-Tribromophenol	87%		31-130%
4165-60-0	Nitrobenzene-d5	88%		28-126%
321-60-8	2-Fluorobiphenyl	81%		26-114%
1718-51-0	Terphenyl-d14	63%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-9F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	21.0	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-10	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186915.D	1	11/08/21 18:57	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-10	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	99%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-10	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79460.D	1	11/03/21 09:33	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-10	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-10	
<b>Lab Sample ID:</b> JD34349-10	<b>Date Sampled:</b> 10/27/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	29%		10-64%
118-79-6	2,4,6-Tribromophenol	79%		31-130%
4165-60-0	Nitrobenzene-d5	82%		28-126%
321-60-8	2-Fluorobiphenyl	76%		26-114%
1718-51-0	Terphenyl-d14	66%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-10F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-11	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186916.D	1	11/08/21 19:27	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-11	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		85-118%
17060-07-0	1,2-Dichloroethane-D4	100%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-11	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79461.D	1	11/03/21 09:59	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-11	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	7.2	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-11	
<b>Lab Sample ID:</b> JD34349-11	<b>Date Sampled:</b> 10/27/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	26%		10-64%
118-79-6	2,4,6-Tribromophenol	80%		31-130%
4165-60-0	Nitrobenzene-d5	76%		28-126%
321-60-8	2-Fluorobiphenyl	74%		26-114%
1718-51-0	Terphenyl-d14	49%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-11F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	26.1	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-12	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186917.D	1	11/08/21 19:56	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-12	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.0	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		85-118%
17060-07-0	1,2-Dichloroethane-D4	99%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-12	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79462.D	1	11/03/21 10:25	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-12	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	1.4	1.8	0.48	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-11D	
<b>Lab Sample ID:</b> JD34349-12	<b>Date Sampled:</b> 10/27/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	27%		10-64%
118-79-6	2,4,6-Tribromophenol	74%		31-130%
4165-60-0	Nitrobenzene-d5	73%		28-126%
321-60-8	2-Fluorobiphenyl	68%		26-114%
1718-51-0	Terphenyl-d14	74%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-12F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610



## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-13	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186918.D	1	11/08/21 20:26	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-13	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		85-118%
17060-07-0	1,2-Dichloroethane-D4	98%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-13	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79463.D	1	11/03/21 10:50	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-13	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-12D	
<b>Lab Sample ID:</b> JD34349-13	<b>Date Sampled:</b> 10/26/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	26%		10-64%
118-79-6	2,4,6-Tribromophenol	77%		31-130%
4165-60-0	Nitrobenzene-d5	75%		28-126%
321-60-8	2-Fluorobiphenyl	74%		26-114%
1718-51-0	Terphenyl-d14	68%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	10/26/21
Lab Sample ID:	JD34349-13F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-14	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B186919.D	1	11/08/21 20:55	TS	n/a	n/a	V2B8489
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-14	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	0.78	1.0	0.53	ug/l	J
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		85-118%
17060-07-0	1,2-Dichloroethane-D4	97%		80-121%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-14	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P79464.D	1	11/03/21 11:16	CS	11/02/21 11:50	OP36340	E5P3760
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol <sup>a</sup>	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol <sup>a</sup>	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate <sup>a</sup>	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-14	Date Received:	10/28/21
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam <sup>a</sup>	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane) <sup>a</sup>	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate <sup>a</sup>	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline <sup>a</sup>	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline <sup>a</sup>	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-13D	
<b>Lab Sample ID:</b> JD34349-14	<b>Date Sampled:</b> 10/27/21
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 10/28/21
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	23%		10-64%
118-79-6	2,4,6-Tribromophenol	64%		31-130%
4165-60-0	Nitrobenzene-d5	63%		28-126%
321-60-8	2-Fluorobiphenyl	61%		26-114%
1718-51-0	Terphenyl-d14	52%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	10/27/21
Lab Sample ID:	JD34349-14F	Date Received:	10/28/21
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	11/02/21	11/06/21 FW	SW846 6010D <sup>3</sup>	SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	11/02/21	11/02/21 LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>5</sup>
Nickel	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	11/02/21	11/05/21 FW	SW846 6010D <sup>2</sup>	SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51365

(2) Instrument QC Batch: MA51394

(3) Instrument QC Batch: MA51398

(4) Prep QC Batch: MP29591

(5) Prep QC Batch: MP29610

RL = Reporting Limit





CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job # JD 34349

EHSQA-QAC-0023 04-FORM-Standard COC

Client / Reporting Information
Project Information
Requested Analysis
Matrix Codes
Company Name: BL Companies
Project Name: 17LS938 - Former TCCA, Oreland PA
Address: 1100 First Ave, Ste 109, King of Prussia PA 19106
Project Contact: M. McGowan
Project Manager: Tammy McDiug Key
Sampling Data Table with columns for Sample #, Field ID, Date, Time, Matrix, Grab Comp, Source, etc.

Turn Around Time (Business Days)
Deliverable
Comments / Special Instructions
MW-13D was 2 x 25mL MSMSD extra volume provided by lab. \* QC was BC Ext please run.

Relinquished by / Received By
Date / Time
1. Relinquished by: [Signature] Date: 10/28/03 Received By: [Signature] Date: 10/28/03
2. Relinquished by: [Signature] Date: 10/28/03 Received By: [Signature] Date: 10/28/03
3. Relinquished by: [Signature] Date: 10/28/03 Received By: [Signature] Date: 10/28/03
4. Relinquished by: [Signature] Date: 10/28/03 Received By: [Signature] Date: 10/28/03
5. Relinquished by: [Signature] Date: 10/28/03 Received By: [Signature] Date: 10/28/03

## SGS Sample Receipt Summary

Job Number: JD34349

Client: BL COMPANIES

Project: FORMER TCCA, ORELAND, PA

Date / Time Received: 10/28/2021 4:15:00 PM

Delivery Method:

Airbill #s:

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4); Cooler 2: (3.5);

Cooler Temps (Corrected) °C: Cooler 1: (3.4); Cooler 2: (3.5);

**Cooler Security**

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature**

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun                              |                          |
| 3. Cooler media:             | Ice (Bag)                           |                          |
| 4. No. Coolers:              | 2                                   |                          |

**Quality Control Preservation**

- |                                 |                                     |                                     |                          |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |

**Sample Integrity - Documentation**

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition**

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

**Sample Integrity - Instructions**

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Test Strip Lot #s:      pH 1-12: 231619      pH 12+: 203117A      Other: (Specify)

Comments

SM089-03  
Rev. Date 12/7/17

## Sample Summary

**BL Companies**

Job No: JD38271

**Former TCCA, Oreland, PA**  
**Project No: 17L5438 PO#TM-01522-55**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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**This report contains results reported as ND = Not detected. The following applies:**  
**Organics ND = Not detected above the MDL**

JD38271-1	01/12/22	11:59	SS	01/14/22	AQ	Ground Water	MW-1
JD38271-1F	01/12/22	11:59	SS	01/14/22	AQ	Groundwater Filtered	MW-1
JD38271-2	01/13/22	15:02	CR	01/14/22	AQ	Ground Water	MW-2
JD38271-2F	01/13/22	15:02	CR	01/14/22	AQ	Groundwater Filtered	MW-2
JD38271-3	01/12/22	15:55	SS	01/14/22	AQ	Ground Water	MW-3
JD38271-3F	01/12/22	15:55	SS	01/14/22	AQ	Groundwater Filtered	MW-3
JD38271-4	01/12/22	12:55	SS	01/14/22	AQ	Ground Water	MW-4
JD38271-4F	01/12/22	12:55	SS	01/14/22	AQ	Groundwater Filtered	MW-4
JD38271-5	01/13/22	13:18	CR	01/14/22	AQ	Ground Water	MW-5
JD38271-5F	01/13/22	13:18	CR	01/14/22	AQ	Groundwater Filtered	MW-5
JD38271-6	01/13/22	11:48	CR	01/14/22	AQ	Ground Water	MW-6
JD38271-6F	01/13/22	11:48	CR	01/14/22	AQ	Groundwater Filtered	MW-6



## Sample Summary (continued)

**BL Companies**

**Job No: JD38271**

**Former TCCA, Oreland, PA  
Project No: 17L5438 PO#TM-01522-55**

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD38271-7	01/12/22	14:37 SS	01/14/22	AQ	Ground Water	MW-7
JD38271-7F	01/12/22	14:37 SS	01/14/22	AQ	Groundwater Filtered	MW-7
JD38271-8	01/13/22	10:55 CR	01/14/22	AQ	Ground Water	MW-8
JD38271-8F	01/13/22	10:55 CR	01/14/22	AQ	Groundwater Filtered	MW-8
JD38271-9	01/12/22	14:48 CR	01/14/22	AQ	Ground Water	MW-9
JD38271-9F	01/12/22	14:48 CR	01/14/22	AQ	Groundwater Filtered	MW-9
JD38271-10	01/13/22	10:29 CR	01/14/22	AQ	Ground Water	MW-10
JD38271-10F	01/13/22	10:29 CR	01/14/22	AQ	Groundwater Filtered	MW-10
JD38271-11	01/12/22	11:15 CR	01/14/22	AQ	Ground Water	MW-11
JD38271-11F	01/12/22	11:15 CR	01/14/22	AQ	Groundwater Filtered	MW-11
JD38271-12	01/12/22	12:24 CR	01/14/22	AQ	Ground Water	MW-11D
JD38271-12F	01/12/22	12:24 CR	01/14/22	AQ	Groundwater Filtered	MW-11D
JD38271-13	01/12/22	15:44 CR	01/14/22	AQ	Ground Water	MW-12D

### Sample Summary (continued)

**BL Companies**

**Job No: JD38271**

**Former TCCA, Oreland, PA  
Project No: 17L5438 PO#TM-01522-55**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JD38271-13F	01/12/22	15:44 CR	01/14/22	AQ	Groundwater Filtered	MW-12D
JD38271-14	01/12/22	14:03 CR	01/14/22	AQ	Ground Water	MW-13D
JD38271-14F	01/12/22	14:03 CR	01/14/22	AQ	Groundwater Filtered	MW-13D

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-1	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114734.D	1	01/20/22 02:39	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-1	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-1	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81169.D	1	01/20/22 13:37	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-1	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	1.6	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1	
<b>Lab Sample ID:</b> JD38271-1	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	17%		10-64%
118-79-6	2,4,6-Tribromophenol	67%		31-130%
4165-60-0	Nitrobenzene-d5	73%		28-126%
321-60-8	2-Fluorobiphenyl	79%		26-114%
1718-51-0	Terphenyl-d14	46%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-1F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit



## Report of Analysis

Client Sample ID: MW-2	Date Sampled: 01/13/22
Lab Sample ID: JD38271-2	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114735.D	1	01/20/22 03:07	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-2	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-2	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81170.D	1	01/20/22 14:04	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	275 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.47	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.61	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.43	ug/l	
	3&4-Methylphenol	ND	1.8	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.36	ug/l	
100-02-7	4-Nitrophenol	ND	7.3	0.41	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.1	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.58	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.54	ug/l	
83-32-9	Acenaphthene	ND	0.91	0.56	ug/l	
208-96-8	Acenaphthylene	ND	0.91	0.39	ug/l	
98-86-2	Acetophenone	ND	1.8	0.47	ug/l	
120-12-7	Anthracene	ND	0.91	0.51	ug/l	
1912-24-9	Atrazine	ND	1.8	0.65	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.91	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.91	0.57	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.91	0.52	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.91	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.91	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.50	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.78	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.91	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.91	0.52	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-2	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.32	ug/l	
218-01-9	Chrysene	ND	0.91	0.47	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.39	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.45	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.54	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.91	0.50	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.91	0.51	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	1.0	ug/l	
123-91-1	1,4-Dioxane	1.4	0.91	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.91	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.66	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.53	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.50	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.91	0.52	ug/l	
86-73-7	Fluorene	ND	0.91	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	0.91	0.49	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.91	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.3	0.89	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.50	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.91	0.58	ug/l	
78-59-1	Isophorone	ND	1.8	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.91	0.59	ug/l	
88-74-4	2-Nitroaniline	ND	3.6	0.56	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.58	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.68	ug/l	
91-20-3	Naphthalene	ND	0.91	0.40	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.59	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.91	0.44	ug/l	
129-00-0	Pyrene	ND	0.91	0.45	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-2	
<b>Lab Sample ID:</b> JD38271-2	<b>Date Sampled:</b> 01/13/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	22%		10-64%
118-79-6	2,4,6-Tribromophenol	92%		31-130%
4165-60-0	Nitrobenzene-d5	76%		28-126%
321-60-8	2-Fluorobiphenyl	80%		26-114%
1718-51-0	Terphenyl-d14	56%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-2F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	24.3	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	85.4	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID: MW-3	Date Sampled: 01/12/22
Lab Sample ID: JD38271-3	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114736.D	1	01/20/22 03:36	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-3	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-3	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81171.D	1	01/20/22 14:32	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.7	0.34	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.7	0.49	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.7	0.62	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.7	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.7	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.43	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.7	0.37	ug/l	
100-02-7	4-Nitrophenol	ND	7.4	0.42	ug/l	
87-86-5	Pentachlorophenol	ND	3.7	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.7	0.59	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.7	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.7	0.55	ug/l	
83-32-9	Acenaphthene	ND	0.93	0.57	ug/l	
208-96-8	Acenaphthylene	ND	0.93	0.39	ug/l	
98-86-2	Acetophenone	ND	1.9	0.48	ug/l	
120-12-7	Anthracene	ND	0.93	0.51	ug/l	
1912-24-9	Atrazine	ND	1.9	0.66	ug/l	
100-52-7	Benzaldehyde	ND	3.7	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.93	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.93	0.58	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.93	0.53	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.93	0.59	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.93	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.51	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.80	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.93	0.54	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.40	ug/l	
106-47-8	4-Chloroaniline	ND	3.7	0.49	ug/l	
86-74-8	Carbazole	ND	0.93	0.53	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-3	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.32	ug/l	
218-01-9	Chrysene	ND	0.93	0.48	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.42	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.46	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.55	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.93	0.51	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.93	0.52	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	2.9	0.93	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.93	0.46	ug/l	
132-64-9	Dibenzofuran	ND	3.7	0.67	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.49	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.54	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.51	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.93	0.53	ug/l	
86-73-7	Fluorene	ND	0.93	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	0.93	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.93	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.4	0.91	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.51	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.93	0.59	ug/l	
78-59-1	Isophorone	ND	1.9	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.93	0.60	ug/l	
88-74-4	2-Nitroaniline	ND	3.7	0.57	ug/l	
99-09-2	3-Nitroaniline	ND	3.7	0.59	ug/l	
100-01-6	4-Nitroaniline	ND	3.7	0.69	ug/l	
91-20-3	Naphthalene	ND	0.93	0.41	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.39	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.60	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.7	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.93	0.45	ug/l	
129-00-0	Pyrene	ND	0.93	0.46	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.45	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	
<b>Lab Sample ID:</b> JD38271-3	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	22%		10-64%
118-79-6	2,4,6-Tribromophenol	82%		31-130%
4165-60-0	Nitrobenzene-d5	71%		28-126%
321-60-8	2-Fluorobiphenyl	79%		26-114%
1718-51-0	Terphenyl-d14	59%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-3F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID: MW-4	Date Sampled: 01/12/22
Lab Sample ID: JD38271-4	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114737.D	1	01/20/22 04:04	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-4	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-4	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81172.D	1	01/20/22 14:59	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

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J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-4	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	3.3	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-73%

ND = Not detected

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RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-4	
<b>Lab Sample ID:</b> JD38271-4	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	16%		10-64%
118-79-6	2,4,6-Tribromophenol	62%		31-130%
4165-60-0	Nitrobenzene-d5	56%		28-126%
321-60-8	2-Fluorobiphenyl	59%		26-114%
1718-51-0	Terphenyl-d14	46%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-4F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-5	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114738.D	1	01/20/22 04:33	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-5	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-5	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81173.D	1	01/20/22 15:27	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	4.0	0.37	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	4.0	0.53	ug/l	
120-83-2	2,4-Dichlorophenol	ND	2.0	0.52	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.0	0.67	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.0	1.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	4.0	1.5	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.47	ug/l	
	3&4-Methylphenol	ND	2.0	1.5	ug/l	
88-75-5	2-Nitrophenol	ND	4.0	0.40	ug/l	
100-02-7	4-Nitrophenol	ND	8.0	0.45	ug/l	
87-86-5	Pentachlorophenol	ND	4.0	1.2	ug/l	
108-95-2	Phenol	ND	2.0	0.26	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.0	0.64	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.0	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.0	0.59	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.61	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.42	ug/l	
98-86-2	Acetophenone	ND	2.0	0.52	ug/l	
120-12-7	Anthracene	ND	1.0	0.56	ug/l	
1912-24-9	Atrazine	ND	2.0	0.72	ug/l	
100-52-7	Benzaldehyde	ND	4.0	0.44	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.51	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.63	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.57	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.48	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.55	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.86	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.59	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.43	ug/l	
106-47-8	4-Chloroaniline	ND	4.0	0.53	ug/l	
86-74-8	Carbazole	0.78	1.0	0.58	ug/l	J

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-5	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	2.0	0.35	ug/l	
218-01-9	Chrysene	ND	1.0	0.52	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.46	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.43	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	2.0	0.50	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.60	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	1.0	0.55	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	1.0	0.56	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	2.0	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.50	ug/l	
132-64-9	Dibenzofuran	ND	4.0	0.73	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.53	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.58	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.55	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.3	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.58	ug/l	
86-73-7	Fluorene	ND	1.0	0.59	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.54	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.35	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	8.0	0.98	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.55	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.64	ug/l	
78-59-1	Isophorone	ND	2.0	0.39	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.64	ug/l	
88-74-4	2-Nitroaniline	ND	4.0	0.62	ug/l	
99-09-2	3-Nitroaniline	ND	4.0	0.64	ug/l	
100-01-6	4-Nitroaniline	ND	4.0	0.75	ug/l	
91-20-3	Naphthalene	ND	1.0	0.44	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.42	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.65	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.0	0.42	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.48	ug/l	
129-00-0	Pyrene	ND	1.0	0.50	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	2.0	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-5	
<b>Lab Sample ID:</b> JD38271-5	<b>Date Sampled:</b> 01/13/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	18%		10-64%
118-79-6	2,4,6-Tribromophenol	68%		31-130%
4165-60-0	Nitrobenzene-d5	61%		28-126%
321-60-8	2-Fluorobiphenyl	61%		26-114%
1718-51-0	Terphenyl-d14	39%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-5F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Arsenic <sup>a</sup>	8.0	6.0	ug/l	2	01/19/22	01/21/22	ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>5</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup>	SW846 7470A <sup>4</sup>
Nickel	13.1	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Selenium <sup>a</sup>	< 20	20	ug/l	2	01/19/22	01/21/22	ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>5</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>
Thallium <sup>a</sup>	< 20	20	ug/l	2	01/19/22	01/21/22	ND	SW846 6010D <sup>3</sup>	SW846 3010A <sup>5</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup>	SW846 3010A <sup>5</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Instrument QC Batch: MA51777

(4) Prep QC Batch: MP30827

(5) Prep QC Batch: MP30836

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-6	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	4D114729.D	4	01/20/22 00:17	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>b</sup>	ND	40	12	ug/l	
71-43-2	Benzene	63.1	2.0	1.7	ug/l	
74-97-5	Bromochloromethane	ND	4.0	1.9	ug/l	
75-27-4	Bromodichloromethane	ND	4.0	1.8	ug/l	
75-25-2	Bromoform	ND	4.0	2.5	ug/l	
74-83-9	Bromomethane <sup>b</sup>	ND	8.0	6.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	40	27	ug/l	
75-15-0	Carbon disulfide	ND	8.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	4.0	2.2	ug/l	
108-90-7	Chlorobenzene	ND	4.0	2.2	ug/l	
75-00-3	Chloroethane	ND	4.0	2.9	ug/l	
67-66-3	Chloroform	5.5	4.0	2.0	ug/l	
74-87-3	Chloromethane <sup>b</sup>	ND	4.0	3.0	ug/l	
110-82-7	Cyclohexane	ND	20	3.1	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	8.0	2.1	ug/l	
124-48-1	Dibromochloromethane	ND	4.0	2.2	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	1.9	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	4.0	2.1	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	4.0	2.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	4.0	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	8.0	2.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	4.0	2.3	ug/l	
107-06-2	1,2-Dichloroethane	ND	4.0	2.4	ug/l	
75-35-4	1,1-Dichloroethene	ND	4.0	2.4	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	4.0	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	4.0	2.1	ug/l	
78-87-5	1,2-Dichloropropane	ND	4.0	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	4.0	1.9	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	4.0	1.7	ug/l	
100-41-4	Ethylbenzene	3.0	4.0	2.4	ug/l	J
76-13-1	Freon 113	ND	20	2.3	ug/l	
591-78-6	2-Hexanone	ND	20	8.1	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-6	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Orelan, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	4.0	2.6	ug/l	
79-20-9	Methyl Acetate	ND	20	3.2	ug/l	
108-87-2	Methylcyclohexane	ND	20	2.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	20	7.4	ug/l	
75-09-2	Methylene chloride	ND	8.0	4.0	ug/l	
100-42-5	Styrene	ND	4.0	1.9	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.0	2.6	ug/l	
127-18-4	Tetrachloroethene	ND	4.0	3.6	ug/l	
108-88-3	Toluene	3.7	4.0	2.1	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	4.0	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	4.0	2.1	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	4.0	2.1	ug/l	
79-01-6	Trichloroethene	ND	4.0	2.1	ug/l	
75-69-4	Trichlorofluoromethane	ND	8.0	1.6	ug/l	
75-01-4	Vinyl chloride	ND	4.0	3.1	ug/l	
	m,p-Xylene	5.9	4.0	3.1	ug/l	
95-47-6	o-Xylene	11.5	4.0	2.4	ug/l	
1330-20-7	Xylene (total)	17.4	4.0	2.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

(a) Dilution required due to high concentraton of non-target compound.

(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-6	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81174.D	1	01/20/22 15:54	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2	5P81183.D	20	01/20/22 19:56	KLS	01/19/22 10:00	OP37648	E5P3842

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.51	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.65	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.5	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.45	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.38	ug/l	
100-02-7	4-Nitrophenol	ND	7.7	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	0.49	1.9	0.25	ug/l	J
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.61	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.47	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.57	ug/l	
83-32-9	Acenaphthene	ND	0.96	0.59	ug/l	
208-96-8	Acenaphthylene	ND	0.96	0.41	ug/l	
98-86-2	Acetophenone	ND	1.9	0.50	ug/l	
120-12-7	Anthracene	ND	0.96	0.53	ug/l	
1912-24-9	Atrazine	ND	1.9	0.69	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.42	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.96	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.96	0.60	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.96	0.55	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.96	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.96	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	0.86	0.96	0.57	ug/l	J
91-58-7	2-Chloronaphthalene	ND	1.9	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.51	ug/l	
86-74-8	Carbazole	3.1	0.96	0.55	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-6	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.96	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.41	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.48	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.57	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.96	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.96	0.54	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	0.96	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.96	0.48	ug/l	
132-64-9	Dibenzofuran	1.1	3.8	0.70	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	1.9	0.51	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.56	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.53	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.3	ug/l	
206-44-0	Fluoranthene	ND	0.96	0.55	ug/l	
86-73-7	Fluorene	ND	0.96	0.57	ug/l	
118-74-1	Hexachlorobenzene	ND	0.96	0.52	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.96	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.7	0.94	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.96	0.62	ug/l	
78-59-1	Isophorone	ND	1.9	0.38	ug/l	
91-57-6	2-Methylnaphthalene	3.9	0.96	0.62	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.59	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.61	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.72	ug/l	
91-20-3	Naphthalene	627 <sup>a</sup>	19	8.5	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.62	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.41	ug/l	
85-01-8	Phenanthrene	ND	0.96	0.47	ug/l	
129-00-0	Pyrene	ND	0.96	0.48	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%	29%	10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-6	
<b>Lab Sample ID:</b> JD38271-6	<b>Date Sampled:</b> 01/13/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	18%	46%	10-64%
118-79-6	2,4,6-Tribromophenol	78%	68%	31-130%
4165-60-0	Nitrobenzene-d5	62%	66%	28-126%
321-60-8	2-Fluorobiphenyl	71%	66%	26-114%
1718-51-0	Terphenyl-d14	57%	51%	16-122%

(a) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-6F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	3.5	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	12.5	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-7	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114739.D	1	01/20/22 05:01	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-7	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-7	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81175.D	1	01/20/22 16:22	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.6	0.33	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.6	0.47	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.8	0.46	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.6	0.60	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.6	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.6	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.8	0.42	ug/l	
	3&4-Methylphenol	ND	1.8	1.3	ug/l	
88-75-5	2-Nitrophenol	ND	3.6	0.35	ug/l	
100-02-7	4-Nitrophenol	ND	7.1	0.40	ug/l	
87-86-5	Pentachlorophenol	ND	3.6	1.0	ug/l	
108-95-2	Phenol	ND	1.8	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.6	0.57	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.6	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.6	0.53	ug/l	
83-32-9	Acenaphthene	ND	0.89	0.55	ug/l	
208-96-8	Acenaphthylene	ND	0.89	0.38	ug/l	
98-86-2	Acetophenone	ND	1.8	0.46	ug/l	
120-12-7	Anthracene	ND	0.89	0.50	ug/l	
1912-24-9	Atrazine	ND	1.8	0.64	ug/l	
100-52-7	Benzaldehyde	ND	3.6	0.39	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.89	0.46	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.89	0.56	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.89	0.51	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.89	0.57	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.89	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.8	0.49	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.8	0.77	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.89	0.53	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.8	0.39	ug/l	
106-47-8	4-Chloroaniline	ND	3.6	0.48	ug/l	
86-74-8	Carbazole	ND	0.89	0.51	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-7	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.8	0.31	ug/l	
218-01-9	Chrysene	ND	0.89	0.46	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.8	0.41	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.8	0.38	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.8	0.44	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.8	0.53	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.89	0.49	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.89	0.50	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.8	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	0.89	0.16	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.89	0.45	ug/l	
132-64-9	Dibenzofuran	ND	3.6	0.65	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.8	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.8	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.8	0.52	ug/l	
131-11-3	Dimethyl phthalate	ND	1.8	0.49	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.8	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.89	0.51	ug/l	
86-73-7	Fluorene	ND	0.89	0.53	ug/l	
118-74-1	Hexachlorobenzene	ND	0.89	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.89	0.31	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.1	0.88	ug/l	
67-72-1	Hexachloroethane	ND	1.8	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.89	0.57	ug/l	
78-59-1	Isophorone	ND	1.8	0.35	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.89	0.58	ug/l	
88-74-4	2-Nitroaniline	ND	3.6	0.55	ug/l	
99-09-2	3-Nitroaniline	ND	3.6	0.57	ug/l	
100-01-6	4-Nitroaniline	ND	3.6	0.67	ug/l	
91-20-3	Naphthalene	ND	0.89	0.39	ug/l	
98-95-3	Nitrobenzene	ND	1.8	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.8	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.6	0.38	ug/l	
85-01-8	Phenanthrene	ND	0.89	0.43	ug/l	
129-00-0	Pyrene	ND	0.89	0.44	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.8	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-7	
<b>Lab Sample ID:</b> JD38271-7	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	20%		10-64%
118-79-6	2,4,6-Tribromophenol	81%		31-130%
4165-60-0	Nitrobenzene-d5	70%		28-126%
321-60-8	2-Fluorobiphenyl	76%		26-114%
1718-51-0	Terphenyl-d14	67%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-7F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-8	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114740.D	1	01/20/22 05:29	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-8	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-8	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81176.D	1	01/20/22 16:49	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.7	0.34	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.7	0.49	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.7	0.62	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.7	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.7	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.43	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.7	0.37	ug/l	
100-02-7	4-Nitrophenol	ND	7.4	0.42	ug/l	
87-86-5	Pentachlorophenol	ND	3.7	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.7	0.59	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.7	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.7	0.55	ug/l	
83-32-9	Acenaphthene	ND	0.93	0.57	ug/l	
208-96-8	Acenaphthylene	ND	0.93	0.39	ug/l	
98-86-2	Acetophenone	ND	1.9	0.48	ug/l	
120-12-7	Anthracene	ND	0.93	0.51	ug/l	
1912-24-9	Atrazine	ND	1.9	0.66	ug/l	
100-52-7	Benzaldehyde	ND	3.7	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.93	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.93	0.58	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.93	0.53	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.93	0.59	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.93	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.51	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.80	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.93	0.54	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.40	ug/l	
106-47-8	4-Chloroaniline	ND	3.7	0.49	ug/l	
86-74-8	Carbazole	ND	0.93	0.53	ug/l	

ND = Not detected

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J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-8	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.32	ug/l	
218-01-9	Chrysene	ND	0.93	0.48	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.42	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.46	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.55	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.93	0.51	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.93	0.52	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.93	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.93	0.46	ug/l	
132-64-9	Dibenzofuran	ND	3.7	0.67	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.49	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.54	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.51	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.93	0.53	ug/l	
86-73-7	Fluorene	ND	0.93	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	0.93	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.93	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.4	0.91	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.51	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.93	0.59	ug/l	
78-59-1	Isophorone	ND	1.9	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.93	0.60	ug/l	
88-74-4	2-Nitroaniline	ND	3.7	0.57	ug/l	
99-09-2	3-Nitroaniline	ND	3.7	0.59	ug/l	
100-01-6	4-Nitroaniline	ND	3.7	0.69	ug/l	
91-20-3	Naphthalene	ND	0.93	0.41	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.39	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.60	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.7	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.93	0.45	ug/l	
129-00-0	Pyrene	ND	0.93	0.46	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.45	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-8	
<b>Lab Sample ID:</b> JD38271-8	<b>Date Sampled:</b> 01/13/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	19%		10-64%
118-79-6	2,4,6-Tribromophenol	40%		31-130%
4165-60-0	Nitrobenzene-d5	32%		28-126%
321-60-8	2-Fluorobiphenyl	41%		26-114%
1718-51-0	Terphenyl-d14	41%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-8	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-8F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID: MW-9	Date Sampled: 01/12/22
Lab Sample ID: JD38271-9	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114869.D	1	01/24/22 17:46	BK	n/a	n/a	V4D5108
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>b</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	0.80	1.0	0.55	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.63	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	1.0	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	20.3	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.5	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-9	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.58	1.0	0.51	ug/l	J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.2	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	21.0	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-120%
17060-07-0	1,2-Dichloroethane-D4	117%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-9	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81177.D	1	01/20/22 17:15	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.51	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.65	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.5	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.45	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.38	ug/l	
100-02-7	4-Nitrophenol	ND	7.7	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.25	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.61	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.47	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.57	ug/l	
83-32-9	Acenaphthene	ND	0.96	0.59	ug/l	
208-96-8	Acenaphthylene	ND	0.96	0.41	ug/l	
98-86-2	Acetophenone	ND	1.9	0.50	ug/l	
120-12-7	Anthracene	ND	0.96	0.53	ug/l	
1912-24-9	Atrazine	ND	1.9	0.69	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.42	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.96	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.96	0.60	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.96	0.55	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.96	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.96	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.96	0.57	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.51	ug/l	
86-74-8	Carbazole	ND	0.96	0.55	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-9	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.96	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.41	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.48	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.57	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.96	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.96	0.54	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	0.96	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.96	0.48	ug/l	
132-64-9	Dibenzofuran	ND	3.8	0.70	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.51	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.56	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.53	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.3	ug/l	
206-44-0	Fluoranthene	ND	0.96	0.55	ug/l	
86-73-7	Fluorene	ND	0.96	0.57	ug/l	
118-74-1	Hexachlorobenzene	ND	0.96	0.52	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.96	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.7	0.94	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.96	0.62	ug/l	
78-59-1	Isophorone	ND	1.9	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.96	0.62	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.59	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.61	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.72	ug/l	
91-20-3	Naphthalene	ND	0.96	0.42	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.62	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.41	ug/l	
85-01-8	Phenanthrene	ND	0.96	0.47	ug/l	
129-00-0	Pyrene	ND	0.96	0.48	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-9	
<b>Lab Sample ID:</b> JD38271-9	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	22%		10-64%
118-79-6	2,4,6-Tribromophenol	85%		31-130%
4165-60-0	Nitrobenzene-d5	65%		28-126%
321-60-8	2-Fluorobiphenyl	80%		26-114%
1718-51-0	Terphenyl-d14	58%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-9F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit



## Report of Analysis

Client Sample ID: MW-10	Date Sampled: 01/13/22
Lab Sample ID: JD38271-10	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114742.D	1	01/20/22 06:26	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-10	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-10	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81178.D	1	01/20/22 17:43	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.51	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.65	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.5	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.45	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.38	ug/l	
100-02-7	4-Nitrophenol	ND	7.7	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.25	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.61	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.47	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.57	ug/l	
83-32-9	Acenaphthene	ND	0.96	0.59	ug/l	
208-96-8	Acenaphthylene	ND	0.96	0.41	ug/l	
98-86-2	Acetophenone	ND	1.9	0.50	ug/l	
120-12-7	Anthracene	ND	0.96	0.53	ug/l	
1912-24-9	Atrazine	ND	1.9	0.69	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.42	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.96	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.96	0.60	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.96	0.55	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.96	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.96	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.96	0.57	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.51	ug/l	
86-74-8	Carbazole	ND	0.96	0.55	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-10	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.96	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.41	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.48	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.57	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.96	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.96	0.54	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	0.96	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.96	0.48	ug/l	
132-64-9	Dibenzofuran	ND	3.8	0.70	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.51	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.56	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.53	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.3	ug/l	
206-44-0	Fluoranthene	ND	0.96	0.55	ug/l	
86-73-7	Fluorene	ND	0.96	0.57	ug/l	
118-74-1	Hexachlorobenzene	ND	0.96	0.52	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.96	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.7	0.94	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.96	0.62	ug/l	
78-59-1	Isophorone	ND	1.9	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.96	0.62	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.59	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.61	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.72	ug/l	
91-20-3	Naphthalene	ND	0.96	0.42	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.62	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.41	ug/l	
85-01-8	Phenanthrene	ND	0.96	0.47	ug/l	
129-00-0	Pyrene	ND	0.96	0.48	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-10	
<b>Lab Sample ID:</b> JD38271-10	<b>Date Sampled:</b> 01/13/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	18%		10-64%
118-79-6	2,4,6-Tribromophenol	79%		31-130%
4165-60-0	Nitrobenzene-d5	65%		28-126%
321-60-8	2-Fluorobiphenyl	71%		26-114%
1718-51-0	Terphenyl-d14	60%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	01/13/22
Lab Sample ID:	JD38271-10F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-11	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114743.D	1	01/20/22 06:55	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-11	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-11	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81179.D	1	01/20/22 18:10	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.7	0.34	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.7	0.49	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.7	0.62	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.7	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.7	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.43	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.7	0.37	ug/l	
100-02-7	4-Nitrophenol	ND	7.4	0.42	ug/l	
87-86-5	Pentachlorophenol	ND	3.7	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.24	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.7	0.59	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.7	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.7	0.55	ug/l	
83-32-9	Acenaphthene	ND	0.93	0.57	ug/l	
208-96-8	Acenaphthylene	ND	0.93	0.39	ug/l	
98-86-2	Acetophenone	ND	1.9	0.48	ug/l	
120-12-7	Anthracene	ND	0.93	0.51	ug/l	
1912-24-9	Atrazine	ND	1.9	0.66	ug/l	
100-52-7	Benzaldehyde	ND	3.7	0.40	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.93	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.93	0.58	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.93	0.53	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.93	0.59	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.93	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.51	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.80	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.93	0.54	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.40	ug/l	
106-47-8	4-Chloroaniline	ND	3.7	0.49	ug/l	
86-74-8	Carbazole	ND	0.93	0.53	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-11	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.32	ug/l	
218-01-9	Chrysene	ND	0.93	0.48	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.42	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.46	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.55	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.93	0.51	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.93	0.52	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.93	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.93	0.46	ug/l	
132-64-9	Dibenzofuran	ND	3.7	0.67	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.49	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.54	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.51	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.8	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.93	0.53	ug/l	
86-73-7	Fluorene	ND	0.93	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	0.93	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.93	0.32	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.4	0.91	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.51	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.93	0.59	ug/l	
78-59-1	Isophorone	ND	1.9	0.36	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.93	0.60	ug/l	
88-74-4	2-Nitroaniline	ND	3.7	0.57	ug/l	
99-09-2	3-Nitroaniline	ND	3.7	0.59	ug/l	
100-01-6	4-Nitroaniline	ND	3.7	0.69	ug/l	
91-20-3	Naphthalene	ND	0.93	0.41	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.39	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.60	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.7	0.39	ug/l	
85-01-8	Phenanthrene	ND	0.93	0.45	ug/l	
129-00-0	Pyrene	ND	0.93	0.46	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.45	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	18%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-11	
<b>Lab Sample ID:</b> JD38271-11	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	13%		10-64%
118-79-6	2,4,6-Tribromophenol	45%		31-130%
4165-60-0	Nitrobenzene-d5	54%		28-126%
321-60-8	2-Fluorobiphenyl	45%		26-114%
1718-51-0	Terphenyl-d14	22%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-11F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	21.3	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-12	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114870.D	1	01/24/22 18:15	BK	n/a	n/a	V4D5108
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>b</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.63	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-12	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate <sup>a</sup>	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.7	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	117%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

(a) Associated CCV outside of control limits high, sample was ND.

(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-11D	Date Sampled: 01/12/22
Lab Sample ID: JD38271-12	Date Received: 01/14/22
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E SW846 3510C	
Project: Former TCCA, Oreland, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81180.D	1	01/20/22 18:36	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.51	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.65	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.5	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.45	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.38	ug/l	
100-02-7	4-Nitrophenol	ND	7.7	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.25	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.61	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.47	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.57	ug/l	
83-32-9	Acenaphthene	ND	0.96	0.59	ug/l	
208-96-8	Acenaphthylene	ND	0.96	0.41	ug/l	
98-86-2	Acetophenone	ND	1.9	0.50	ug/l	
120-12-7	Anthracene	ND	0.96	0.53	ug/l	
1912-24-9	Atrazine	ND	1.9	0.69	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.42	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.96	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.96	0.60	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.96	0.55	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.96	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.96	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.96	0.57	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.51	ug/l	
86-74-8	Carbazole	ND	0.96	0.55	ug/l	

ND = Not detected

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J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-12	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.96	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.41	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.48	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.57	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.96	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.96	0.54	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	0.96	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.96	0.48	ug/l	
132-64-9	Dibenzofuran	ND	3.8	0.70	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.51	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.56	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.53	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.3	ug/l	
206-44-0	Fluoranthene	ND	0.96	0.55	ug/l	
86-73-7	Fluorene	ND	0.96	0.57	ug/l	
118-74-1	Hexachlorobenzene	ND	0.96	0.52	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.96	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.7	0.94	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.96	0.62	ug/l	
78-59-1	Isophorone	ND	1.9	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.96	0.62	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.59	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.61	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.72	ug/l	
91-20-3	Naphthalene	ND	0.96	0.42	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.62	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.41	ug/l	
85-01-8	Phenanthrene	ND	0.96	0.47	ug/l	
129-00-0	Pyrene	ND	0.96	0.48	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		10-73%

ND = Not detected

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RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> MW-11D	
<b>Lab Sample ID:</b> JD38271-12	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	25%		10-64%
118-79-6	2,4,6-Tribromophenol	85%		31-130%
4165-60-0	Nitrobenzene-d5	78%		28-126%
321-60-8	2-Fluorobiphenyl	81%		26-114%
1718-51-0	Terphenyl-d14	62%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-11D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-12F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-13	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114745.D	1	01/20/22 07:52	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-13	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-13	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81181.D	1	01/20/22 19:03	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.51	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.65	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.5	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.45	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.38	ug/l	
100-02-7	4-Nitrophenol	ND	7.7	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.25	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.61	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.47	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.57	ug/l	
83-32-9	Acenaphthene	ND	0.96	0.59	ug/l	
208-96-8	Acenaphthylene	ND	0.96	0.41	ug/l	
98-86-2	Acetophenone	ND	1.9	0.50	ug/l	
120-12-7	Anthracene	ND	0.96	0.53	ug/l	
1912-24-9	Atrazine	ND	1.9	0.69	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.42	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.96	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.96	0.60	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.96	0.55	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.96	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.96	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.96	0.57	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.51	ug/l	
86-74-8	Carbazole	ND	0.96	0.55	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-13	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.96	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.41	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.48	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.57	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.96	0.53	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.96	0.54	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.1	ug/l	
123-91-1	1,4-Dioxane	ND	0.96	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.96	0.48	ug/l	
132-64-9	Dibenzofuran	ND	3.8	0.70	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.51	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.6	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.56	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.53	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.3	ug/l	
206-44-0	Fluoranthene	ND	0.96	0.55	ug/l	
86-73-7	Fluorene	ND	0.96	0.57	ug/l	
118-74-1	Hexachlorobenzene	ND	0.96	0.52	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.96	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.7	0.94	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.96	0.62	ug/l	
78-59-1	Isophorone	ND	1.9	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.96	0.62	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.59	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.61	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.72	ug/l	
91-20-3	Naphthalene	ND	0.96	0.42	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.62	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.41	ug/l	
85-01-8	Phenanthrene	ND	0.96	0.47	ug/l	
129-00-0	Pyrene	ND	0.96	0.48	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-73%

ND = Not detected

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J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-12D	
<b>Lab Sample ID:</b> JD38271-13	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	16%		10-64%
118-79-6	2,4,6-Tribromophenol	65%		31-130%
4165-60-0	Nitrobenzene-d5	57%		28-126%
321-60-8	2-Fluorobiphenyl	60%		26-114%
1718-51-0	Terphenyl-d14	39%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-12D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-13F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit



## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-14	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D114746.D	1	01/20/22 08:20	BK	n/a	n/a	V4D5102
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-14	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Former TCCA, Oreland, PA		

## VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-14	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P81182.D	1	01/20/22 19:30	KLS	01/19/22 10:00	OP37648	E5P3842
Run #2							

Run #	Initial Volume	Final Volume
Run #1	265 ml	1.0 ml
Run #2		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	3.8	0.35	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	3.8	0.50	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.49	ug/l	
105-67-9	2,4-Dimethylphenol	ND	3.8	0.63	ug/l	
51-28-5	2,4-Dinitrophenol	ND	3.8	1.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	3.8	1.4	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.44	ug/l	
	3&4-Methylphenol	ND	1.9	1.4	ug/l	
88-75-5	2-Nitrophenol	ND	3.8	0.37	ug/l	
100-02-7	4-Nitrophenol	ND	7.5	0.43	ug/l	
87-86-5	Pentachlorophenol	ND	3.8	1.1	ug/l	
108-95-2	Phenol	ND	1.9	0.25	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	3.8	0.60	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	3.8	0.46	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	3.8	0.56	ug/l	
83-32-9	Acenaphthene	ND	0.94	0.58	ug/l	
208-96-8	Acenaphthylene	ND	0.94	0.40	ug/l	
98-86-2	Acetophenone	ND	1.9	0.49	ug/l	
120-12-7	Anthracene	ND	0.94	0.52	ug/l	
1912-24-9	Atrazine	ND	1.9	0.68	ug/l	
100-52-7	Benzaldehyde	ND	3.8	0.41	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.94	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.94	0.59	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.94	0.54	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.94	0.60	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.94	0.45	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.52	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.81	ug/l	
92-52-4	1,1'-Biphenyl	ND	0.94	0.55	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.41	ug/l	
106-47-8	4-Chloroaniline	ND	3.8	0.50	ug/l	
86-74-8	Carbazole	ND	0.94	0.54	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-14	Date Received:	01/14/22
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270E SW846 3510C		
Project:	Former TCCA, Oreland, PA		

## ABN TCL List (SOM0 2.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	1.9	0.33	ug/l	
218-01-9	Chrysene	ND	0.94	0.49	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.43	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.40	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	1.9	0.47	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.56	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.94	0.52	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.94	0.53	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	0.94	0.17	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.94	0.47	ug/l	
132-64-9	Dibenzofuran	ND	3.8	0.69	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.50	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	1.5	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.55	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.52	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	1.2	ug/l	
206-44-0	Fluoranthene	ND	0.94	0.54	ug/l	
86-73-7	Fluorene	ND	0.94	0.56	ug/l	
118-74-1	Hexachlorobenzene	ND	0.94	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.94	0.33	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	7.5	0.92	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.52	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.94	0.60	ug/l	
78-59-1	Isophorone	ND	1.9	0.37	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.94	0.61	ug/l	
88-74-4	2-Nitroaniline	ND	3.8	0.58	ug/l	
99-09-2	3-Nitroaniline	ND	3.8	0.60	ug/l	
100-01-6	4-Nitroaniline	ND	3.8	0.71	ug/l	
91-20-3	Naphthalene	ND	0.94	0.42	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.40	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.61	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	3.8	0.40	ug/l	
85-01-8	Phenanthrene	ND	0.94	0.46	ug/l	
129-00-0	Pyrene	ND	0.94	0.47	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	1.9	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		10-73%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-13D	
<b>Lab Sample ID:</b> JD38271-14	<b>Date Sampled:</b> 01/12/22
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/14/22
<b>Method:</b> SW846 8270E SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> Former TCCA, Oreland, PA	

## ABN TCL List (SOM0 2.0)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	17%		10-64%
118-79-6	2,4,6-Tribromophenol	63%		31-130%
4165-60-0	Nitrobenzene-d5	57%		28-126%
321-60-8	2-Fluorobiphenyl	65%		26-114%
1718-51-0	Terphenyl-d14	65%		16-122%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-13D	Date Sampled:	01/12/22
Lab Sample ID:	JD38271-14F	Date Received:	01/14/22
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Former TCCA, Oreland, PA		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Arsenic	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Beryllium	< 1.0	1.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Cadmium	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Chromium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Copper	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Lead	< 3.0	3.0	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Mercury	< 0.20	0.20	ug/l	1	01/18/22	01/18/22	LM	SW846 7470A <sup>1</sup> SW846 7470A <sup>3</sup>
Nickel	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Selenium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Silver	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Thallium	< 10	10	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>
Zinc	< 20	20	ug/l	1	01/19/22	01/21/22	ND	SW846 6010D <sup>2</sup> SW846 3010A <sup>4</sup>

(1) Instrument QC Batch: MA51745

(2) Instrument QC Batch: MA51769

(3) Prep QC Batch: MP30827

(4) Prep QC Batch: MP30836

RL = Reporting Limit





CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Form header section containing tracking and control numbers: FED EX Tracking #, Bottle Order Control #, SGS Quote #, SGS Job # (JD38271)

Client / Reporting Information, Project Information, Billing Information, Requested Analysis, Matrix Codes

Table with columns for Sample #, Field ID / Point of Collection, MECH/ID, Date, Time, Sampled by, Grab (G) Cont. (C), Source Characterized (TN), Matrix, # of bottles, and various analysis parameters (pH, HCl, NaOH, H2SO4, HNO3, DI Water, MICH, ENCODE). Includes handwritten data for samples 13F and 14F.

Turn Around Time (Business Days), Deliverable, Comments / Special Instructions. Includes checkboxes for business days and deliverable options (Commercial A, B, C, NJ DKQP, NYASP, MA MCP, CT RCP, State Forms, EDD Format). Comments mention 'Rec'd 2 to 250 and NP to the Air on 8/27/12 on 11/5/12'.

Chain of custody signature section with columns for Relinquished By, Date / Time, Received By, Relinquished By, Date / Time, Received By. Includes handwritten signatures and dates for steps 1, 3, and 5.

JD38271: Chain of Custody

Page 2 of 4



## SGS Sample Receipt Summary

Job Number: JD38271

Client: BL COMPANIES

Project: FORMER TCCA, ORELAND, PA

Date / Time Received: 1/14/2022 5:40:00 PM

Delivery Method:

Airbill #s:

Cooler Temps (Raw Measured) °C: Cooler 1: (2.9); Cooler 2: (3.2);

Cooler Temps (Corrected) °C: Cooler 1: (1.5); Cooler 2: (1.8);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 231619	pH 12+: 203117A	Other: (Specify) _____
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Comments

SM089-03  
Rev. Date 12/7/17

**JD38271: Chain of Custody**

**Page 3 of 4**

Job Change Order: JD38271

Requested Date: 1/19/2022 Received Date: 1/14/2022  
Account Name: BL Companies Due Date: 1/19/2022  
Project Description: Former TCCA, Oreland, PA Deliverable: COMMC  
C/O Initiated By: TAMMYM PM: TM TAT (Days): 7

=====  
Sample #: JD38271-all Change: revise deliverables to FULT1  
Dept:  
TAT: 7  
=====

JD38271: Chain of Custody  
Page 4 of 4

Above Changes Per: Michael McGowan Date/Time: 1/19/2022  
To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.  
Page 1 of 1

# **APPENDIX H**

## **Fate and Transport Analysis**

## Quick Domenico Model Input Parameters

### TCE:

**Source Concentration** – 85 µg/L (highest concentration in MW-6)  
**Ax** – 20 (approximately one-tenth the modeled distance)  
**Ay** – 2 (one-tenth Ax, per model guidance)  
**Az** – 0.001 (set as a low value to conservatively estimate horizontal migration)  
**Lambda** – 0.001 (published value in Table 5 of Appendix A for TCE, converted to days)  
**Source Width** – 160 feet (approximate width of former lagoon area)  
**Source Thickness** – 5 feet (reported thickness of hazardous materials in lagoons)  
**Time** – 3650 days (ten years – adjusted and representative of equilibrium conditions)  
**Hydraulic Conductivity** – 3.70 feet/day (average value from slug testing results)  
**Hydraulic Gradient** – 0.003 feet/foot (calculated from field measurements)  
**Effective Porosity** – 0.05 (conservative estimate for silts and sands)  
**Soil Bulk Density** – 1.7 g/cm<sup>3</sup> (common estimate)  
**KOC** – 93 (published value in Table 5 of Appendix A for TCE)  
**FOC** – 0.001 (conservatively low value to limit retardation)

### Benzene:

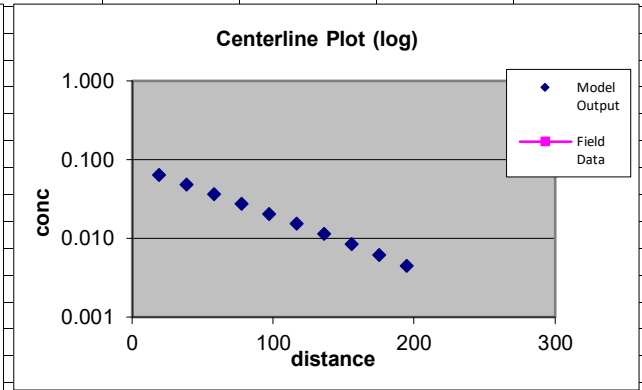
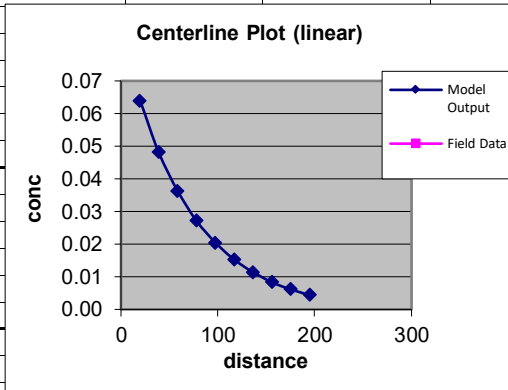
**Source Concentration** – 3,100 µg/L (concentration in TW-02)  
**Ax** – 20 (from calibrated model)  
**Ay** – 2 (from calibrated model)  
**Az** – 0.00 (set as a low value to conservatively estimate horizontal migration)  
**Lambda** – 0.00515 (calibrated value from sensitivity analysis. Initial input from Table 5 of Appendix A for benzene, converted to days was 0.00096)  
**Source Width** – 160 feet (approximate width of former lagoon area)  
**Source Thickness** – 5 feet (reported thickness of hazardous materials in lagoons)  
**Time** – 4803 days (duration between sampling events)  
**Hydraulic Conductivity** – 3.70 feet/day (average value from slug testing results)  
**Hydraulic Gradient** – 0.003 feet/foot (calculated from field measurements)  
**Effective Porosity** – 0.05 (conservative estimate for silts and sands)  
**Soil Bulk Density** – 1.7 g/cm<sup>3</sup> (common estimate)  
**KOC** – 58 (published value in Table 5 of Appendix A for benzene)  
**FOC** – 0.001 (conservatively low value to limit retardation)

NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL											
Project:	Former TCCA Site										
Date:	9/23/2018	Prepared by:	RS								
		Contaminant:	TCE - Preliminary								
<b>SOURCE</b>	<b>Ax</b>	<b>Ay</b>	<b>Az</b>	<b>LAMBDA</b>	<b>SOURCE</b>	<b>SOURCE</b>	<b>Time (days)</b>				
<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>				
<b>(MG/L)</b>			<b>&gt;=.001</b>	<b>day-1</b>	<b>(ft)</b>	<b>(ft)</b>					
	0.085	2.00E+01	2.00E+00	1.00E-04	0.001	160	5	3650			
<b>Hydraulic</b>	<b>Hydraulic</b>		<b>Soil Bulk</b>		<b>Frac.</b>	<b>Retard-</b>	<b>V</b>				
<b>Cond</b>	<b>Gradient</b>	<b>Porosity</b>	<b>Density</b>	<b>KOC</b>	<b>Org. Carb.</b>	<b>ation</b>	<b>(=K*i/n*R)</b>				
<b>(ft/day)</b>	<b>(ft/ft)</b>	<b>(dec. frac.)</b>	<b>(g/cm<sup>3</sup>)</b>			<b>(R)</b>	<b>(ft/day)</b>				
	3.70E+00	0.003	0.05	1.7	93	1.00E-03	4.162	0.053339741			
<b>Point Concentration</b>											
<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>									
	194	0									
		<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>							
<b>Conc. At</b>		194	0	0							
<b>at</b>		3650	days =	0.005							
				mg/l							
	<b>AREAL</b>		<b>CALCULATION</b>								
	<b>MODEL</b>		<b>DOMAIN</b>								
	Length (ft)		195								
	Width (ft)		100								
		19.5	39	58.5	78	97.5	117	136.5	156	175.5	195
100	0.001	0.003	0.003	0.004	0.003	0.003	0.003	0.002	0.002	0.001	0.001
50	0.064	0.048	0.035	0.026	0.019	0.014	0.010	0.010	0.007	0.005	0.004
0	0.064	0.048	0.036	0.027	0.020	0.015	0.011	0.011	0.008	0.006	0.004
-50	0.064	0.048	0.035	0.026	0.019	0.014	0.010	0.010	0.007	0.005	0.004
-100	0.001	0.003	0.003	0.004	0.003	0.003	0.003	0.002	0.002	0.001	0.001
<b>Field Data:</b>	<b>Centerline C Concentration</b>										
	<b>Distance from Source</b>										

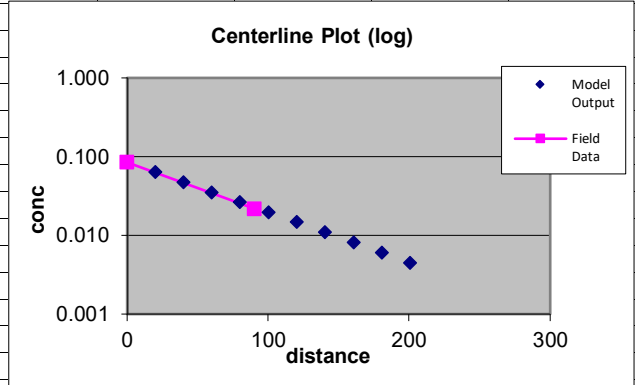
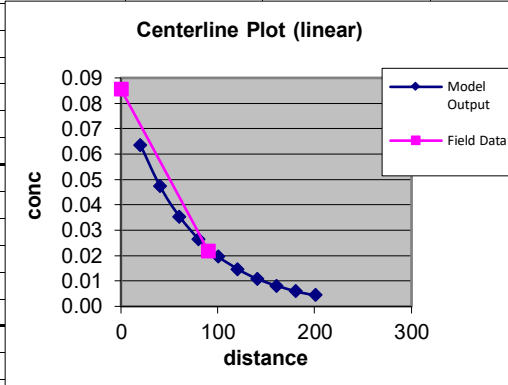
NEW QUICK\_DOMENICO.XLS

SPREADSHEET APPLICATION OF  
"AN ANALYTICAL MODEL FOR  
MULTIDIMENSIONAL TRANSPORT OF A  
DECAYING CONTAMINANT SPECIES"  
P.A. Domenico (1987)  
Modified to Include Retardation



NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL							
Project:	Former TCCA Site						
Date:	2/15/2022	Prepared by:	RS				
		Contaminant:	TCE - calibrated				
<b>SOURCE</b>	<b>Ax</b>	<b>Ay</b>	<b>Az</b>	<b>LAMBDA</b>	<b>SOURCE</b>	<b>SOURCE</b>	<b>Time (days)</b>
<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>day-1</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>
<b>(MG/L)</b>			<b>&gt;=.001</b>		<b>(ft)</b>	<b>(ft)</b>	
	0.085	2.00E+01	2.00E+00	1.00E-04	0.001	160	5
							4803
<b>Hydraulic</b>	<b>Hydraulic</b>		<b>Soil Bulk</b>		<b>Frac.</b>	<b>Retard-</b>	<b>V</b>
<b>Cond</b>	<b>Gradient</b>	<b>Porosity</b>	<b>Density</b>	<b>KOC</b>	<b>Org. Carb.</b>	<b>ation</b>	<b>(=K*i/n*R)</b>
<b>(ft/day)</b>	<b>(ft/ft)</b>	<b>(dec. frac.)</b>	<b>(g/cm<sup>3</sup>)</b>			<b>(R)</b>	<b>(ft/day)</b>
	3.70E+00	0.003	0.05	1.7	93	1.00E-03	4.162
							0.053339741
<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">NEW QUICK_DOMENICO.XLS</p> <p style="text-align: center;">SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation</p> </div>							
<b>Point Concentration</b>							
<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>					
200	0	0					
	<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>				
<b>Conc. At</b>	200	0	0				
<b>at</b>	4803	<b>days =</b>					
			<b>0.005</b>				
			<b>mg/l</b>				
<b>AREAL MODEL</b>			<b>CALCULATION DOMAIN</b>				
	<b>Length (ft)</b>		201				
	<b>Width (ft)</b>		100				
	20.1	40.2	60.3	80.4	100.5	120.6	140.7
100	0.001	0.003	0.004	0.003	0.003	0.003	0.002
50	0.063	0.047	0.034	0.025	0.018	0.013	0.010
0	0.063	0.047	0.035	0.026	0.020	0.015	0.011
-50	0.063	0.047	0.034	0.025	0.018	0.013	0.010
-100	0.001	0.003	0.004	0.003	0.003	0.003	0.002
<b>Field Data:</b>	<b>Centerline C Concentration</b>			0.0856	0.022		
	<b>Distance from Source</b>			0	90		

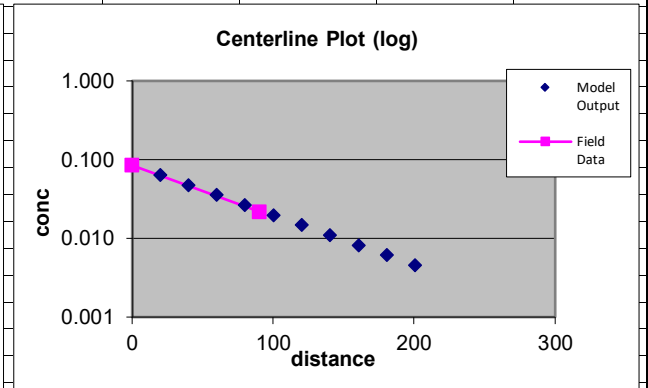
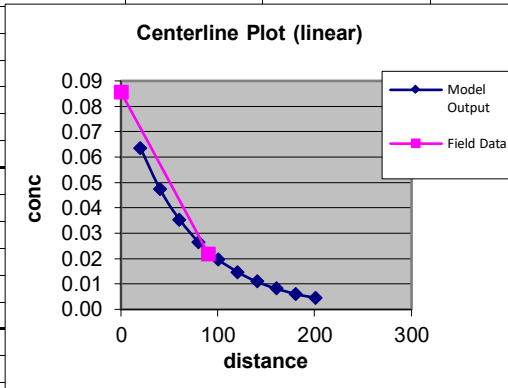


NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL										
Project:	Former TCCA Site									
Date:	2/15/2022	Prepared by:	RS							
		Contaminant:	TCE - projected							
<b>SOURCE</b>	<b>Ax</b>	<b>Ay</b>	<b>Az</b>	<b>LAMBDA</b>	<b>SOURCE</b>	<b>SOURCE</b>	<b>Time (days)</b>			
<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>day-1</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>			
<b>(MG/L)</b>			<b>&gt;=.001</b>		<b>(ft)</b>	<b>(ft)</b>				
	0.085	2.00E+01	2.00E+00	1.00E-04	0.001	160	5	11950		
<b>Hydraulic</b>	<b>Hydraulic</b>		<b>Soil Bulk</b>		<b>Frac.</b>	<b>Retard-</b>	<b>V</b>			
<b>Cond</b>	<b>Gradient</b>	<b>Porosity</b>	<b>Density</b>	<b>KOC</b>	<b>Org. Carb.</b>	<b>ation</b>	<b>(=K*i/n*R)</b>			
<b>(ft/day)</b>	<b>(ft/ft)</b>	<b>(dec. frac.)</b>	<b>(g/cm<sup>3</sup>)</b>			<b>(R)</b>	<b>(ft/day)</b>			
	3.70E+00	0.003	0.05	1.7	93	1.00E-03	4.162	0.053339741		
<b>Point Concentration</b>										
<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>								
202	0	0								
	<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>							
<b>Conc. At</b>	202	0	0							
<b>at</b>	11950	<b>days =</b>								
			0.004							
			mg/l							
	<b>AREAL</b>	<b>CALCULATION</b>								
	<b>MODEL</b>	<b>DOMAIN</b>								
	Length (ft)	201								
	Width (ft)	100								
	20.1	40.2	60.3	80.4	100.5	120.6	140.7	160.8	180.9	201
100	0.001	0.003	0.004	0.003	0.003	0.003	0.002	0.002	0.001	0.001
50	0.063	0.047	0.034	0.025	0.018	0.013	0.010	0.007	0.005	0.004
0	0.063	0.047	0.035	0.026	0.020	0.015	0.011	0.008	0.006	0.005
-50	0.063	0.047	0.034	0.025	0.018	0.013	0.010	0.007	0.005	0.004
-100	0.001	0.003	0.004	0.003	0.003	0.003	0.002	0.002	0.001	0.001
<b>Field Data:</b>	<b>Centerline C Concentration</b>			0.0856	0.022					
	<b>Distance from Source</b>			0	90					

NEW QUICK\_DOMENICO.XLS

SPREADSHEET APPLICATION OF  
"AN ANALYTICAL MODEL FOR  
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Modified to Include Retardation

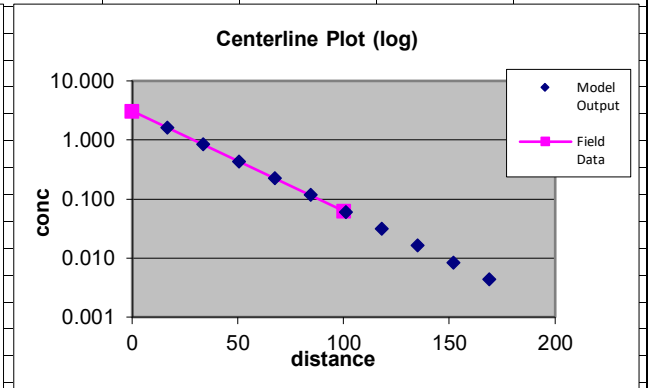
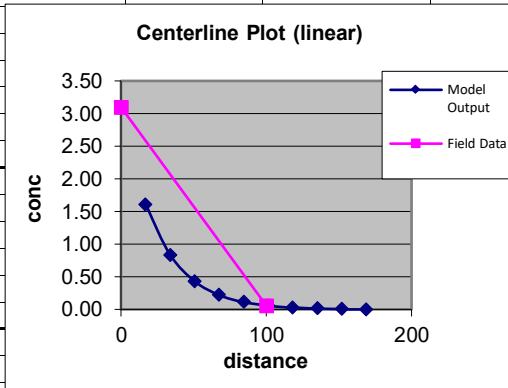


NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL																																																																															
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<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>day-1</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>																																																																								
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NEW QUICK\_DOMENICO.XLS

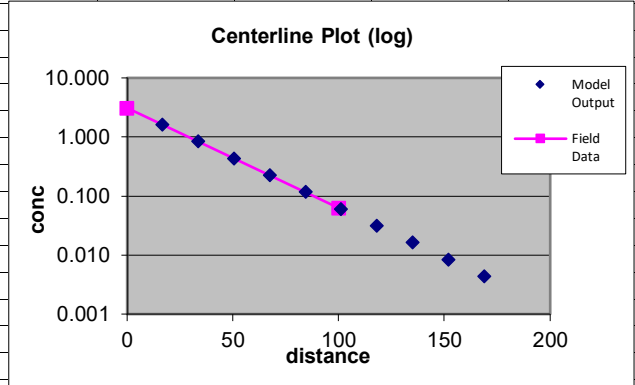
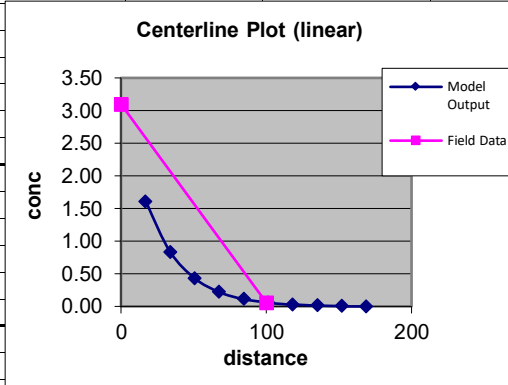
SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation





NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL							
Project:	Former TCCA Site						
Date:	2/21/2022	Prepared by:	RS				
		Contaminant:	Benzene - projected				
<b>SOURCE</b>	<b>Ax</b>	<b>Ay</b>	<b>Az</b>	<b>LAMBDA</b>	<b>SOURCE</b>	<b>SOURCE</b>	<b>Time (days)</b>
<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>day-1</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>
<b>(MG/L)</b>			<b>&gt;=.001</b>		<b>(ft)</b>	<b>(ft)</b>	
	3.1	2.00E+01	2.00E+00	1.00E-04	0.00515	160	5
<b>Hydraulic</b>	<b>Hydraulic</b>		<b>Soil Bulk</b>		<b>Frac.</b>	<b>Retard-</b>	<b>V</b>
<b>Cond</b>	<b>Gradient</b>	<b>Porosity</b>	<b>Density</b>	<b>KOC</b>	<b>Org. Carb.</b>	<b>ation</b>	<b>(=K*i/n*R)</b>
<b>(ft/day)</b>	<b>(ft/ft)</b>	<b>(dec. frac.)</b>	<b>(g/cm<sup>3</sup>)</b>			<b>(R)</b>	<b>(ft/day)</b>
	3.70E+00	0.003	0.05	1.7	58	1.00E-03	2.972
							0.074697174
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>NEW QUICK_DOMENICO.XLS</p> <p>SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation</p> </div>							
<b>Point Concentration</b>							
<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>					
100	0	0					
	<b>x(ft)</b>	<b>y(ft)</b>	<b>z(ft)</b>				
<b>Conc. At</b>	100	0	0				
<b>at</b>	11950	<b>days =</b>					
			<b>0.064</b>				
			<b>mg/l</b>				
<b>AREAL MODEL</b>			<b>CALCULATION DOMAIN</b>				
	<b>Length (ft)</b>		169				
	<b>Width (ft)</b>		100				
	16.9	33.8	50.7	67.6	84.5	101.4	118.3
100	0.012	0.036	0.035	0.025	0.016	0.010	0.006
50	1.609	0.831	0.426	0.217	0.111	0.056	0.029
0	1.609	0.835	0.433	0.225	0.117	0.061	0.031
-50	1.609	0.831	0.426	0.217	0.111	0.056	0.029
-100	0.012	0.036	0.035	0.025	0.016	0.010	0.006
<b>Field Data:</b>	<b>Centerline C Concentration</b>			3.1	0.0631		
	<b>Distance from Source</b>			0	100		



NEW QUICK DOMENICO

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION, 1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL										
Project:	Former TCCA Site									
Date:	2/21/2022	Prepared by:	RS							
		Contaminant:	Naphthalene - attempted calibration							
SOURCE	Ax	Ay	Az	LAMBDA	SOURCE	SOURCE	Time (days)			
CONC (MG/L)	(ft)	(ft)	(ft)	day-1	WIDTH (ft)	THICKNESS (ft)	(days)			
	5.9	5.40E+01	1.00E-01	1.00E-04	0.0001	160	5			
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm <sup>3</sup> )	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)			
	3.70E+00	0.003	0.05	1.7	950	1.00E-03	33.3			
Point Concentration										
x(ft)	y(ft)	z(ft)								
100	0	0								
Conc. At										
at			100	0						
			4803	days =						
			0.622							
			mg/l							
AREAL MODEL			CALCULATION DOMAIN							
Length (ft)			250							
Width (ft)			100							
	25	50	75	100	125	150	175	200	225	250
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	3.494	2.192	1.241	0.622	0.273	0.104	0.034	0.009	0.002	0.000
0	3.494	2.192	1.241	0.622	0.273	0.104	0.034	0.009	0.002	0.000
-50	3.494	2.192	1.241	0.622	0.273	0.104	0.034	0.009	0.002	0.000
-100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data:	Centerline C Concentration			5.9	0.627					
	Distance from Source			0	100					

NEW QUICK\_DOMENICO.XLS

SPREADSHEET APPLICATION OF  
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P.A. Domenico (1987)  
Modified to Include Retardation

Centerline Plot (linear)

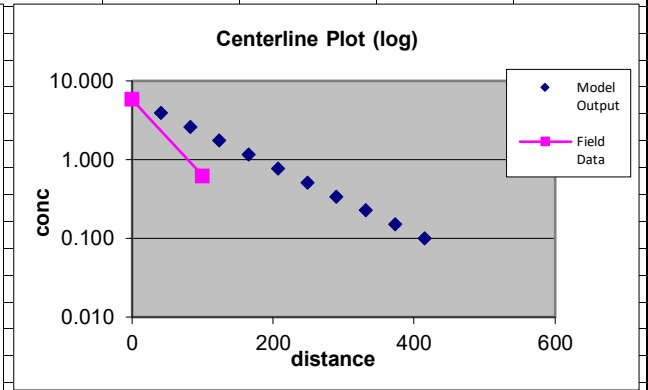
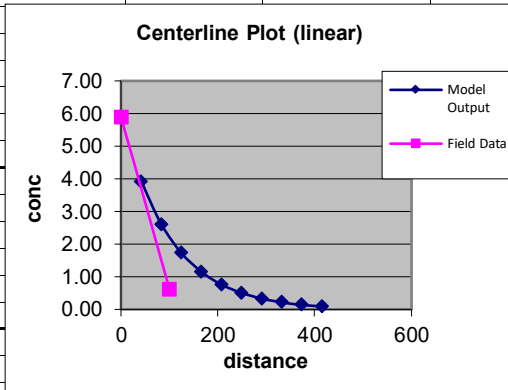
Centerline Plot (log)

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<b>CONC</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>(ft)</b>	<b>WIDTH</b>	<b>THICKNESS</b>	<b>(days)</b>																																		
<b>(MG/L)</b>			<b>&gt;=.001</b>	<b>day-1</b>	<b>(ft)</b>	<b>(ft)</b>																																			
	5.9	5.40E+01	1.00E-01	1.00E-04	0.0001	160	5	65000																																	
<b>Hydraulic</b>	<b>Hydraulic</b>		<b>Soil Bulk</b>		<b>Frac.</b>	<b>Retard-</b>	<b>V</b>																																		
<b>Cond</b>	<b>Gradient</b>	<b>Porosity</b>	<b>Density</b>	<b>KOC</b>	<b>Org. Carb.</b>	<b>ation</b>	<b>(=K*i/n*R)</b>																																		
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	3.70E+00	0.003	0.05	1.7	950	1.00E-03	33.3	0.006666667																																	
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# **APPENDIX I**

## **PaGWIS Database Search**

PAGWIS Search Results

PAWellID	County	Municipality	QuadName	WellAddress	WellZipCod	DateDrilled	TypeOfActivity	LatitudeDD	LongitudeDD	Driller	OriginalOwner	WellUse	WaterUse	WellDepth(ft)	TopOfCasing(ft)	BottomOfCasing(ft)	CasingDiamet	DepthToBedrock(ft)	BedrockNotReached	WellYield(gpm)	StaticWaterLevel(ft)	WaterLevelAft	LengthOfTest	YieldMeasurement	M SaltwaterZone(ft)	FormationName	PaperImageLink	Remark	
694645	MONTGOMERY	SPRINGFIELD TW		1725 Walnut Ave	19075	3/9/2021	NEW WELL	40.12064	-75.19197	TALON DRILLING	Springfield	MONITORING		50	0	30	2	25	False		41								
694644	MONTGOMERY	SPRINGFIELD TW		1725 Walnut Ave	19075	3/11/2021	NEW WELL	40.12036	-75.19175	TALON DRILLING	Springfield	MONITORING		120	0	70	5	47	False		61								
694578	MONTGOMERY	SPRINGFIELD TW		1725 Walnut Ave	19075	3/10/2021	NEW WELL	40.12009	-75.19233	TALON DRILLING	Springfield LP	MONITORING		99	0	70	5	33	False		41								
694577	MONTGOMERY	SPRINGFIELD TW		1725 Walnut Ave	19075	3/8/2021	NEW WELL	40.12038	-75.19221	TALON DRILLING	Springfield	MONITORING		80	0	70	5	47	False	1	47			ESTIMATED					
692556	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 Walnut Ave	19075	10/6/2020	NEW WELL	40.11982	-75.19252	EICHELBERGERS	Springfield Town	OBSERVATION	UNUSED	50	0	30	2		True										
692555	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 Walnut Ave	19075	10/6/2020	NEW WELL	40.12042	-75.19206	EICHELBERGERS	Springfield Town	OBSERVATION	UNUSED	50	0	30	2		True										
692554	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 Walnut Ave	19075	10/6/2020	NEW WELL	40.12079	-75.19176	EICHELBERGERS	Springfield Town	OBSERVATION	UNUSED	50	0	30	2		True										
692553	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 Walnut Ave	19075	10/6/2020	NEW WELL	40.11967	-75.19178	EICHELBERGERS	Springfield Town	OBSERVATION	UNUSED	50	0	30	2		True										
676055	MONTGOMERY	SPRINGFIELD TW		2101 PENNSYLV		4/17/2019	NEW WELL	40.12683	-75.19676	C S GARBER & S	FAIRWOLD ACAC	MONITORING		150	0	42	6.25	35	False	2				ESTIMATED				MONITORING W	
618771	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 WALNUT A	19075	6/12/2009	NEW WELL	40.11852	-75.19103	EICHELBERGERS	TANK CAR CORP	OBSERVATION	UNUSED	52	0	32	2		True										
617582	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1755 WALNUT A	19075	6/12/2009	NEW WELL	40.11825	-75.19171	EICHELBERGERS	TANK CAR CORP	OBSERVATION	UNUSED	50	0	30	2		True										
617581	MONTGOMERY	SPRINGFIELD TW	GERMANTOW	1725 WALNUT A	19075	6/12/2009	NEW WELL	40.11852	-75.19094	EICHELBERGERS	TANK CAR CORP	OBSERVATION	UNUSED	45	0	25	2		False										
494817	MONTGOMERY	SPRINGFIELD TW		PENNSYLVANIA /		2/17/2009	NEW WELL	40.12694	-75.19639	C S GARBER & S	WADSWORTH A	MONITORING		172	0	10	6.25	10	False	3	165			ESTIMATED				MONITORING W	
494816	MONTGOMERY	SPRINGFIELD TW		PENNSYLVANIA /		2/17/2009	NEW WELL	40.12694	-75.19639	C S GARBER & S	WADSWORTH A	MONITORING		196	0	10	6.25	10	False	2	193			ESTIMATED				MONITORING W	

## **APPENDIX J**

### **PNDI Search Receipt**

## 1. PROJECT INFORMATION

Project Name: **Former TCCA Site**

Date of Review: **1/31/2022 12:55:07 PM**

Project Category: **Hazardous Waste Clean-up, Site Remediation, and Reclamation, Spill (e.g., oil, chemical)**

Project Area: **7.01 acres**

County(s): **Montgomery**

Township/Municipality(s): **SPRINGFIELD TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **GERMANTOWN**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **Lower Wissahickon Creek**

Decimal Degrees: **40.120218, -75.191339**

Degrees Minutes Seconds: **40° 7' 12.7848" N, 75° 11' 28.8221" W**

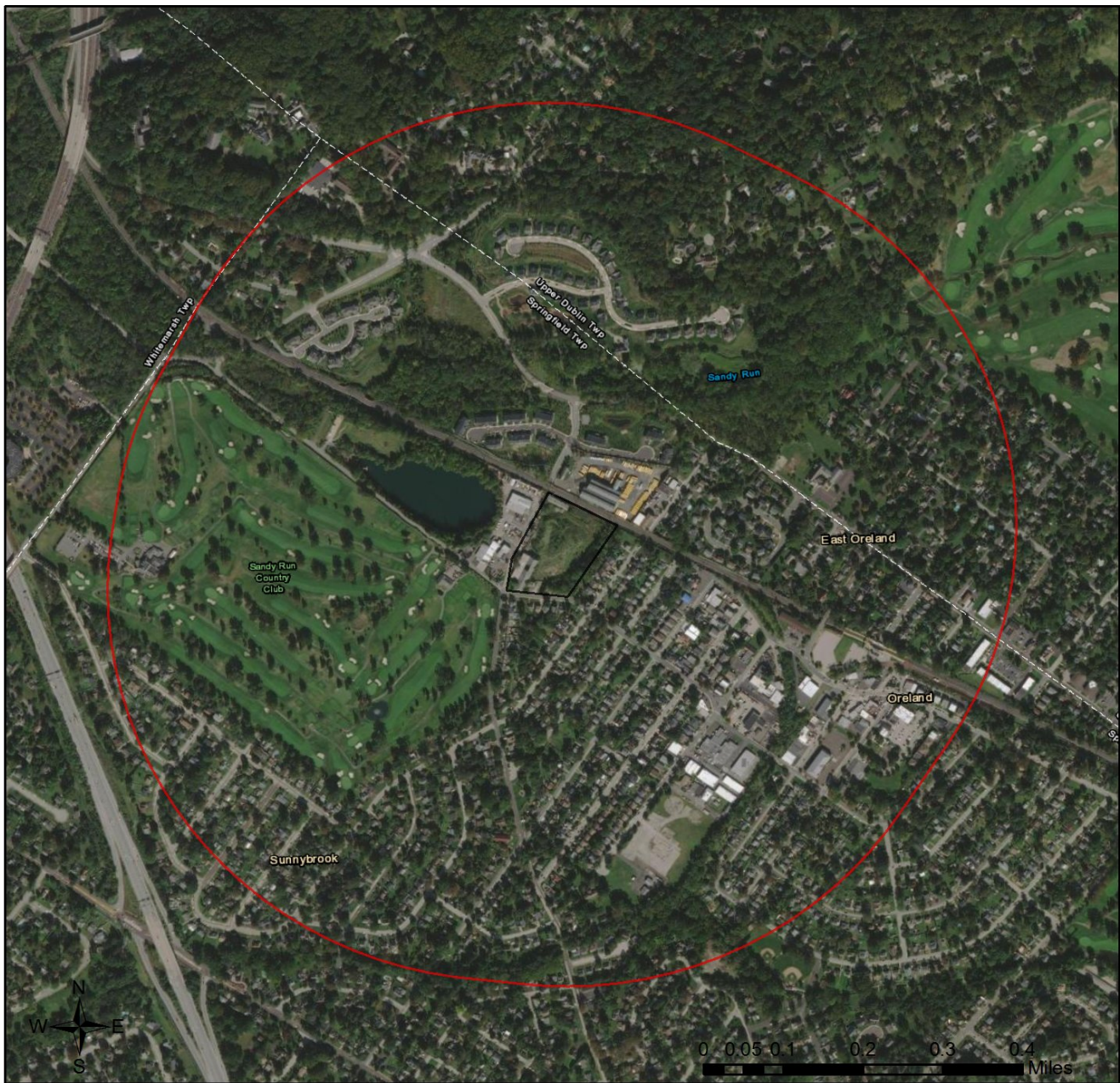
## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

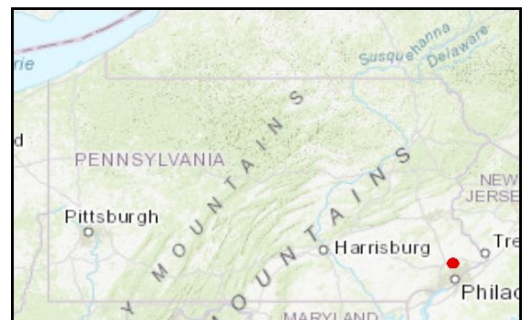
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



### Former TCCA Site



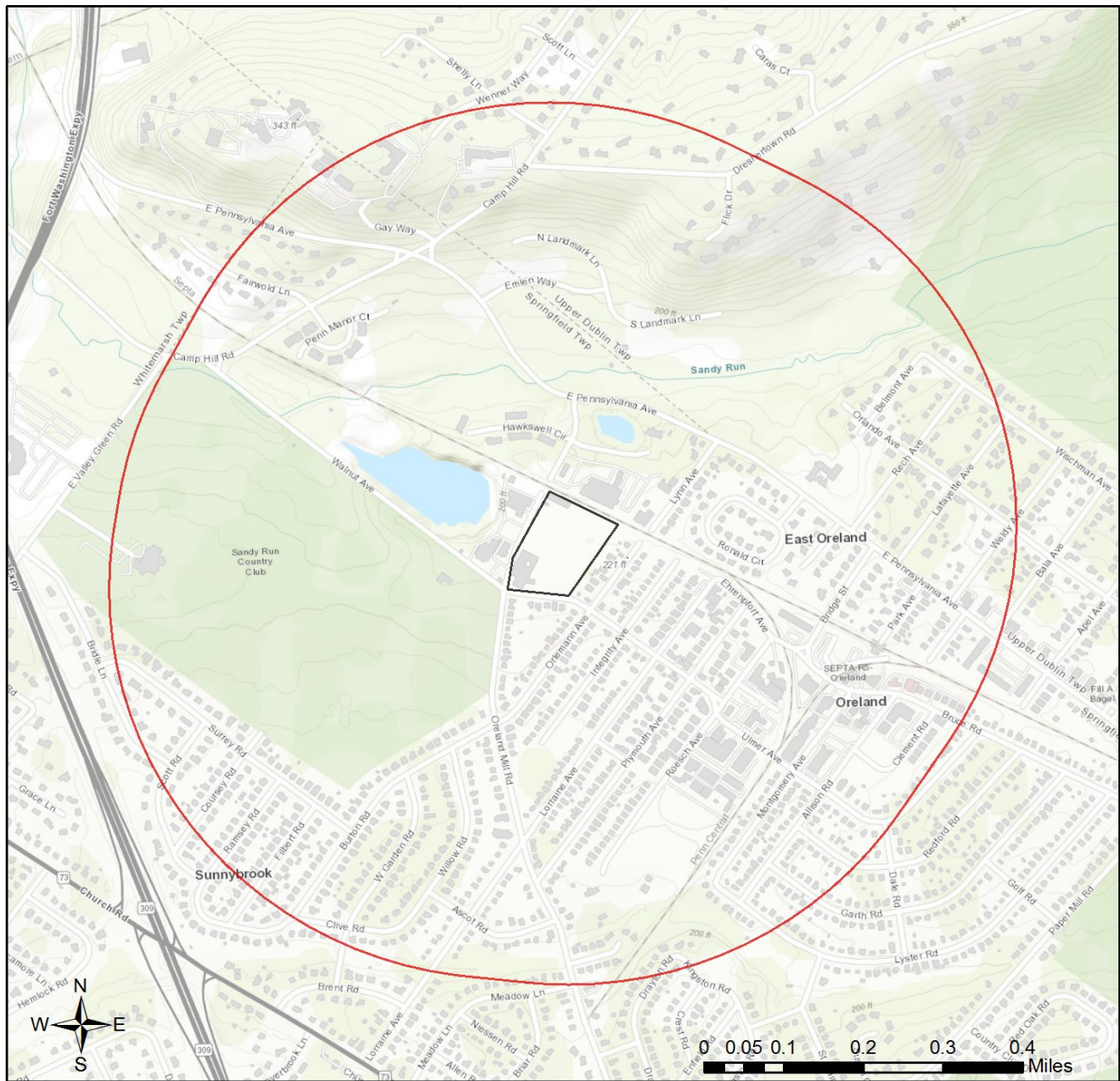
- Project Boundary
- Buffered Project Boundary



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

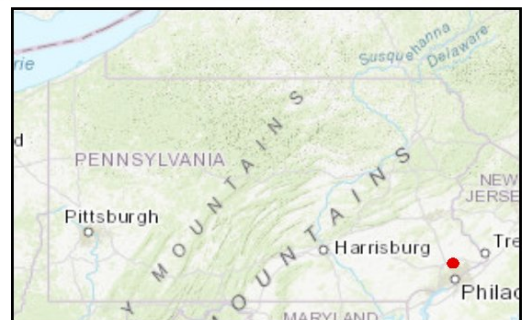


### Former TCCA Site



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intemap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

##### RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552  
Harrisburg, PA 17105-8552  
Email: [RA-HeritageReview@pa.gov](mailto:RA-HeritageReview@pa.gov)

### PA Fish and Boat Commission

Division of Environmental Services  
595 E. Rolling Ridge Dr., Bellefonte, PA 16823  
Email: [RA-FBPACENOTIFY@pa.gov](mailto:RA-FBPACENOTIFY@pa.gov)

### U.S. Fish and Wildlife Service

Pennsylvania Field Office  
Endangered Species Section  
110 Radnor Rd; Suite 101  
State College, PA 16801  
Email: [IR1\\_ESPenn@fws.gov](mailto:IR1_ESPenn@fws.gov)  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA 17110-9797  
Email: [RA-PGC\\_PNDI@pa.gov](mailto:RA-PGC_PNDI@pa.gov)  
NO Faxes Please

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone: (\_\_\_\_) \_\_\_\_\_ Fax: (\_\_\_\_) \_\_\_\_\_  
Email: \_\_\_\_\_

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date