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June 27, 2014 TL04-14-01-001-DCN708

Mr. Joe Nowak
United States Environmental Protection Agency
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

RE: EPA Contract No. EP-S3-10-04; Technical Direction Document No. TL04-11-10-001; Phase II Environmental Site Assessment, Beech Bottom Plant and Industrial Park, Beech Bottom, West Virginia

Dear Mr. Nowak:

Please find enclosed TechLaw's Phase II Environmental Site Assessment (ESA) Report for the sampling investigation at the Beech Bottom Plant and Industrial Park Site located in Beech Bottom, West Virginia. This Phase II ESA was completed in general accordance with TechLaw's approved Site Specific Sampling QA/QC Work Plan dated April 28, 2014.

This deliverable is being forwarded to you through electronic mail (via the internet) in Adobe Acrobat PDF and Microsoft Word formats. We appreciate this opportunity to assist the USEPA Region III and look forward to providing continued support. If you have any questions, please feel free to contact me at (304) 907-0632.

Sincerely,

Suddha Graves
Project Manager

cc:
C. Korbini, WVDEP
M. Six, BDC
TL Central File

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Photo Source: CBRE-Beech Bottom Plant, Beech Bottom, West Virginia

BEECH BOTTOM PLANT AND INDUSTRIAL PARK
2481 RIVER ROAD
BEECH BOTTOM, WEST VIRGINIA 26070

REPORT DATE: JUNE 27, 2014

TechLaw

PHASE II ENVIRONMENTAL SITE ASSESSMENT

BEECH BOTTOM PLANT AND INDUSTRIAL PARK
2481 RIVER ROAD
BEECH BOTTOM, WEST VIRGINIA 26070

REPORT DATE: JUNE 27, 2014

PREPARED FOR:

U.S. EPA REGION 3
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EXECUTIVE SUMMARY

TechLaw, Inc. (TechLaw) was tasked by the United State Environmental Protection Agency (USEPA) Region 3 to conduct a Phase II Environmental Site Assessment (Phase II ESA) on 33 acres of the proposed Beech Bottom Plant and Industrial Park Site located at 2481 River Road, in Beech Bottom, West Virginia (the Facility or former Wheeling Corrugating Company – Beech Bottom Plant (WCC-BB Plant). The Facility is currently owned by the Business Development Corporation of the Northern Panhandle.

A Phase I ESA report was prepared by TechLaw in April 2014 on a larger tract of land comprising nine parcels and approximately 200 acres of land owned by the Business Development Corporation of the Northern Panhandle (TechLaw, 2014). Onsite recognized environmental conditions (RECs) were identified during the Phase I ESA.

As a follow-up to the Phase I ESA findings, a Phase II Sampling QA/QC Work Plan (SQAP) (TechLaw, 2014a) was submitted to USEPA, and subsequently approved and implemented. The Phase II ESA sampling investigation was conducted during May 2014. The Phase II ESA investigation consisted of constructing and sampling a total of nine monitoring wells (MW-1 through MW-9), 21 soil borings, eight surface soil, four sediment samples, three surface water samples, and one raw well water (process water) sample at the Facility.

The analytical data was compared against the West Virginia DeMinimis Levels (Table 60-3B) for industrial soil and tap water, and the USEPA Region 3 Biological Technical Assistance Group (BTAG) freshwater screening benchmarks for surface water and sediments.

Based on the results from the Phase II ESA sampling effort conducted by TechLaw, the site's groundwater appears to have been adversely impacted by bis(2-ethylhexyl) phthalate, hexavalent chromium, and multiple inorganic analytes. Bis(2-ethylhexyl) phthalate was found at monitoring well 3 (MW-3) at a concentration of 6.12 ug/L, and at MW-6 at 7.36 ug/L. Hexavalent chromium (CrVI) was found at MW-6 at a concentration of 0.00105 mg/L. The following inorganic analytes were found to be elevated within the groundwater at the Site; cadmium, cobalt, iron, lead, manganese, vanadium, and zinc. The

groundwater did not contain any elevated levels of volatile organic compounds (VOCs) or polycyclic aromatic hydrocarbons (PAHs).

The analytical results from the surface soil samples indicate that elevated concentrations of benzo(a)pyrene exist at SS-12 and SS-15, which are both in the staging area north of Building 10. Elevated levels of arsenic were present within the following samples (SS-3 at 36.3 mg/kg, SS-11-A at 30 mg/kg, SS-13 at 68.3 mg/kg, SS-14 at 85.1 mg/kg, and SS-23 at 28.6 mg/kg. Vanadium was found at elevated concentrations at SS-12 (504 mg/kg). Lead was found at elevated concentrations with the following samples (SS-6 at 359,000 mg/kg and at the duplicate sample (SS-6-A at 5,430 mg/kg). The site's surface soils did not contain any elevated levels of VOCs, polychlorinated biphenyls (PCBs), or CrVI.

The analytical results from the subsurface soil samples indicate that elevated concentrations of inorganic analytes (arsenic and lead) and cyanide exist at the Site. Elevated levels of arsenic were present within the following samples; SBS-4-1 at 39.3 mg/kg, SBS-12 at 35.8 mg/kg, SBS-12-A at 42.5 mg/kg, SBS-13 at 35.8 mg/kg, and SBS-14 at 35.6 mg/kg. Lead was found at elevated concentrations with the following samples; SBS-4-1 at 28,900 mg/kg, and SBS-16-1 at 2,070 mg/kg. One sample, SBS-10, contained elevated levels (47.4 mg/kg) of cyanide. The site's subsurface soils did not contain any elevated levels of VOCs, SVOCs, PCBs, or CrVI.

The following inorganic analytes were found to be elevated within the surface water at the Site; aluminum, arsenic, barium, calcium, copper, iron, lead, manganese, and selenium. However, in every instance except for calcium and manganese, the highest concentrations were in sample SW-3, which was a background sample collected upstream from the facility. The background sample was collected from Mine Run upstream of the site. This presence of the elevated inorganic analytes found within the background surface water sample, would suggest that they may not be attributable to the site. The surface water samples did not contain any elevated levels of VOCs, SVOCs, or PAHs.

The analytical results from the sediment samples indicate that an elevated concentration of carbon disulfide was present within sample SD-1-A (0.0107 mg/kg). Additionally,

numerous SVOCs were found at elevated levels within samples SD-1 and SD-1-A. Both of these samples were collected from the left descending bank of the Ohio River where the outfall is located. Other SVOCs were also noted at elevated levels within the samples (SD-3 and SD-4) collected from Mine Run. All sediment samples (SD-1, SD-1-A, SD-2, SD-3, and SD-4) contained elevated concentrations of metals. Many of the elevated analytes were found to be the highest at the background location (SD-4). The presence of the elevated inorganic analytes found within the background sample, would suggest that they may not be attributable to the site. The sediment samples did not contain any elevated levels of PCBs.

It is recommended that the Business Development Corporation (BDC) of the Northern Panhandle coordinate with their Licensed Remediation Specialist (LRS) and West Virginia Department of Environmental Protection (WVDEP) with the finding of this report to discuss how best to address the future reuse of the Facility.

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1 INTRODUCTION

Under the United States Environmental Protection Agency (USEPA) Region III Superfund Technical Assessment and Response Team (START) Contract, TechLaw, Inc. (TechLaw) was tasked to conduct a Phase II Environmental Site Assessment (Phase II ESA) on the former Wheeling Pittsburgh Steel Corporation (WPSC) property located at the postal address 2481 River Road (a.k.a. State Route 2 (SR 2)), Wellsburg, West Virginia, 26070 (the site). (See Appendix A, Figure 1 – Site Location Map, and Figure 2 – Site Parcel Map).

The Phase II ESA was performed on approximately 33 acres of the Site property which will be referred to throughout the Phase II ESA as either the Facility or Wheeling Corrugating Company -Beech Bottom Plant (WCC-BB Plant). The Facility includes the former WCC-BB Plant buildings, parking areas and storage areas.

In May 2014, as part of the Phase II ESA investigation, TechLaw collected surface soil, subsurface soil, sediment, surface water, waste, and groundwater samples from the Facility. This Phase II ESA report describes the work performed, discusses findings based on the analytical data and other observations, and compares the sample data with the appropriate screening levels.

1.1 SCOPE OF SERVICES

The Phase II ESA was performed in general conformance with the scope and limitations of with the American Society for Testing and Materials (ASTM) Standard E1903-11, Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process (hereinafter referred to as the ASTM Standard) and includes the following activities:

- Perform a geophysical survey and underground utility clearance;
- Install nine monitoring wells;
- Collect nine groundwater samples from the monitoring wells using low-flow sampling methods;
- Complete 21 borings to collect surface and subsurface soil samples;

- Collect eight surface soil samples;
- Collect four sediment samples;
- Collect three surface water samples;
- Collect one raw well water (process water for facility);
- Perform laboratory analysis on all samples;
- Perform third-party independent data validation on analytical results;
- Survey the locations and elevations of nine monitoring wells; and
- Transport and dispose of investigation-derived waste.

2 SITE/FACILITY BACKGROUND

2.1 LOCATION

The Site/Facility is located west of State Route 2 in an area just south of Wellsburg, West Virginia, known as Beech Bottom, West Virginia. The postal address of the Site is 2481 River Road, Wellsburg, West Virginia, 26070. Please refer to the Figure 1 – Site Location Map in Appendix A.

The Site is part of a group of property parcels owned by the Business Development Corporation of the Northern Panhandle. As part of the Phase I ESA, dated April 2014, a total of nine parcels were assessed. However, the Phase II ESA investigation, as directed by EPA, only assessed the approximately 33 acres immediately surrounding the facility building(s).

The parcel assessed as part of the Phase II ESA investigation is recorded in the Brooke County Assessor's property records as follows:

Parcel ID	Current Owner	Acreage (acres)	Land Use/Description
01-BB36-0001-0000	Business Dev Corp of the Northern Panhandle	40.56	Steel Mill/Beech Bottom Plant

Refer to Figure 2 – Site Parcel Map for the location of the Facility in reference to the Site.

The Facility is comprised of approximately 33 acres of the former WCC-BB Plant. A paved entrance and access way is located on the central east side of the former plant front along SR 2. Eleven (11) main buildings, including an office, are currently located on the Facility site, which encompass approximately 468,000-square feet of space. No known cooling (i.e. air conditioning) systems are present. Building 1, formerly located on the southeast corner of the plant building, was razed and the building pad is currently used as parking area. Immediately surrounding the WCC-BB Plant is an intermittently paved storage

yard/roadway. A waste water treatment plant (WWTP) is located northwest of the facility buildings.

The following utilities are available to the Facility:

- Electric: Allegheny Power
- Gas: Mountaineer Gas Company
- Potable Water: City of Wellsburg
- Process Water: 3 on-site wells (Currently only 1 is active)
- Sewer: City of Wellsburg

The Facility is generally flat with groundwater flowing west toward the Ohio River. Storm water flows via surface catch basin to permitted outfalls within the facility. Ponding occurs in some areas without surface drains (2011 SPCC).

The former WCC-BB Plant closed its manufacturing operations at the Facility in August 2012 (URS, 2012). The BDC purchased the Site from Hackman in 2012. Hackman purchased the Site in 2012 at public auction held as part of bankruptcy proceedings by RG Steel in 2012 (Weirton Daily Times (WDT)).

Hackman and BDC partnered to redevelop the vacant/undeveloped Site. In March 2013, BDC/Hackman arranged an equipment auction and auctioned off some of the former equipment of the vacant former WCC-BB Plant. In April 2013, Jupiter Aluminum, an Illinois based company, purchased the WCC #1 Coil Coating Line (CCL) and began leasing the plant Buildings 5 and 6 (approximately 111,000 square feet) for operations. (2014 GEI; CBRE, 2013)

Sheehan Pipeline, Integrity Kokosing Pipeline Services, ProFoam LLC, and L&M Logistics have recently begun leasing portions of the property adjacent to the north of the Facility. Sheehan Pipeline, Integrity Kokosing Pipeline Services, and ProFoam LLC are in the oil and natural gas industries and use portions of the Site for staging yards. L&M Logistics, a company which provides vehicular escorts for oil and natural gas companies, is leasing a 2-

acre portion of the Site. Refer to Figure 3 – Current Site Use Map for the current layout/use of the Site.

The area to the south of the WCC-BB Plant is currently used as a temporary parking lot for a vehicle escort company as well as a storage lot for companies supporting the oil and gas industry. The area to the north of the WCC-BB Plant is used as a storage lot for a pipeline company supporting the oil and gas industry. The land west of the former railroad is currently wooded and a bike trail (Brooke Pioneer Trail) runs along the former railroad tracks.

2.2 SITE/FACILITY HISTORY

2.2.1 EARLY SITE/FACILITY OPERATIONS

The WCC-BB Plant was built circa 1910 and owned by Wheeling-Pittsburgh Steel Company (f/k/a Whitaker-Glessner Company) (2000 WCC; Mettallurgical, 1916). Little is known about the early operation at the WCC-BB Plant. Whitaker-Glessner Company purchased land in Beech Bottom, West Virginia to manufacture open-hearth furnaces, sheet bar mills and ultimately blast furnaces (Mettallurgical, 1916). A 1973 document prepared by WCC for the BB Plant provides information related to operation at the plant in 1973 along with some historical information related to the inception of certain departments at the BB Plant. In 1973 the BB Plant occupied approximately 25 acres and consisted of 10 main buildings and several smaller structures, such as pump scale houses, paint storage, lumber sheds, laboratory, garages, offices, etc. The 10 buildings provided approximately one-half million square feet of floor space for shops, manufacturing facilities, storage and shipping. These buildings were serviced by overhead cranes. The handling facilities included floor operated hoists, a locomotive, dump trucks, tractor trailers, fork lifts, etc. The shipping facilities included two outside and six inside railroad spurs along with truck loading stations (1973 WCC).

Water at the plant was supplied by two water wells. A combination of oil and gas fired boilers were used for space heating and certain plant operations.

Improvements at the BB Plant included a new Sewage Treatment Plant, location of new water supply, a new smokeless incinerator, safety apparel and new cranes. In 1973, they were in the process of designing a new effluent treatment plant that would meet all the regulations being required by the Federal government to clean up stream and rivers.

In 1973 the following products were manufactured at the BB Plant:

- Acoustical Roof Deck
- Bar-Z Shoes
- Bridge Form
- Casing Bead
- Clamps and Clips
- Coil Inserts
- Coil Slitting
- Cold Formed Channels
- Concrete Reinforcing Mesh
- Corner Beads
- Cornerite & Stripite
- Culvert Bands and Band Strips
- Drywall Studs and Accessories
- Enclosures
- Expanded Metal
- Fabricated Products
- Floor and Ceiling Runners
- Frame Bar
- Glare Barrier Mesh and Posts
- Gratings and Walkways
- Long Span Deck
- Metal Lath
- Painted Coils
- Partitions
- Refuse Containers
- Sheet Metal Grating
- Stair Treads
- Structural Plate
- Stucco Binder
- Studs and Track
- Sump Pans
- Super Rib Roof Deck
- Tensilform
- Tree Guards

In 1973, the following Departments were operating at the WCC-BB Plant:

- Coil Coating and Super Rib Department

  Wheeling Steel was the first basic steel company to install a large continuous Coil Coating Line around 1961. Approximately 25,000-gallons of paint were used in an average month.

  This Super Rib Roof Deck Department began operation at the BB Plant in 1960 and was a complete transition from the previous methods of manufacture.

  In 1968, Tensilform and Bridge form production was added to this department.

- Fabricating Department

  The fabricating department began operation in the mid-1930s.

- Expanded Metal and Lath Departments

  The manufacture of Expanded Metal began in 1926 in the oldest section of the BB Plant that was formerly known as the Steelcrete Factory.

  The Lath department began operation in 1927.

2.2.2 LATER PLANT OPERATIONS AND PROCEDURES

More recently, primary operations at the former WWC-BB Plant included coil coating and roll forming of rolled and galvanized steel for production of metal decking products. The Production operations at the BB Plant were located indoors (2007 SWPP). The industrial building housed two CCLs (Building 6 and 7a), two metal forming lines (Building 8), area for storage (all buildings), maintenance (machine shop and Building 3), water treatment (Building 5 and 7), chemical storage (Buildings 3, 4, 5, 7, and paint tank room), boilers (Building 5), and hazardous waste storage (less 90 day hazardous waste storage building). The northwestern and southern sides of the facility were available for outdoor storage of products with the remainder of the facility comprising of the building for production and ancillary operations. (URS 2012)

Materials used for production and ancillary operation included paint, acid, phosphate coatings, solvents, oils and lime. The Plant's WWTP was located near the northwest corner of the Facility, west of product storage. (2007 SWPP)

2.2.3 OPERATIONS AND STORAGE

Paint Line Assembly or Coil Coating Lines

The plant operated only one coil coating line in Building 6 until around 2001 when the second line was installed in Building 7a. Rolls of galvanized sheet steel (coils) were unrolled, run through a zinc phosphate bath for precleaning, and then dipped into phosphoric acid. After cleaning, a 10% chromic acid and distilled water solution was dried onto the steel.

- Coil coating line #1: Sheets underwent chroming in a chromic acid solution and then entered into the priming booth where a solvent –based polyester paint was applied by rollers. An oven dried the paint, and the sheets entered a pant booth for an application of colored paint, followed by drying in an oven. The coated steel was then recoiled and staged for shipping and storage. (URS, 2012)

- Coil Coating line #2: Conducted chroming and painting in a single step process. (URS, 2012)

The pre-cleaning and painting process was self-contained. The cleaning section of the paint line was connected to the WWTP by a 12-inch underground pipe. The piping was constructed of 20-foot sections of (SDRR) Polyvinyl chloride (PVC) pipe which did not require a leak detection system due to its construction. The piping carried acidic zinc phosphate wastewater, impurities removed from the steel and other non-hazardous material to the WWTP. The zinc phosphate sludge was periodically removed from the cleaning section of the coil coating line and transferred to a roll-off waste container for disposal at an off-site landfill. Twice a year the paint lines were cleaned and the sludge is placed in hoppers and disposed of in a landfill. The untreated non-contact cooling water was discharged to the Ohio River via National Pollutant Discharge Elimination System (NPDES) permit at Outfall 004. Any chromic acid spills were cleaned up with floor dry,

placed in drums, and disposed of off-site as hazardous waste. Approximately two 55-gallon drums of chromic acid were generated per year for disposal. Spilled primer and paint were cleaned with solvents, which were either recycled or drummer for off-site disposal. The pit beneath the coil feeder contained oil (gear or hydraulic) leaks, and the leaked material was then pumped to appropriate containers (drums) for recycling or disposal. (1995, 2006 GPP)

Volatile organic compounds (VOCs) from the ovens and paint rooms discharged to two regenerative thermal oxidizers (RTOs) on the site. During operation of the paint line, a representative of the solution supplier, Chemetall, maintained the chemical balance of the washes and rinses. (URS, 2012)

The following aboveground storage tanks (ASTs) and sumps were associated with the CCLs:

Storage Type	**Product**	**Location**
6,000-Gallon Tank	Bulk Bond 309R Zinc Phosphate	#1 CCL Chem Storage
5,000-Gallon Tank	Bulk Kleen 968 Alkaline Cleaner	#1 CCL Chem Storage
Phosphate Sump	Dilute Bulk Bond 309R	#1 CCL
Alkaline Sump	Dilute Bulk Kleen 968	#1 CCL
Chromic Sump	Bulk Bond NP-400B	#1 CCL
500 Gallon Tank	Bulk Kleen 968 Alkaline Cleaner	#2 CCL
Process Drain Sump	All	#2 CCL

These tanks and sumps were located in concrete contained areas (1995 GPP). Equipment sumps were used for uncoiling and coiling equipment. (URS, 2012)

Roll Forming Activities (Corrugating)

During roll forming activities (Building 8) coils were placed on feeders and were run through corrugating machine. The process was confined to inside of the warehouse. The corrugating machines required oils (hydraulic and cutting) which, if spilled, were cleaned up with floor dry and place in appropriate drums for disposal. The metal shavings were collected in hoppers for recycling and scrap. (1995, 2006 GPP)

Corrugated steel was stacked either manually or mechanically and staged in the western portion of the plant or in the north yard. (URS, 2012)

Chemical Paint and Storage

The paint storage area was constructed of concrete block with a metal roof, concrete floor, and elevated entries. The building had fire doors and a sprinkler system for fire protection. Any spills which occurred inside the plant would be cleaned up with appropriate material and placed in drums for disposal. (2006 GPP)

Coil coating line and boiler chemicals were stored in bulk tank. The tanks for the #1 Coil Coating Line and boiler house were stored under a metal roof on a concrete floor in a recessed area. (2006 GPP)

Tanks for the #2 Coil Coating Line was stored under metal roof on a concrete floor within containment. (2006 GPP)

Prior to July 1995, a 6,000 gallon elevated fiberglass hydrochloric acid storage tanks was located outside of Building 7. The tank was situated on a steel saddle above a graveled area. No secondary containment was in place. A 5,000-gallon plastic caustic soda storage tank was located inside Building 7 near the water demineralizers. The hydrochloric and caustic acid tanks were scheduled to be removed in July 1995 and were to be replaced with a completely new system. (1995 GPP)

Auto Repair Shop

An auto repair shop was used for conducting routine maintenance on vehicles. Oils and lubricants that were used in the shop were recycled, or if spilled, cleaned up with floor dry and placed in drums for disposal. (1995 GPP) No diagrams or supporting documentation was provided on the location of the auto repair shop.

Machine Shop

The machine shop was located in the east side of the plant between Building 2 and the engineering office. This area had equipment for machining parts, a black smith area, and three small ovens for baking parts (URS, 2012). A site plan of the facility dated September 6, 1986, identified the machine shop and black smith areas.

Wastewater Treatment Plant

Wash water from the wash line and wastewater from most sumps in the plant were pumped to central sumps and sent to the WWTP. The WWTP included two 100,000 –gallon clarifiers, a laboratory, one 187,000-gallon underground storage basin and one 900-gallon tote. Wastewater at this facility was treated using pH adjustment and settling. Sulfuric acid was mixed with wastewater in a treatment tank before being discharged into the settling , where it was stored until it could be treated. This basin is located approximately 20-feet below ground surface, beneath the WWTP building, and is constructed of 3-foot thick concrete. Lime slurry was then added in order to raise the pH to acceptable levels prior to discharge via Outfall 004 (after 2011 discharge water passed through a diffuser prior to entering the Ohio River). Sludge (solids) was removed and dewatered using a filter press. The filter press water was then returned to the wastewater tank, and the pressed solids were collected in waste containers for disposal as solid waste. (2006 GPP; 2011 WVDEP CSI, 2014 GEI; URS, 2012)

In 1995, the WWTP system included four 1,000-gallon above ground sulfuric acid tanks contained in a chemvault with a leak detection system. (1995 GPP)

Research conducted during the Phase I ESA identified that historically, the primary operations performed at the former WWC-BB Plant included coil coating and roll forming of rolled and galvanized steel for production of metal decking products. The northwestern and southern sides of the facility were available for outdoor storage of products with the remainder of the facility comprised of the building for production and ancillary operations. The production operations at the WCC-BB Plant were located indoors. Materials used for production and ancillary operation included paint, acid, phosphate coatings, solvents, oils and lime. The Plant's process wastewater treatment plant (WWTP) was located near the northwest corner of the Facility, west of product storage. (SWPP 2007)

3 PHASE II ACTIVITIES

This section outlines field observations and sampling procedures utilized at the Site/Facility. The Phase II ESA was conducted in accordance with the approved Site Specific Sampling QA/QC Work Plan (SQAP) dated April 28, 2014. Deviations from the SQAP are noted in Section 6.0.

The sampling investigation was conducted on May 5 - 21, 2014. Underground utilities coming onto the Site/Facility were marked using the Miss Utility of West Virginia, Inc. (WV 811) system prior to all subsurface investigations. Additionally, an onsite geophysical survey and utility line search was conducted prior to the sampling investigation.

The Phase II ESA included the following activities:

- Perform a geophysical survey and underground utility clearance;
- Install nine monitoring wells;
- Collect nine groundwater samples from the monitoring wells using low-flow sampling methods;
- Complete 21 borings to collect surface and subsurface soil samples;
- Collect eight surface soil samples;
- Collect four sediment samples;
- Collect three surface water samples;
- Collect one raw well water (process water for facility);
- Perform laboratory analysis on all samples;
- Perform third-party independent data validation on analytical results;
- Survey the locations and elevations of nine monitoring wells; and
- Transport and dispose of investigation-derived waste.

3.1.1 GEOPHYSICAL SURVEY AND UNDERGROUND UTILITY CLEARANCE

As requested by EPA, TechLaw initiated a geophysical investigation at the Site. There had been reports of buried underground storage tanks (USTs) and/or drums at the Site.

Additionally, with the planned monitoring well installation and subsurface soil boring activities to be conducted under the Phase II ESA investigation, an underground utility clearance was deemed necessary. TechLaw subcontracted GeoView, Inc. (GeoView) to perform the subsurface geophysical survey and underground utility clearance. For purposes of the geophysical investigation, the areas of interest were separated into two areas (Area A and Area B). Area A covered approximately 2.1 acres in size and was located generally within the staging area north of Building 10. Area B covered approximately 0.9 acres in size and was located in the northwestern section of the staging area (near Mine Run). During the Phase I ESA investigation, this area was found to contain numerous rusted drum carcasses partially buried in the hillside. The investigation was conducted from April 29, 2014 to May 1, 2014. The results of the geophysical investigation are presented in Appendix C.

The geophysical investigation was conducted using time domain electromagnetics (TDEM), electronic utility locators (EULs), and ground penetrating radar (GPR). The geophysical investigation identified 13 anomalous areas within Area A and 14 anomalous areas within Area B. The majority of the anomalies were suspected to be areas of buried metallic debris. The exceptions are Anomaly 1, which may be a buried vault and Anomaly 6, which appears to be sections of a buried railway spur. The anomaly areas within the northern portion of Area B may be partially due to the presence of partially buried scrap metal within the northern wooded areas. The remaining areas of significantly elevated EM response were attributable to catch basins, utility junctions, reinforced concrete or other visible metallic objects. (GeoView, 2014)

3.1.2 MONITORING WELL CONSTRUCTION

During May 5 - 12, 2014, nine monitoring wells were installed at the Site to evaluate groundwater for the presence of chemical constituents that could be attributed to an off-site release from the Beech Bottom Plant.

Kodiak Field Services was hired by TechLaw to construct the monitoring wells. Drilling was conducted by a West Virginia-licensed driller assisted by one or two assistants in accordance with an EPA-approved statement of work. Oversight was provided by TechLaw.

The monitoring wells were installed using a Geoprobe® 7822 DT track-mounted Direct Push Technology (DPT) unit equipped with a 4.25-inch inside diameter hollow-stem auger. All the monitoring wells were constructed using 2-inch diameter PVC screens and risers. A pre-packed 10 ft. length, 10 slot size (0.010-inch) well screen was installed for each well. Silica-based sand was poured into the annulus to extend the filter packs two feet above the top of the well screens. A minimum two feet thick well seal was installed immediately above the filter pack in each well by pouring bentonite chips into the annular space and activating by adding potable water, if needed. After allowing time for the bentonite to set up, the wells were completed to the surface with cement grout. Outer metal protective casing was installed to a height of approximately 2.5 feet around each well. To provide additional protection, three protective bollards were placed around each well, except for MW-1 and MW-5. The locations for MW-1 and MW-5 didn't necessitate the need for protective bollards. The wells were allowed to set up for a minimum of 24 hours before developing. The wells were developed using a submersible pump and dedicated tubing. The submersible pump was decontaminated after developing each well. Refer to Table 1 for monitoring well design information. Appendix H provides copies of all monitoring well construction logs. Permanent well locations are depicted in Appendix A - Figure 7.

Down-hole equipment was decontaminated with a power wash between drilling locations. All investigation derived waste (IDW) including drill cuttings, development water and wash water was contained in thirty 55-gallon drums and temporarily staged in a large covered metal shed located on the western portion of Building 10 (See Figure 5). The IDW was sampled for waste characterization by TechLaw on May 21, 2014 and was determined to be non-hazardous. The IDW was transported from the site/facility on June 26, 2014 for disposal by Veolia ES Technical Solutions L.L.C. under Manifest Tracking Number ZZ 00439573.

Well elevations and coordinates were surveyed on May 16, 2014 by TechLaw subcontractor Pedersen & Pedersen, Inc. A plat of the well locations and elevations are provided in Appendix I. Well construction information is provided below in Table 1.

Table 1 – Well Construction Measurements

Well/Sample ID	Northing (ft)[1]	Easting (ft)[1]	Elevation (ft TOIC)	Well Depth (ft TOIC)	Screen Interval (ft TOIC)	DTW (ft TOIC)[2]
MW-1	626023.622	1644288.437	656.823	21.61	11.61 - 21.61	11.52
MW-2	626717.019	1644519.383	665.114	29.55	19.55 - 29.55	20.12
MW-3	627242.979	1644734.853	669.507	32.29	22.29 - 32.29	22.72
MW-4	627650.111	1645753.468	668.399	42.36	32.36 - 42.36	23.56
MW-5	626797.582	1645377.661	675.511	31.93	21.93 - 31.93	24.86
MW-6	626148.133	1644893.732	670.086	41.43	31.43 - 41.43	24.81
MW-7	626333.071	1644613.83	666.497	29.85	19.85 - 29.85	21.36
MW-8	626969.68	1645010.891	669.525	31.92	21.92 - 31.92	23.11
MW-9	626624.727	1645676.524	702.473	52.2	42.2 - 52.2	43.66

1. Easting and Northing are State Plane West Virginia North (ft) NAD83
TOIC = Top of inner casing; amsl = above mean sea level; bgs = below ground surface

3.1.3 GROUNDWATER SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Groundwater samples were collected from nine monitoring wells and one tap sample from process water originating from well (#A7) located north of the facility. A figure depicting the locations of the groundwater samples is provided in Appendix A – Figure 7. Sample location tables are provided in Appendix K. Groundwater samples were collected from monitoring wells using low-flow sampling procedures outlined in the EPA guidance document EPA/540/S-95/504 - Puls, R., Barcelona, M. EPA Ground Water Issue: Low-Flow (Minimal Drawdown.). Ground-Water Sampling Procedures; April 1996. A synopsis of these procedures follows.

In general, monitoring well samples were collected in order from least contaminated to most contaminated (if known) in order to reduce the potential for cross-contamination during the sampling process. The well was purged (and sampled) using low-flow rates which minimize draw down (stress) until selected water quality parameters stabilized. The purge rates was less than (<) 0.5 liters per

minute (LPM) and the target well draw down was <0.1 meter (0.33 feet). Care was taken not to disturb the bottom sediments in the well prior to sampling due to the potential of prolonging the purge times. Similarly, care was taken to lower equipment slowly into the well to minimize the disturbance on settled sediment and mixing of the stagnant casing water within the screen interval.

Water quality measurements were collected and documented every three to five minutes commencing after approximately one volume of the purge/sampling train has been evacuated. Stabilization is achieved after all parameters had stabilized for three consecutive readings using the following criteria:

- pH ± 0.1 unit
- Conductivity ± 3%
- Redox ± 10 mv
- Turbidity ± 10%
- Dissolved Oxygen ± 10%

Depth-to-water (DTW) was measured from the top of the inner casing at all well locations and recorded in the Site logbook prior to the start of the sampling event. Additionally, DTW was recorded immediately prior to sampling of each monitoring well. Well integrity was evaluated and observations were noted in the Site logbook.

For duplicate samples, the duplicate sample container was filled immediately after the primary sample container was filled (per analysis). Duplicate samples were designated by placing an "A" at the end of the sample identification number. Sample containers were filled in the following order based on analyses: VOC, SVOC, polycyclic aromatic hydrocarbons (PAH) by selected ion method (SIM), total metals (including Mercury (Hg)), and hexavalent chromium (Cr VI).

The sample containers were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory.

3.1.4 SURFACE SOIL SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Surface soil samples were collected from twenty-eight (28) locations using the direct grab method and in accordance with TechLaw Standard Operating Procedure (SOP) No. 07-03-03, Soil Sampling and Analysis Procedure Surface/Near Surface Soil Sampling. A figure depicting the locations of the surface soil samples is provided in Appendix A – Figure 8. Sample location tables are provided in Appendix K. Surface soil samples were collected both from location where subsurface soil cores were collected as well as areas where only surficial soil was sampled. Samples were collected from the area of least contamination to most contamination if known, to minimize cross-contamination between locations.

From areas where subsurface soil cores were collected, a total of 20 surface soil samples were collected from the top 24 inches of recovered material in the core. A dedicated stainless steel or plastic scoop was used to collect the sample material. At select locations, if there were no stains, odors, or elevated photoionization detector (PID) readings, VOC analysis was omitted from the surface samples (See Sample Design Table in Section 3.1.9). If VOC analysis was not omitted, then an Encore® or similar sampler was used to collect the VOC samples. Stones, vegetation and debris were removed prior to placing the sample material into their respective containers. For duplicate samples, the duplicate sample container was filled immediately after the primary sample container was filled. Duplicate samples were designated by placing an "A" at the end of the sample identification number. For VOC analysis, the sample was collected prior to any homogenization. The remaining sample volume was thoroughly homogenized before placing in the appropriate sample containers.

From areas where only surficial soils (up to 24 inches bgs) were needed, a total of eight samples were collected. The sample volumes were collected from each location with a dedicated stainless steel or dedicated plastic scoop. The same sample collection procedure outline above was followed for these surface soil samples.

The sample containers were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory.

3.1.5 SUBSURFACE SOIL SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Using direct push technology, a total of 21 boreholes were advanced to the target depth outlined in the Sample Design Table in Section 3.1.9. A figure depicting the locations of the subsurface soil samples is provided in Appendix A – Figure 9. Sample location tables are provided in Appendix K. The three different target depths planned were as follows:

1. Depth to saturation zone. Depth was anticipated to range from 15 to 25 feet bgs. However, during the sampling event, the depth to saturation zone was discovered to extend to 42 feet bgs at the background location (BH-17). Onsite depths to saturation zone extended to 30 feet bgs. These samples were primarily near potential source areas/RECs. At these target areas, a subsurface soil sample was collected from the saturation zone. Additionally, the cores were screened using a combination of visual, olfactory, and instrumentation (PID) methods to determine if/where an additional sample should be collected. If additional samples were collected they were designated by adding a "-1" or a "-2" at the end of the sample identification number. This would indicate the first or second subsurface soil sample collected from this borehole location.

2. Depth to 8 feet. These samples were near areas where historical dumping and/or fill was suspected to be located. The subsurface cores were screened using a combination of visual, olfactory, and instrumentation (PID) methods to determine if/where the sample should collected. In the absence of elevated screening results, a sample was only collected within the top 2 feet. Note that due to the constraints of the drilling equipment (5 foot cores) used to collect these subsurface cores, the depths increased in increments of 5

feet. Many of these samples at this target depth actually were collected at a depth of 10 feet.

3. Depth to 4 feet. These samples were adjacent to electrical substations. The surface soil sample was collected from the top 24 inches, while the subsurface soil sample was collected from the remaining material. Once again, many of these samples were collected at a depth of 5 feet due to the constraints of the drilling equipment.

The method for retrieving cores was determined by the driller and the TechLaw member providing oversight. TechLaw logged soil characteristics including; core recovery, core interval, bedding thickness, observed grain size, plasticity, moisture content and contamination zones. See Appendix J for subsurface soil core logs. In addition to the characteristics noted above, TechLaw screened each core for visual staining, odors, and a PID instrument.

A dedicated stainless steel or plastic scoop was used to collect the sample material. An Encore® or similar sampler was used to collect the VOC samples. Stones, vegetation and debris were removed prior to placing the sample material into their respective containers. For duplicate samples, the duplicate sample container was filled immediately after the primary sample container was filled. Duplicate samples were designated by placing an "A" at the end of the sample identification number. For VOC analysis, the sample was collected prior to any homogenization. The remaining sample volume was thoroughly homogenized before placing in the appropriate sample containers.

The sequence for subsurface soil sample volume collection was: VOCs, SVOCs/ polychlorinated biphenyls (PCBs), metals, Cr(VI), and soil moisture from a portion of the core having similar moisture content.

The sample containers were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory. Any soil remaining in the core was placed in a drum for disposal characterization.

3.1.6 SURFACE WATER SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Surface water samples were collected from Mine Run near the drainage culvert under Brooke Pioneer Trail, from Mine Run East of Route 2 (background sample), and from the drainage swale west of the WWTP. A figure depicting the locations of the surface water samples is provided in Appendix A – Figure 10. Sample location tables are provided in Appendix K. Samples were collected in accordance with TechLaw SOP No. 08-02-03, Surface Water Sampling and Analysis Procedures and were conducted in sequence from downstream to upstream locations. Surface water samples were collected directly into the sample container (preferred) or collected using a dedicated dipper used to fill the sample containers as discussed below. At locations where both surface water and sediment samples were collected, the surface water sample was collected first.

Surface water samples were collected by submerging a sample container (or dipper, beaker, etc.) into the water below the surface until it is nearly full. Samples collected for VOC analysis entailed filling the vials to eliminate air bubbles within the sample (no headspace). The container (or dipper) opening was directed upstream (if applicable) and was gently lowered at an angle (with the mouth oriented toward the top) to a few inches below the surface of the water. For sample jars that were pre-preserved, care was taken to prevent the surface water from displacing the preservative. For duplicate samples, the duplicate sample container was filled immediately after the primary sample container was filled. Duplicate samples were designated by placing an "A" at the end of the sample identification number.

The sample containers were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory.

3.1.7 SEDIMENT SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Sediment samples were collected from the Ohio River near the NPDES outfall, from Mine Run near the drainage culvert under Brooke Pioneer Trail, from Mine Run East of Route 2 (background sample), and from the drainage swale west of the WWTP. A figure depicting the locations of the sediment samples is provided in Appendix A – Figure 11.

Sample location tables are provided in Appendix K. Samples were collected in accordance with TechLaw SOP No. 07-05-04, Soil/Sediment Sampling And Analysis Procedure – Soil Sampling With An Auger, and were collected in sequence from downstream to upstream locations. Sediment samples were collected using a coring device or auger to collect sample to a maximum depth of approximately 1 foot. The auger was slowly withdrawn and the sediments were placed in a clean dedicated mixing container. The sediments were thoroughly mixed and stones, vegetation, and debris removed. For VOCs, a portion of the sample was immediately placed into the VOC container from the auger prior to mixing. For duplicate samples, the duplicate sample container was filled immediately after the primary sample container was filled. Duplicate samples were designated by placing an "A" at the end of the sample identification number.

The sample containers were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory.

3.1.8 WASTE SAMPLE COLLECTION PROCEDURES AND ANALYTICAL METHODOLOGY

Waste samples were collected from three locations inside the facility and one area outside the facility. A figure depicting the locations of the waste samples is provided in Appendix A – Figure 12. Sample location tables are provided in Appendix K. Additionally, IDW was sampled to ensure proper transportation and disposal of the waste occurred.

From inside the facility a total of 3 waste samples were collected. One sample of an oily waste material was collected from a concrete sump within Building 8. One sample of an oily waste material was collected from a concrete pit south of the substation room within Building 7. One sample of a hardened black material was collected from the Rib Line located between Building 2 and 3. Additionally, one waste sample was collected from outside of the facility. A sample of recently dumped paint waste was collected from an area between the Paint Storage Building and Building 7.

The waste samples were collected using a dedicated sample scoop or using a dedicated glass jar to transfer the waste material into the appropriate glassware.

Two representative samples were collected from drums of IDW soil cuttings and one representative aqueous sample was collected from a drum of IDW water. The samples were analyzed for parameters to determine disposal requirements. The soil cuttings samples were collected using a combination of a stainless steel trowel, and a dedicated stainless steel post-hole digger. The VOC fraction was collected from a representative depth interval and placed directly into the appropriate sample containers with no homogenization. All other analysis fractions were thoroughly homogenized in an aluminum pan prior to filling the appropriate jars.

One representative sample will be collected from drummed IDW water and analyzed to determine the disposal profile. The IDW consists of water generated from well development, well purging, and drill tooling decontamination conducted during monitoring well construction. The sample will be placed directly into the appropriate sample containers.

All waste samples were placed into sample coolers and stored on ice at 4° Celsius, until the samples were shipped to the laboratory.

3.1.9 SAMPLE DESIGN

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
MW-1	Ground water	MW-1	Southwest corner of site. Near NPDES outfall.	Groundwater flow was suspected to be in a west/southwest direction. This location would capture any potential GW contaminants prior to it entering the Ohio River. Also would evaluate for reported Trichloroethene (TCE) contamination along railroad.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-2	Ground water	MW-2	West of Building 7-A (new paint line).	Groundwater flow was suspected to be in a west/southwest direction. This location would capture any potential GW contaminants as it leaves the Facility and prior to it entering the Ohio River. Also would evaluate for reported TCE contamination along railroad.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-3	Ground water	MW-3	West of WWTP.	Groundwater flow was suspected to be in a west/southwest direction. This location would capture any potential GW contaminants from the WWTP and prior to it entering the Ohio River. Also would evaluate for reported TCE contamination along railroad.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-4	Ground water	MW-4	Northeast of Facility	Groundwater flow was suspected to be in a west/southwest direction. This location would capture any potential GW contaminants originating from the coal refuse fill material. Also this location was expected to be hydrographically upgradient from the Site.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
MW-5	Ground water	MW-5	East of Facility. Near main gate.	Groundwater flow was suspected to be in a west/southwest direction. This location is adjacent to former USTs (4,000 gal gasoline and 15,000 gallon Fuel Oil). USTs removed in 1990 and 1991.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-6	Ground water	MW-6	SE corner of former Bldg 1 footprint. Near gate to South lot.	Groundwater flow was suspected to be in a west/southwest direction. This location would capture any potential GW contaminants originating from the facility. It was also near suspected USTs (Two 11,750 gallon Naptha). USTs removed in 1991.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-7	Ground water	MW-7	Southwest corner of hazardous waste storage building.	Groundwater flow was suspected to be in a west/southwest direction. This location is near a potential source area. This location would capture any potential GW contaminants coming from the Haz Waste Storage Building.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-8	Ground water	MW-8	West of Paint Storage Building	Groundwater flow was suspected to be in a west/southwest direction. This location is near a potential source area. This location would capture any potential GW contaminants coming from the Paint Storage Building.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
MW-9	Ground water	MW-9	East of Facility (Across Rt. 2)	Groundwater flow was suspected to be in a west/southwest direction. This location was a background sample.	Water Quality for Stabilization	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	10 foot screen across top of water column.
PW-1	Ground water	PW-1	Pump-house located north of facility	Facility process water (PW) from well (#A7).	N/A	Trace VOC, SVOC, PAH by SIM[2], Total Metals +Hg, Cr(VI) (Methods SW846 8260B, 8270D, 8270D SIM, 6020A, 7470A, EPA 218.7)	Sample was collected at the wellhead. Pump was running prior to and during sampling.

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SS-1, SBS-1	Surface Soil, Subsurface Soil	BH-1	Former Sewage Treatment Plant	This location is at the former sewage treatment plant located at the southern edge of property.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-2, SBS-2-1, SBS-2-2	Surface Soil, Subsurface Soil	BH-2	Southwest corner of Building 3	This location is adjacent to a suspected UST.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected. Screening of cores led to an additional sample being collected at this location.
SS-3, SBS-3	Surface Soil, Subsurface Soil	BH-3	Southwest corner of former gas and diesel ASTs. (South of WWTP)	This location is adjacent to the former 1,000 gallon gasoline and 2,000 gallon diesel AST.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-4, SBS-4-1 SBS-4-2	Surface Soil, Subsurface Soil l	BH-4	Northwest corner of covered concrete pad (East of WWTP)	This location is adjacent to the covered concrete pad. Concrete pad was reportedly used to store filter press solids from WWTP (chromium sludge accumulation area).	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, EPA 218.7)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to saturated zone where a sample was be collected. Screening of cores led to additional samples being collected at this location.
SS-5, SBS-5	Surface Soil, Subsurface Soil	BH-5	North of WWTP (near Mine Run)	This location is adjacent to the old access road crossing Mine Run. Drums are buried in this location. A release of PCB from drums may have also occurred near this location.	PID	VOC, SVOC, PCB, Total Metals + Hg (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-6, SS-6-A SBS-6	Surface Soil, Subsurface Soil	BH-6	Between Paint Storage Building and Building 7.	This location is adjacent to the area where paint waste was dumped. Additionally an empty tank labeled "Muriatic Acid" is located here.	PID	VOC, SVOC, Total Metals +Hg, Cr(VI) (Methods 524, 8270, 8270 SIM, 6020, 7470A, EPA 218.7,or equivalent)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected. Duplicate Sample (SS-6-A)
SS-7, SBS-7, SBS-7A	Surface Soil, Subsurface Soil	BH-7	Within Building 10. Oily sumps.	This location is adjacent to oil and oily waste material contained in concrete sumps. A borehole was placed adjacent (NW) to sump to determine if waste had migrated to the soil beneath the building. As there have been numerous transformers within the facility, PCBs were also analyzed.	PID	VOC, SVOC, PCB, Total Metals + Hg (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected. Duplicate Sample (SBS-7A).

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SBS-8	Subsurface Soil	BH-8	Within Building 7. Oil in Concrete Pit (South of Substation)	This location is adjacent to oil contained in concrete pit. A borehole was placed adjacent to pit to determine if waste had migrated to the soil beneath the building. As it was near electrical transformers, PCBs were also analyzed.	PID	VOC, SVOC, PCB, Total Metals + Hg (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B)	**Surface Soil:** Due to insufficient recovery a surface soil sample was not collected. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-9, SBS-9	Surface Soil, Subsurface Soil	BH-9	Within Machine Shop (Northern Section of Building 2)	This location is adjacent to oil stained concrete within the Machine Shop. A borehole was placed adjacent to oil stains to determine if waste had migrated to the soil beneath the building. As there have been numerous transformers within the facility, PCBs were also analyzed.	PID	VOC, SVOC, PCB, Total Metals + Hg (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-10, SBS-10	Surface Soil, Subsurface Soil	BH-10	South Lot (west)	This location is within the Southern Lot of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg, CN (Method 8260B/5035, 8270D, 6010C, 7471B, 9012)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to 8-10 feet. Screening of cores led to an additional analysis (Cyanide) being performed on this sample.
SS-11, SS-11-A SBS-11	Surface Soil, Subsurface Soil	BH-11	South Lot (east)	This location is within the Southern Lot of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. Duplicate Sample (SS-11-A) **Subsurface Soil:** Total depth to 8-10 feet.
SS-12, SBS-12 SBS-12-A	Surface Soil, Subsurface Soil	BH-12	Deck Storage Area. Between Building 10 and WWTP.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to 8-10 feet. Duplicate Sample (SBS-12-A)
SS-13, SBS-13	Surface Soil, Subsurface Soil	BH-13	Deck Storage Area (North). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to 8-10 feet.

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SS-14, SBS-14	Surface Soil, Subsurface Soil	BH-14	Deck Storage Area (North Central). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to 8-10 feet
SS-15, SBS-15	Surface Soil, Subsurface Soil	BH-15	Deck Storage Area (North East). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to 8-10 feet.
SS-16, SBS-16-1 SBS-16-2	Surface Soil, Subsurface Soil	BH-16	West of 4 sulfuric acid ASTs (Near WWTP).	This location is west of the 4 sulfuric acid ASTs. Was used to determine if contaminants from historical spills have migrating offsite.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to saturated zone where a sample was collected. Screening of cores led to an additional sample being collected at this location.
SS-17, SBS-17	Surface Soil, Subsurface Soil	BH-17	East of Facility (Across Rt. 2)	This location is a background sample	PID	VOC, SVOC, PCB, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B, EPA 218.7)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-18, SBS-18 SBS-18-A	Surface Soil, Subsurface Soil	BH-18	Rib Line (Between Building 2 and 3)	A borehole was placed adjacent (SW) to Rib Line to determine if waste had migrated to the soil beneath the building.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted. **Subsurface Soil:** Total depth to saturated zone where a sample was collected. Duplicate Sample (SBS-18-A).
SS-19, SBS-19	Surface Soil, Subsurface Soil	BH-19	Building 7A (New Paint Line)	This location has been planned for inside Building 7A. Location was moved to directly outside of building due to overhead obstructions. Location was chosen to determine if waste had migrated to the soil.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Total depth to saturated zone where a sample was collected.
SS-20, SS-20-A SBS-20	Surface Soil, Subsurface Soil	BH-20	Near electrical substation (Building 7)	This location is adjacent to concrete containment area for the electrical substation of Building 7. A borehole was placed outside of containment area to determine if there had been any spills of PCB oil.	PID	PCBs (Method 8082A)	**Surface Soil:** Depth 0-24 inches. Duplicate Sample (SS-20-A) **Subsurface Soil:** Depth to 4-5 feet.

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SS-21, SBS-21	Surface Soil, Subsurface Soil	BH-21	Near electrical substation (Building 2)	This location is adjacent to concrete containment area for the electrical substation of Building 2. A borehole will be placed outside of containment area to determine if there had been any spills of PCB oil.	PID	PCBs (Method 8082A)	**Surface Soil:** Depth 0-24 inches. **Subsurface Soil:** Depth to 4-5 feet.
W-1	Waste	W-1	Within Building 8. Oily sumps.	Oil and oily waste material contained in concrete sumps.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Minimized amount of water in sample.
W-2	Waste	W-2	Within Building 7. Oil in Concrete Pit (South of Substation)	Oil in concrete pit.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Minimized amount of water in sample.
W-3	Waste	W-3	Rib Line (Between Building 2 and 3)	Waste material at Rib Line Structure.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Hardened black material.
W-4	Waste	W-4	Between Paint Storage Building and Building 7.	Yellow paint waste dumped on ground.	N/A	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	
SS-22	Surface Soil	SS-22	Hazardous Waste Storage Building (Outside)	This location is near haz waste storage building. Was used to determine if contaminants have migrated from the building.	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	
SS-23	Surface Soil	SS-23	Hazardous Waste Storage Building (Outside)	This location is near haz waste storage building. Was used to determine if contaminants have migrated from the building.	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	
SS-24**	Surface Soil	N/A	Hazardous Waste Storage Building (Outside)	This location is near haz waste storage building. Was to be used to determine if contaminants have migrated from the building.	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	**Sample was not collected due to ground surface being covered in asphalt.
SS-25	Surface Soil	SS-25	Paint Storage Building (Outside)	This location is near paint storage building. Was used to determine if contaminants have migrated from the building.	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	
SS-26	Surface Soil	SS-26	Building 7A (Outside)	This location is west of Building 7A. It was near a depression where surface water entered a storm water drain. Was used to determine if surface contaminants are migrating into the storm water drain.	PID	VOC, SVOC, Total Metals + Hg, Cr(VI) (Method 8260B/5035, 8270D, 6010C, 7471B, 7196A/3060A)	

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SS-27	Surface Soil	SS-27	East of 4 sulfuric acid ASTs (Near WWTP).	This location is east of the 4 sulfuric acid ASTs. Staining indicated spills have historically occurred at this location. Was used to determine if contaminants from historical spills have migrating offsite.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted.
SS-28	Surface Soil	SS-28	Deck Storage Area (North Central). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted.
SS-29	Surface Soil	SS-29	Deck Storage Area (North Central). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted.
SS-30	Surface Soil	SS-30	Deck Storage Area (Northeast). North of Facility.	This location is within the Northwestern Lot (i.e. Deck Storage Area) of the Facility. Was used to determine if historical dumping or spills have occurred here.	PID	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Due to an absence of stains, odors, or elevated PID readings in the surface soils, VOCs were omitted.
SD-1	Sediment	SD-1	Near NPDES Outfall	This location is adjacent to current NPDES Outfall. Was used to determine the presence of any historic contamination resulting from any drains/sumps/manholes which had discharged from the outfall prior to the installation of the diffusion pipe.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Used hand auger to collect sample from approximately 1 foot bgs.
SW-1	Surface Water	SW-1	Drainage swale west of WWTP	This location is within a drainage swale west of the WWTP. Was used to determine the presence of any contamination migrating from the WWTP.	N/A	VOC, SVOC, PAH by SIM[2], Total Metals +Hg (Methods 524, 8270D, 8270D SIM, 6020A, 7470A, or equivalent)	Surface water sample was collected prior to sediment sample.
SD-2	Sediment	SD-2	Drainage swale west of WWTP	This location is within a drainage swale west of the WWTP. Was used to determine the presence of any contamination migrating from the WWTP.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Used hand auger to collect sample from approximately 1 foot bgs.

SAMPLE DESIGN TABLE							
Sample ID(s)	**Sample Matrix**	**Sample Location**	**Location Description**	**Reason for Sample Location**	**Field Measure-ment**	**Analytical Parameters/ Methods[1]**	**Notes**
SW-2	Surface Water	SW-2	Mine Run (Near Brooke Pioneer Trail)	This location is within Mine Run. Was used to determine the presence of any contamination migrating from the facility and/or the mine reclamation area.	N/A	VOC, SVOC, PAH by SIM[2], Total Metals +Hg (Methods 524, 8270D, 8270D SIM, 6020A, 7470A, or equivalent)	Surface water sample was collected prior to sediment sample.
SD-3	Sediment	SD-3	Mine Run (Near Brooke Pioneer Trail)	This location is within Mine Run. Was used to determine the presence of any contamination migrating from the facility and/or the mine reclamation area.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Used hand auger to collect sample from approximately 1 foot bgs.
SW-3	Surface Water	SW-3	Mine Run (Background - Across Rt. 2)	This location is within Mine Run across Rt. 2. Was used as a background sample.	N/A	VOC, SVOC, PAH by SIM[2], Total Metals +Hg (Methods 524, 8270D, 8270D SIM, 6020A, 7470A, or equivalent)	Surface water sample was collected prior to sediment sample.
SD-4	Sediment	SD-4	Mine Run (Background - Across Rt. 2)	This location is within Mine Run across Rt. 2. Was used as a background sample.	N/A	VOC, SVOC, Total Metals + Hg (Method 8260B/5035, 8270D, 6010C, 7471B)	Used hand auger to collect sample from approximately 1 foot bgs.
IDW-1	IDW (Solids)	N/A	N/A	Drums of IDW. Sampled for disposal purposes.		VOC/SVOC/PCBs/Metals + TCLP VOC/SVOC/Pest/Herb/Metals (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B, 1311/ 8260B/ 8270D/8081B/8151A/ 6010C/7470A)	
IDW-2	IDW (Solids)	N/A	N/A	Drums of IDW. Sampled for disposal purposes.		VOC/SVOC/PCBs/Metals + TCLP VOC/SVOC/Pest/Herb/Metals (Method 8260B/5035, 8270D, 8082A, 6010C, 7471B + 1311/ 8260B/ 8270D/8081B/8151A/ 6010C/7470A)	
IDW-3	IDW (Liquid)	N/A	N/A	Drums of IDW. Sampled for disposal purposes.		VOC/SVOC/PCBs/Metals + TCLP VOC/SVOC/Pest/Herb/Metals (Method 8260B, 8270D, 8082A, 6010C, 7471B + 1311/ 8260B/ 8270D/8081B/8151A/ 6010C/7470A)	

3.1.10 QUALITY CONTROL SAMPLES

Field quality control (QC) consisted, at a minimum, of one field duplicate for every twenty field samples of each matrix, or one per day, whichever was more frequent. Duplicate samples were sent "blind" to the laboratory and documented in the Field Activities Logbook or on the Regional copy of the Chain of Custody (COC). The field duplicate tests the reproducibility of sampling procedures and analytical procedures. One equipment rinsate sample was collected daily for non-dedicated sampling equipment used. A trip blank was included in all coolers shipped with samples for VOC analysis and was analyzed for VOA only. One field blank was collected each day that water samples were collected and was analyzed for the same parameters as the associated water samples.

Laboratory QC was in accordance with the method requirements. TechLaw designated one sample per matrix in each batch/sample delivery group (SDG) submitted to the laboratory to be used for a matrix spike/matrix spike duplicate (MS/MSD). A batch/SDG is defined as up to 20 samples of a specific matrix submitted for a specific case; or all the samples of a specific matrix (up to a maximum of 20) received by the laboratory for a specific case within a 7 calendar day period (3 calendar day period for 7 day turn-around-time (TAT), with the period beginning with the receipt of the last sample in the SDG.

A total of nine field duplicate samples, five equipment rinsate blanks, eight trip blanks, and three field blank samples were collected during the Phase II ESA sampling event. Additionally, nine samples were designated as MS/MSD samples.

3.1.11 DECONTAMINATION

TechLaw used dedicated, disposable sampling equipment where possible while collecting samples. Non-dedicated sampling equipment, such as the bladder pump and the sediment core sampler used to collect groundwater and sediment samples was decontaminated between samples using an Alconox®/water solution and scrub brush followed by a thorough rinse with distilled water. TechLaw also ensured that the subcontracted driller decontaminated the auger and/or the DPT coring tube and shoe assembly between sampling locations. The decontamination water was captured and drummed for disposal.

3.1.12 SURVEY OF MONITORING WELLS

On May 16, 2014, all nine monitoring wells were surveyed. TechLaw procured Pedersen and Pedersen Inc., to perform the survey. The horizontal location of each well was surveyed, along with the height of the following well features; top of concrete pad, top of metal outer casing (lid), and top of inner casing (TOIC) (See Appendix I). The horizontal locations were recorded in West Virginia State Plane North (Feet), North American Datum of 1983 (NAD 83) datum. The elevation was recorded in North American Vertical Datum of 1988 (NAVD 88). A table providing the well locations and elevations is below.

Table 2 - Monitoring Well Location and Elevation

MW Number	Northing	Easting	Elevation (TOIC)	Elevation (Concrete Pad)	Elevation Outer Casing (TOC)
MW-1	626023.622	1644288.437	656.823	654.121	657.073
MW-2	626717.019	1644519.383	665.114	662.563	665.454
MW-3	627242.979	1644734.853	669.507	666.696	669.777
MW-4	627650.111	1645753.468	668.399	665.799	668.659
MW-5	626797.582	1645377.661	675.511	672.958	675.721
MW-6	626148.133	1644893.732	670.086	667.605	670.416
MW-7	626333.071	1644613.830	666.497	664.280	666.717
MW-8	626969.680	1645010.891	669.525	667.068	669.735
MW-9	626624.727	1645676.524	702.473	699.598	702.693

1. Easting and Northing are State Plane West Virginia North (ft) NAD83
2. Elevations are in feet (NAVD 88)

TOIC = Top of inner casing; TOC = Top of Casing (Outer Metal Protective Casing – Well Stick-up)

Based in conjunction with the information collected during the monitoring well survey and the DTW measurements collected by TechLaw, a groundwater gradient map was generated. (See Figure 6). The flow of groundwater is generally in a west-northwest direction.

3.1.13 DISPOSAL OF INVESTIGATION-DERIVED WASTE (IDW)

One sample (IDW-01) was collected from a drum of IDW water and two samples (IDW-02 and IDW-03) were collected from drums of IDW soil cuttings. The drums selected to be sampled were chosen based on the greatest potential to contain elevated levels of contaminants and to be representative of the other IDW drums. The samples were

submitted to a laboratory to be analyzed for the following analyses: Toxicity Characteristic Leaching Procedure (TCLP) VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicide, TCLP Metals plus mercury, TCL VOC , TCL SVOC, TCL PCB, and TAL Metals plus mercury.

Veolia ES Technical Solutions L.L.C. (Veolia) was selected to perform the transportation and disposal of the IDW drums. On June 26, 2014, Veolia transported 30 drums (21 soil and 9 aqueous) to Veolia ES Technical Solutions L.L.C. located at 4301 Infirmary Road in West Carrollton, Ohio. The waste was transported as a non-hazardous waste under Manifest Tracking Number ZZ 00439573. The aqueous waste is scheduled to be solidified, and along with the solid waste, will be landfilled.

4 ANALYTICAL RESULTS

4.1 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Excluding the duplicate sample, a total of 10 groundwater samples were collected from the Site and were submitted to TestAmerica for laboratory analysis. The groundwater samples consisted of nine monitoring wells and one raw well process water. One of the monitoring well samples, MW-9, was collected as a background sample. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, PAHs by SW846 8270D SIM, Metals by SW846 6020A, Mercury by SW846 7470A, and hexavalent chromium by EPA 218.7. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee, with the exception of the hexavalent chromium samples which were shipped to the TestAmerica laboratory located in Pensacola, Florida.

Data summary tables providing results of the groundwater samples are provided in Appendix B (Tables B1 – B4-A). A figure depicting monitoring well samples which exceeded at least one parameter of the June 2014 West Virginia DeMinimis levels for groundwater can be found in Appendix A – Figure 7A. The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.1.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the groundwater samples except for the following compounds; 1,1,1-Trichloroethane (0.374 J) and 1,1-Dichloroethane (1.54) at MW-5, Acetone (5.91) at MW-8, and Trichloroethene (0.308 J) at PW-1. However, no VOCs exceeded the June 2014 West Virginia DeMinimis levels for groundwater. All VOC analytical results are provided in microgram per liter (ug/L).

4.1.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the groundwater samples except for the following compound; Bis(2-ethylhexyl) phthalate (6.12 J) at MW-3 and (7.36 J) at MW-6. Both results received for Bis(2-ethylhexyl) phthalate exceeded the June 2014 West Virginia DeMinimis level for groundwater. All SVOC analytical results are provided in ug/L.

4.1.3 POLYCYCLIC AROMATIC HYDROCARBONS

No PAHs were detected above the reporting limit in the groundwater samples except for the following compounds; 1-Methylnaphthalene (0.0308 J), 2-Methylnaphthalene (0.0453 J), Naphthalene (0.0657 J), and Phenanthrene (0.0691 J) at MW-4. However, no PAHs exceeded the June 2014 West Virginia DeMinimis levels for groundwater. All PAH analytical results are provided in ug/L.

4.1.4 METALS AND MERCURY

All groundwater samples had metals detected above the reporting limit. However, mercury was not detected above the reporting limit in any groundwater sample. Samples, MW-3, MW-3-A, MW-4, MW-6, MW-7, MW-8, MW-9, and PW-1 contained analytes at concentrations which exceeded the June 2014 West Virginia DeMinimis levels for groundwater. All metals analytical results are provided in milligram per liter (mg/L).

4.1.5 HEXAVALENT CHROMIUM

Hexavalent chromium was not detected above the reporting limit in the groundwater samples except for the following sample; MW-6 at 0.00105 J- mg/L. The concentration of hexavalent chromium within sample MW-6 exceeded the June 2014 West Virginia DeMinimis levels for groundwater.

4.2 SURFACE SOIL SAMPLE ANALYTICAL RESULTS

Excluding the three duplicate samples, a total of 28 surface soil samples were collected from the Site and were submitted to TestAmerica for laboratory analysis. One of the surface soil samples, SS-17, was collected as a background sample. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, PCBs by SW846 8082A, Metals by SW846 6010C, Mercury by SW846 7471B, and hexavalent chromium by SW846 7196A. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee, with the exception of the hexavalent chromium samples which were shipped to the TestAmerica laboratory located in Pensacola, Florida.

Data summary tables providing results of the surface soil samples are provided in Appendix B (Tables B5 – B8-A). A figure depicting surface soil samples which exceeded at least one parameter of the June 2014 West Virginia DeMinimis levels for industrial soil can be found in Appendix A – Figure 8A. The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.2.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the surface soil samples except for the following samples; SS-2, SS-3, SS-5, SS-6, SS-6-A, SS-7, SS-9, SS-13, SS-15, SS-17, SS-19, SS-22, SS-23, SS-25, and SS-26. However, no VOCs exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All VOC analytical results are provided in milligram per kilogram (mg/kg).

4.2.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the surface soil samples except for the following samples; SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, SS-6-A, SS-7, SS-10, SS-11, SS-11-A, SS-12, SS-13, SS-14, SS-15, SS-16, SS-18, SS-19, SS-22, SS-23, SS-25, SS-26, SS-28, SS-29, and SS-30. However, only 2 samples (SS-12 and SS-15) contained elevated levels of a SVOC (benzo[a]pyrene) which exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All SVOC analytical results are provided in mg/kg.

4.2.3 POLYCHLORINATED BIPHENYL

No PCBs were detected above the reporting limit in the surface soil samples except for the following samples; SS-17 with PCB–1242 at 0.0648 J mg/kg, and SS-5 with PCB–1260 at 0.034 J mg/kg. However, no PCBs exceeded the June 2014 West Virginia DeMinimis levels for industrial soil.

4.2.4 METALS AND MERCURY

All surface soil samples had metals detected above the reporting limit. The following surface soil samples had mercury detected above the reporting limit; SS-1, SS-2, SS-3, SS-4, SS-6, SS-6-A, SS-11, SS-11-A, SS-12, SS-13, SS-14, SS-15, SS-16, SS-19, SS-22, SS-23, SS-25, SS-26, and SS-27. Samples SS-3, SS-6, SS-6-A, SS-11-A, SS-12, SS-13, SS-14, and SS-23

contained analytes (arsenic, lead, and/or vanadium) at concentrations which exceeded the June 2014 West Virginia DeMinimis levels for industrial soil.

4.2.5 HEXAVALENT CHROMIUM

Hexavalent chromium was not detected above the reporting limit in any of the surface soil samples except for the following sample: SS-23 at 6.38 (J-), SS-6 at 7.65, and SS-6-A at 2.54 (J). However, no samples exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All hexavalent chromium analytical results are provided in mg/kg.

4.3 SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS

Excluding the three duplicate samples, a total of 24 subsurface soil samples were collected from the Site and were submitted to TestAmerica for laboratory analysis. One of the subsurface soil samples, SBS-17, was collected as a background sample. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, PCBs by SW846 8082A, Metals by SW846 6010C, Mercury by SW846 7471B, and hexavalent chromium by SW846 7196A. Additionally, one sample (SBS-10) was analyzed for total cyanide by SW846 9012B. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee, with the exception of the hexavalent chromium samples which were shipped to the TestAmerica laboratory located in Pensacola, Florida.

Approval to perform total cyanide on Sample SBS-10 was received from EPA on May 16, 2014. The entire subsurface core (SBS-10) contained a moist thick solid material with a Prussian blue color. The core was retrieved from a depth of 5 to 10 feet bgs.

Data summary tables providing results of the subsurface soil samples are provided in Appendix B (Tables B9 – B12-A). A figure depicting subsurface soil samples which exceeded at least one parameter of the June 2014 West Virginia DeMinimis levels for industrial soil can be found in Appendix A – Figure 9A. The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.3.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the subsurface soil samples except for the following samples; SBS-2-1, SBS-2-2, SBS-3, SBS-4-1, SBS-4-2, SBS-5, SBS-6, SBS-8, SBS-10, SBS-11, SBS-12, SBS-12-A, SBS-13, SBS-14, SBS-15, SBS-16-1, SBS-16-2, SBS-17, and SBS-18. However, no samples exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All VOC analytical results are provided in mg/kg.

4.3.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the subsurface soil samples except for the following samples; SBS-4-1, SBS-12, SBS-12-A, SBS-13, SBS-14, SBS-15, and SBS-16-1. However, no samples exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All SVOC analytical results are provided in mg/kg.

4.3.3 POLYCHLORINATED BIPHENYL

No polychlorinated biphenyls (PCBs) were detected above the reporting limit in the subsurface soil samples.

4.3.4 METALS AND MERCURY

All subsurface soil samples had metals detected above the reporting limit. The following subsurface soil samples had mercury detected above the reporting limit; SBS-1, SBS-4-1, SBS-7, SBS-7A, SBS-8, SBS-9, SBS-11, SBS-12, SBS-12-A, SBS-13, SBS-14, SBS-15, and SBS-16-1. Samples SBS-4-1, SBS-12, SBS-12-A, SBS-13, SBS-14, and SBS-16-1 contained analytes (arsenic and/or lead) at concentrations which exceeded the June 2014 West Virginia DeMinimis levels for industrial soil. All metals and mercury analytical results are provided in mg/kg.

4.3.5 HEXAVALENT CHROMIUM

Hexavalent chromium was not detected above the reporting limit in any of the subsurface soil samples.

4.3.6 CYANIDE

Sample SBS-10 was analyzed for total cyanide. The concentration of total cyanide received for Sample SBS-10 was 47.4 mg/kg. This sample contained cyanide at a concentration which exceeded the June 2014 West Virginia DeMinimis levels for industrial soil.

4.4 SURFACE WATER SAMPLE ANALYTICAL RESULTS

Excluding the duplicate sample, a total of three surface water samples were collected from the Site and submitted to TestAmerica for laboratory analysis. One of the surface water samples, SW-3, was collected as a background sample. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, PAHs by SW846 8270D SIM, Metals by SW846 6020A, and Mercury by SW846 7470A. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee.

Data summary tables providing results of the surface water samples are provided in Appendix B (Tables B13 – B16-A). A figure depicting surface water samples which exceeded at least one parameter of the July 2006 EPA Region 3 Biological Technical Assistance Group (BTAG) Freshwater Screening Benchmark levels can be found in Appendix A – Figure 10A. The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.4.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the surface water samples except for carbon disulfide at the following samples; SW-1 (0.277 J), SW-1A (0.27 J), and at SW-3 (0.286 J). However, no samples exceeded the July 2006 EPA Region 3 BTAG Freshwater Screening Benchmark levels for VOCs. All VOC analytical results are provided in ug/L

4.4.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the surface water samples.

4.4.3 POLYCYCLIC AROMATIC HYDROCARBONS

No PAHs were detected above the reporting limit in the surface water samples.

4.4.4 METALS AND MERCURY

All surface water samples had metals detected above the reporting limit. However, mercury was not detected above the reporting limit in any surface water sample. All surface water samples contained concentration of analytes which exceed the July 2006 EPA Region 3 BTAG Freshwater Screening Benchmark levels for metals. The background sample, SW-3, contained elevated concentrations of the following analytes; aluminum, arsenic, barium, copper, iron, lead, manganese, and selenium. The background sample contained the highest concentrations of these analytes except for manganese.

4.5 SEDIMENT SAMPLE ANALYTICAL RESULTS

Excluding the duplicate sample, a total of four sediment samples were collected from the Site and submitted to TestAmerica for laboratory analysis. One sediment sample, SD-4, was collected as a background sample. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, PCBs by SW846 8082A, Metals by SW846 6010C, and Mercury by SW846 7471B. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee.

Data summary tables providing results of the sediment samples are provided in Appendix B (Tables B17 – B20-A). A figure depicting sediment samples which exceeded at least one parameter of the July 2006 EPA Region 3 BTAG Freshwater Sediment Screening Benchmark levels can be found in Appendix A – Figure 11A. The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.5.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the sediment samples except for the following samples; SD-1A, SD-2, and SD-3. One sample, SD-1A, contained VOCs (carbon disulfide) at concentrations which exceeded the July 2006 EPA Region 3 BTAG Freshwater Sediment Screening Benchmark levels. Sample SD-1A was a duplicate sample of SD-1. The analytical results for sample SD-1 indicate non-detect for carbon disulfide. All VOC analytical results are provided in mg/kg.

4.5.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the sediment samples except for the following samples; SD-1, SD-1A, SD-3, and SD-4. The three sediment samples noted above also contained analytes at concentrations which exceeded the July 2006 EPA Region 3 BTAG Freshwater Sediment Screening Benchmark levels for SVOCs. SVOC analytical results are provided in mg/kg.

4.5.3 POLYCHLORINATED BIPHENYL

Only one sediment sample (SD-3) was analyzed for PCBs. The analytical results indicate that PCBs were not detected above the reporting limit in SD-3.

4.5.4 METALS AND MERCURY

All sediment samples had metals detected above the reporting limit. However, mercury was only detected above the reporting limit in one sediment sample (SD-4 at 0.0685 J-mg/kg). All four sediment samples contained analytes at concentrations which exceeded the July 2006 EPA Region 3 BTAG Freshwater Sediment Screening Benchmark levels for metals. The background sample, SD-4, contained elevated concentrations of the following analytes; arsenic, chromium, cobalt, copper, iron, manganese, and nickel. The background sample contained the highest concentrations of these analytes.

4.6 WASTE SAMPLE ANALYTICAL RESULTS

A total of four waste samples were collected from the Site and were submitted to TestAmerica for laboratory analysis. The samples were analyzed for the following: VOCs by SW846 8260B, SVOCs by SW846 8270D, Metals by SW846 6010C, Mercury by SW846 7471B, and hexavalent chromium by SW846 7196A. All samples were submitted to the TestAmerica laboratory located in Nashville, Tennessee, with the exception of the hexavalent chromium sample which was shipped to the TestAmerica laboratory located in Pensacola, Florida.

Data summary tables providing results of the waste samples are provided in Appendix B (Tables B21 – B23). The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

4.6.1 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the reporting limit in the waste samples except for the following samples; W-3, and W-4. VOC analytical results are provided in mg/kg.

4.6.2 SEMIVOLATILE ORGANIC COMPOUNDS

No SVOCs were detected above the reporting limit in the waste samples except Sample W-4 which contained naphthalene at a concentration of 3,480 mg/kg.

4.6.3 METALS AND MERCURY

All waste samples had metals detected above the reporting limit. However, mercury was only detected above the reporting limit in one waste sample (W-1-4 at 0.0704 J mg/kg).

4.6.4 HEXAVALENT CHROMIUM

Only one waste sample (W-4) was analyzed for hexavalent chromium. The analytical results indicate that hexavalent chromium was not detected above the reporting limit in Sample W-4.

5 FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field Quality Assurance/Quality Control (QA/QC) consisted of collecting field duplicates, rinsate blanks, field blanks, and trip blanks.

Data summary tables providing results of the field QA/QC blank samples are provided in Appendix B (Tables B24 – B25-A). The laboratory data packages are provided in Appendix G, while the validation data reports are provided in Appendix F.

6 DEVIATIONS FROM SQAP

All sampling for the Phase II ESA was performed according to the approved SQAP except for the following deviations:

- Surface soil sample SS-24 was unable to be collected due to the ground surface being covered with asphalt. There was no surface soil within the immediate area to collect.
- Total cyanide analysis was added to subsurface soil sample SBS-10. Upon inspection of the retrieved subsurface soil core from 5 - 10 feet bgs, the entire contents consisted of a moist thick solid material with a Prussian blue color. Due to this analysis being added after the data validation agreement had already been implemented, this analysis did not undergo data validation.
- PCB analysis (Method 8082) was added to sediment sample SD-3. There was a report which indicated there had been a PCB spill in the area near the location of SD-3.
- The sampling location identifier noted in Section 8.7.2 of the SQAP was modified. For samples not associated with a borehole (e.g. sediment, surface water, surface soil, and waste) , the Phase II ESA sampling team used the sample identification as the sampling location. The SQAP had noted that it would be assigned by the sampling team sequentially in the order the samples were collected.
- Duplicate samples were identified by adding an "A" to the end of the sample identification number. Additionally, when more than one sample was collected from a subsurface core, a "-1" or "-2" was added to the end of the sample identification number. This would indicate the first or second subsurface soil sample collected from this borehole location.
- The purpose of the IDW samples was to determine proper disposal of the IDW. TechLaw was informed by the transportation and disposal (T&D) company that they did not require data validation of the IDW samples. Consequently, the IDW samples did not undergo data validation.

7 CONCLUSION AND RECOMMENDATIONS

In May 2014, TechLaw conducted a Phase II ESA investigation at the Site. As part of the Phase II ESA investigation, TechLaw collected surface soil, subsurface soil, sediment, surface water, groundwater, and waste samples from the Facility.

Based on the results from the Phase II ESA sampling effort conducted by TechLaw, the site's groundwater appears to have been adversely impacted by bis(2-ethylhexyl) phthalate, hexavalent chromium, and multiple inorganic analytes. Bis(2-ethylhexyl) phthalate was found at monitoring well 3 (MW-3) at a concentration of 6.12 ug/L, and at MW-6 at 7.36 ug/L. Hexavalent chromium (CrVI) was found at MW-6 at a concentration of 0.00105 mg/L. The following inorganic analytes were found to be elevated within the groundwater at the Site; cadmium, cobalt, iron, lead, manganese, vanadium, and zinc. The groundwater did not contain any elevated levels of VOCs or PAHs.

The analytical results from the surface soil samples indicate that elevated concentrations of benzo(a)pyrene exist at SS-12 and SS-15, which are both in the staging area north of Building 10. Elevated levels of arsenic were present within the following samples (SS-3 at 36.3 mg/kg, SS-11-A at 30 mg/kg, SS-13 at 68.3 mg/kg, SS-14 at 85.1 mg/kg, and SS-23 at 28.6 mg/kg. Vanadium was found at elevated concentrations at SS-12 (504 mg/kg). Lead was found at elevated concentrations with the following samples (SS-6 at 359,000 mg/kg and at the duplicate sample (SS-6-A at 5,430 mg/kg). The site's surface soils did not contain any elevated levels of VOCs, PCBs, or CrVI.

The analytical results from the subsurface soil samples indicate that elevated concentrations of inorganic analytes (arsenic and lead) and cyanide exist at the Site. Elevated levels of arsenic were present within the following samples; SBS-4-1 at 39.3 mg/kg, SBS-12 at 35.8 mg/kg, SBS-12-A at 42.5 mg/kg, SBS-13 at 35.8 mg/kg, and SBS-14 at 35.6 mg/kg. Lead was found at elevated concentrations with the following samples; SBS-4-1 at 28,900 mg/kg, and SBS-16-1 at 2,070 mg/kg, One sample, SBS-10, contained elevated levels (47.4 mg/kg) of cyanide. The site's subsurface soils did not contain any elevated levels of VOCs, SVOCs, PCBs, or CrVI.

The following inorganic analytes were found to be elevated within the surface water at the Site; aluminum, arsenic, barium, calcium, copper, iron, lead, manganese, and selenium. However, in every instance except for calcium and manganese, the highest concentrations were in sample SW-3, which was a background sample collected upstream from the facility. The background sample was collected from Mine Run upstream of the site. This presence of the elevated inorganic analytes found within the background surface water sample, would suggest that they may not be attributable to the site. The surface water samples did not contain any elevated levels of VOCs, SVOCs, or PAHs.

The analytical results from the sediment samples indicate that an elevated concentration of carbon disulfide was present within sample SD-1-A (0.0107 mg/kg). Additionally, numerous SVOCs were found at elevated levels within samples SD-1 and SD-1-A. Both of these samples were collected from the left descending bank of the Ohio River where the outfall is located. Other SVOCs were also noted at elevated levels within the samples (SD-3 and SD-4) collected from Mine Run. All sediment samples (SD-1, SD-1-A, SD-2, SD-3, and SD-4) contained elevated concentrations of metals. Many of the elevated analytes were found to be the highest at the background location (SD-4). The presence of the elevated inorganic analytes found within the background sample, would suggest that they may not be attributable to the site. The sediment samples did not contain any elevated levels of PCBs.

It is recommended that the BDC of the Northern Panhandle coordinate with their LRS and WVDEP with the finding of this report to discuss how best to address the future reuse of the Facility.

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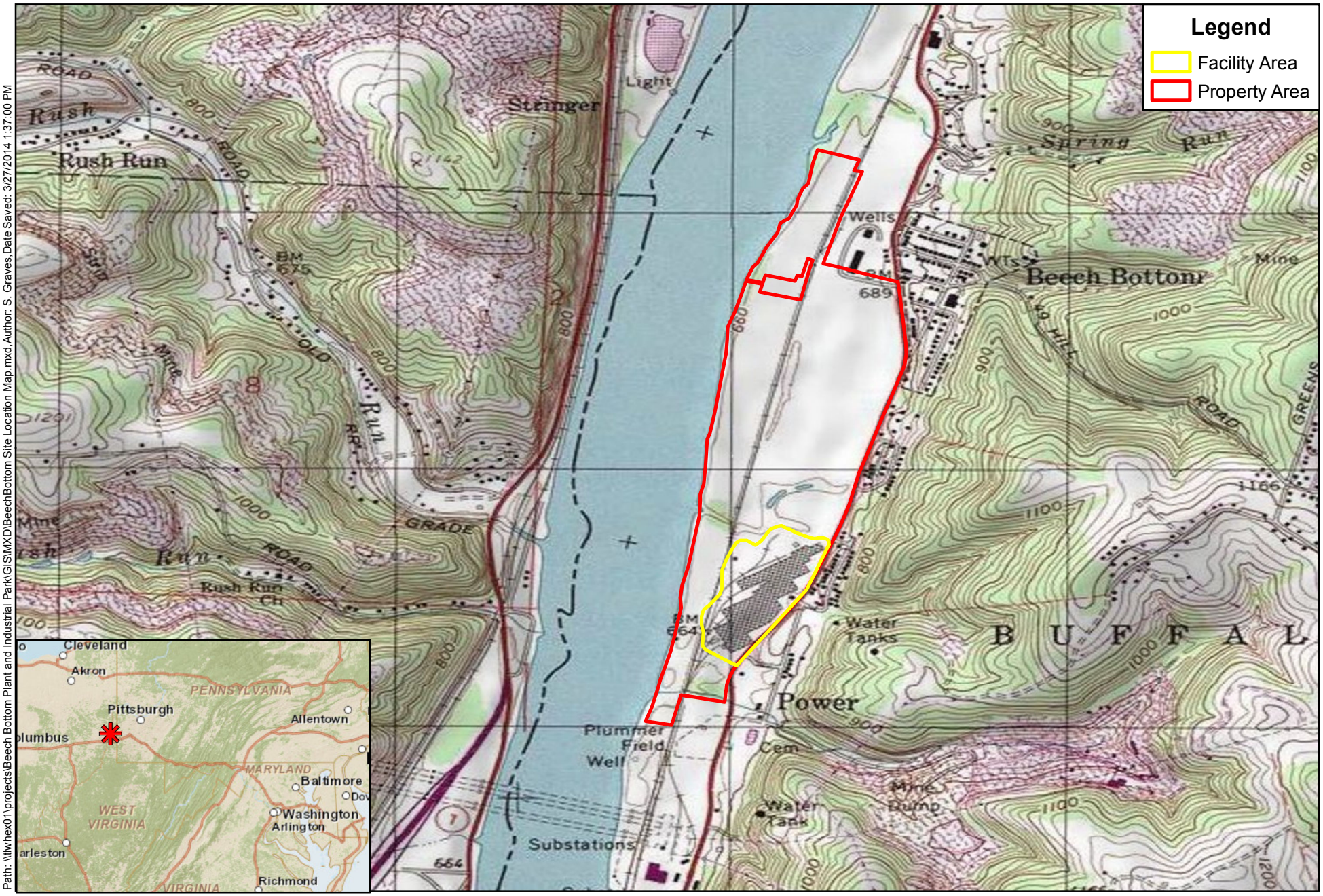
Appendix A

Figures



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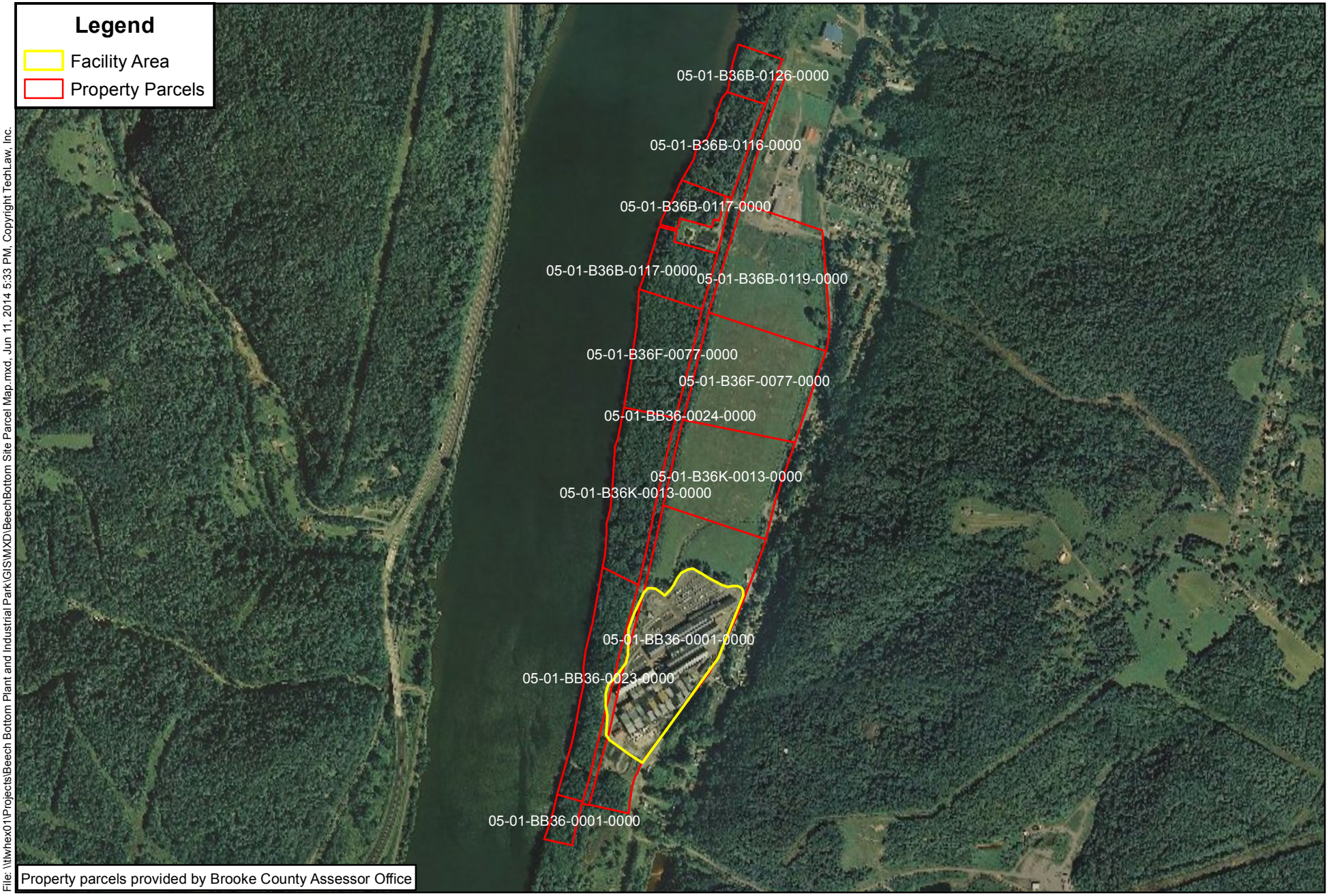
TDD: TL04-14-01-001

Figure 1 – Site Location Map
Beech Bottom Plant and Industrial Park Site
Wellsburg, Brooke County, West Virginia

0 650 1,300 2,600 Feet
ESRI Online - USA Topographic Map Layer



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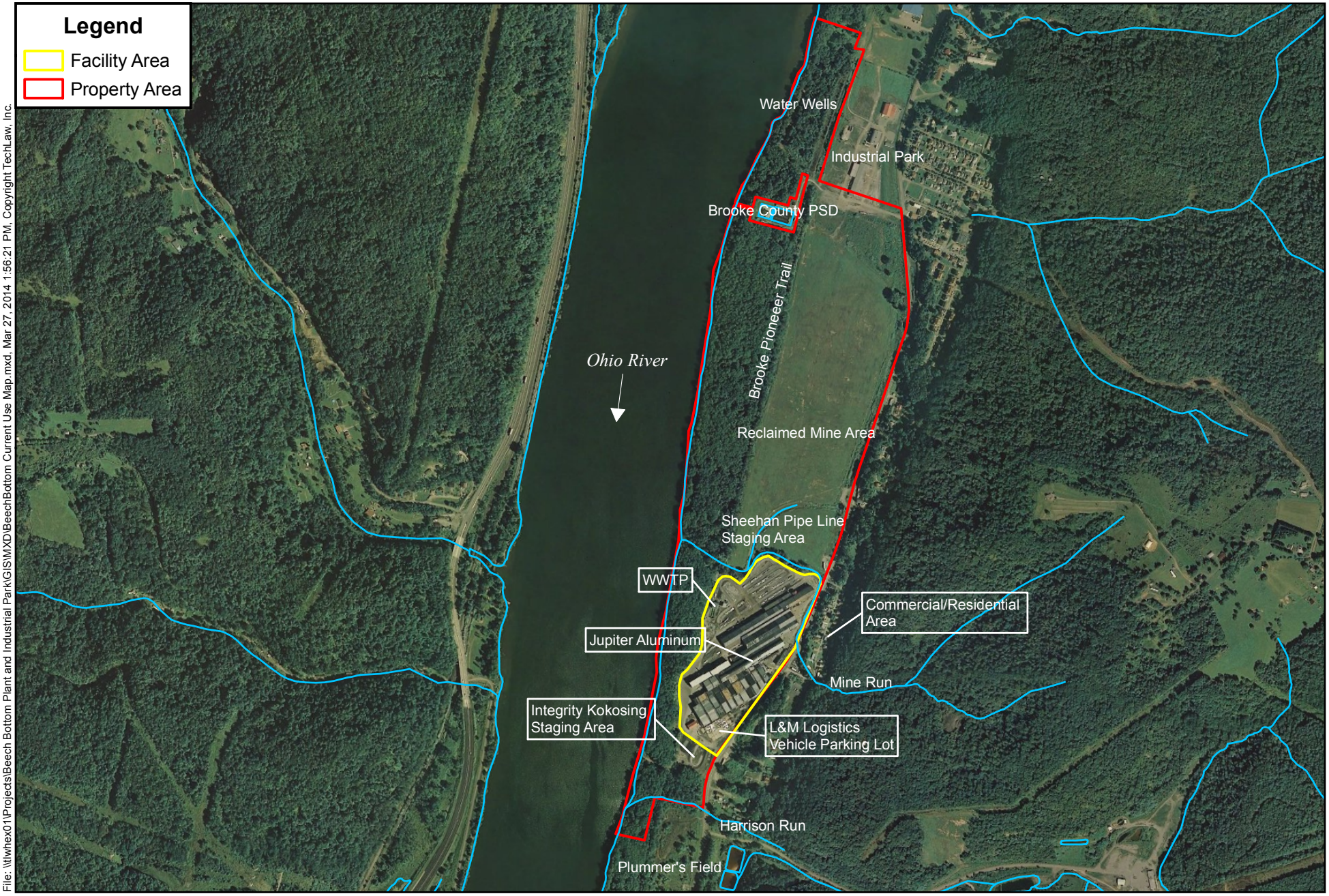
TDD: TL04-14-01-001

Figure 2 - Site Parcel Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 362.5 725 1,450 Feet
NAD 1983 - StatePlane West Virginia North (ft)



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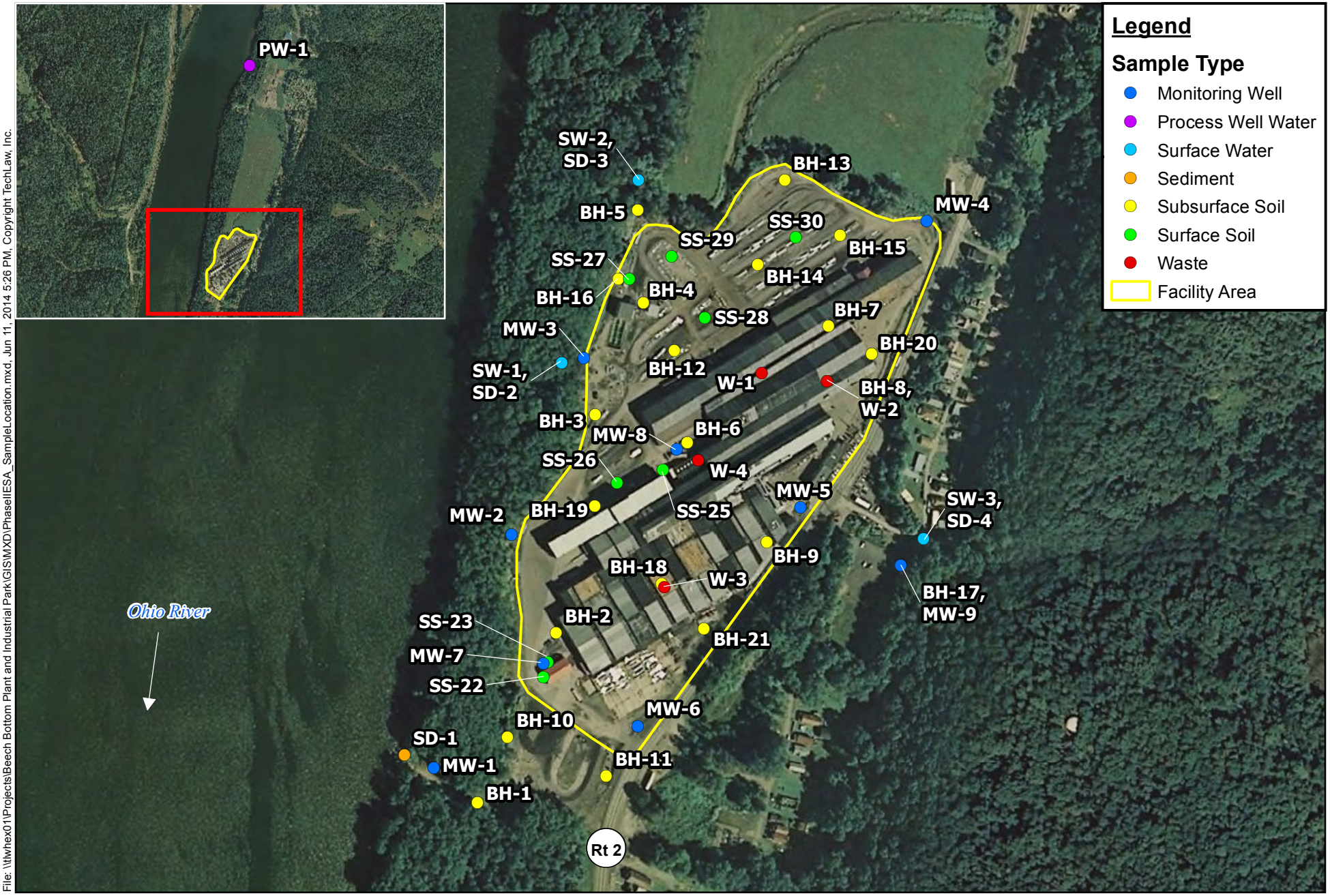
TDD: TL04-14-01-001

Figure 3 - Current Property Use Map
Beech Bottom Plant and Industrial Park
Wellsburg, Brooke County, West Virginia

N W E S
0 330 660 1,320 Feet
NAD 1983 - StatePlane West Virginia North (ft)



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TDD: TL04-14-01-001

Figure 4 - Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S

0 110 220 440 Feet

NAD 1983 - StatePlane West Virginia North (ft)

\\tlwhex01\Projects\Beech Bottom Plant and Industrial Park\GIS\PDF\Fig 2 Beech Bottom IDW Staging Location

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TDD: TL04-14-01-001

Figure 5: Beech Bottom IDW Drum Staging Location

Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N

Basemap from Google Maps

\\tlwhex01\Projects\Beech Bottom Plant and Industrial Park\GIS\Powerpoint\GroundwaterElevationMap

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

TechLaw
Quality & Integrity

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TDD: TL04-14-01-001

Figure 6: Groundwater Elevation Map
May 19, 2014
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N

Base Map from Google Maps
Imagery Date: 5/16/12
Contour and Vector overlays from Surfer®
Contour method: Kriging

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Figure 7 - Monitoring Well Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

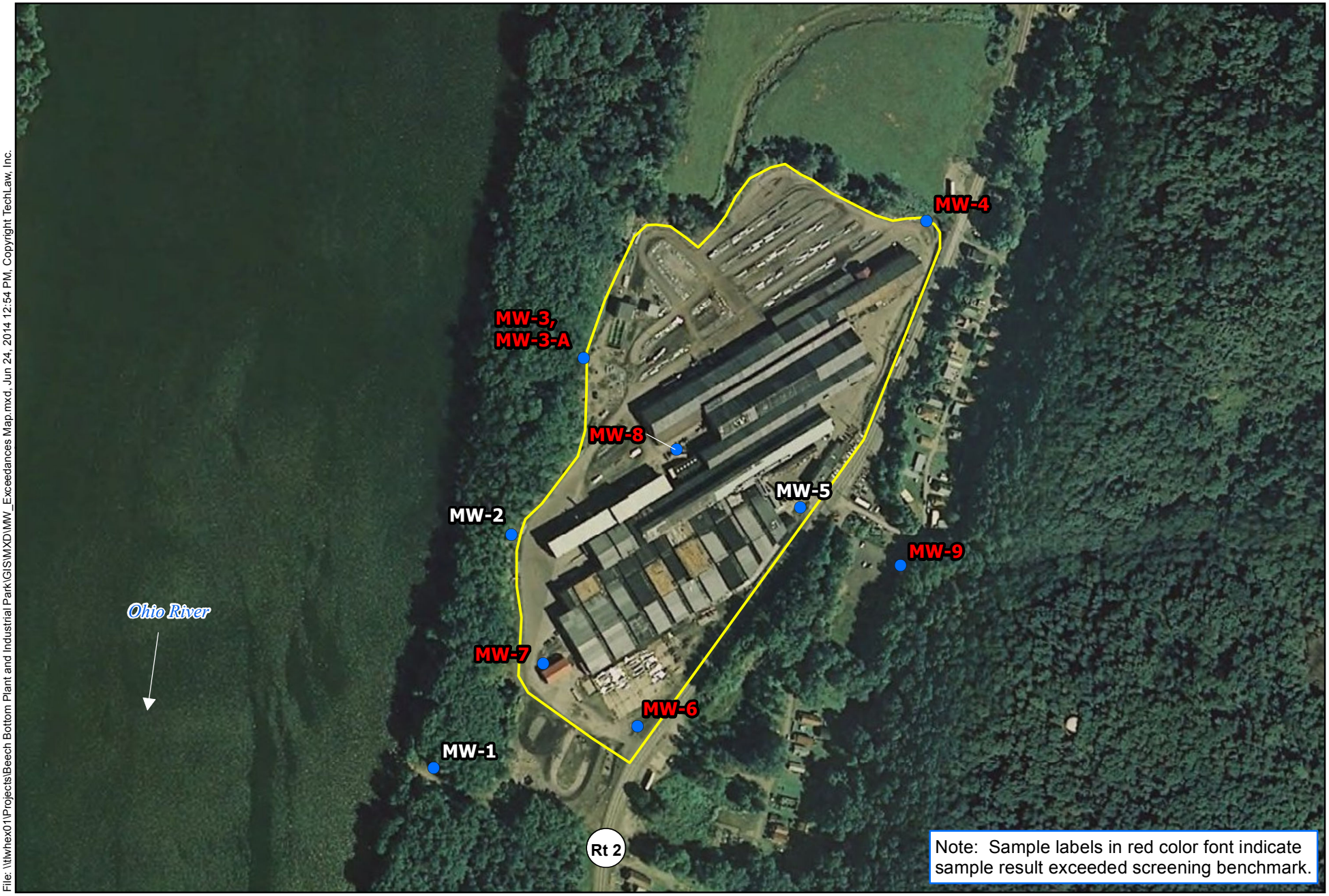

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Figure 7A - Monitoring Well Sample Exceedances Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

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Figure 8 - Surface Soil Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

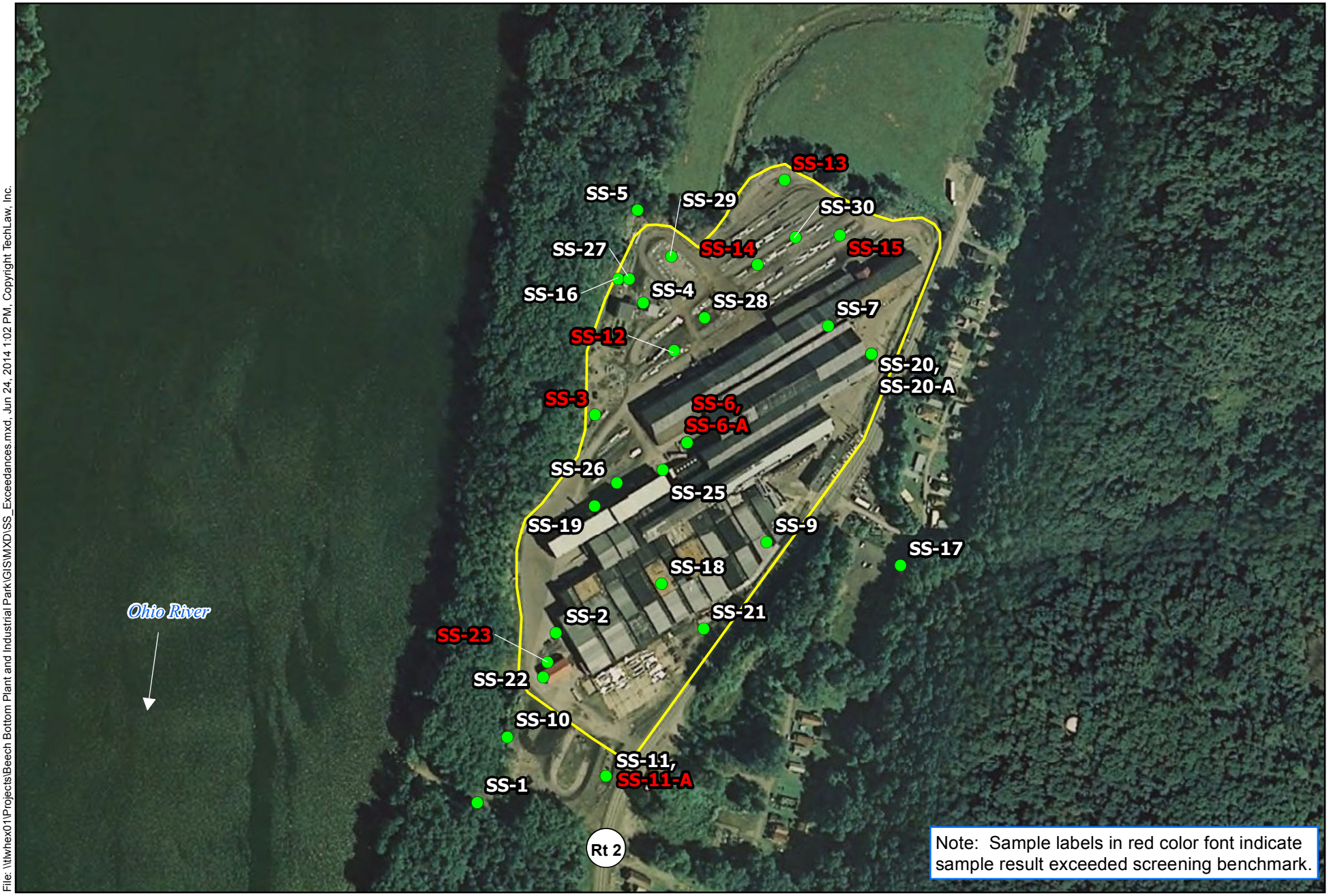

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Figure 8A - Surface Soil Sample Exceedances Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S

0 110 220 440 Feet

NAD 1983 - StatePlane West Virginia North (ft)

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Figure 9 - Subsurface Soil Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S

0 110 220 440 Feet

NAD 1983 - StatePlane West Virginia North (ft)

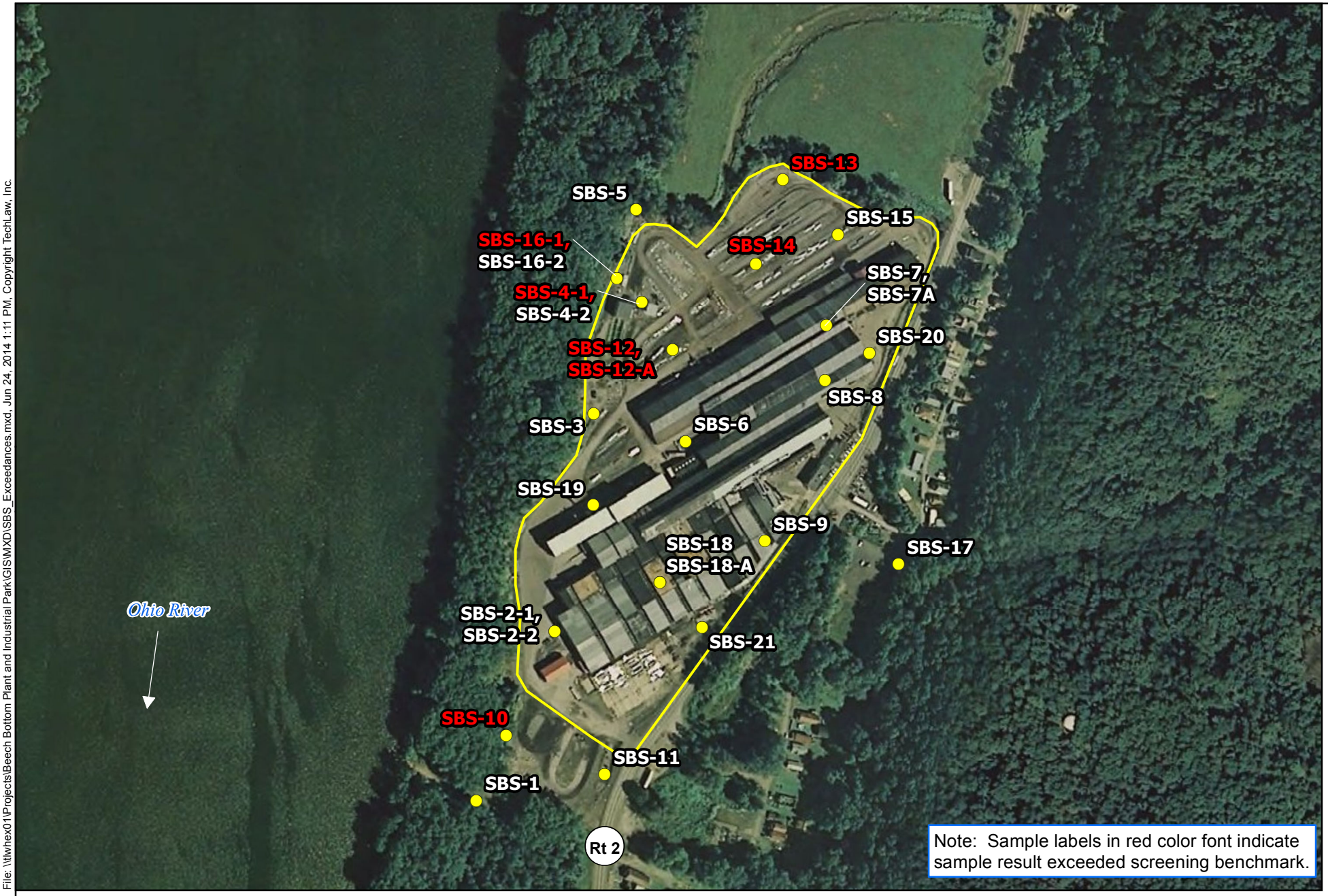

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Figure 9A - Subsurface Soil Sample Exceedances Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S

0 110 220 440 Feet

NAD 1983 - StatePlane West Virginia North (ft)

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Figure 10 - Surface Water Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

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Figure 10A - Surface Water Sample Exceedances Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

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Figure 11 - Sediment Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

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Figure 11A - Sediment Sample Exceedances Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S

0 110 220 440 Feet

NAD 1983 - StatePlane West Virginia North (ft)

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Figure 12 - Waste Sample Location Map
Beech Bottom Plant and Industrial Park
Beech Bottom, Brooke County, West Virginia

N W E S
0 110 220 440 Feet
NAD 1983 - StatePlane West Virginia North (ft)

Appendix B
Data Summary Tables

Table B1 - Groundwater Samples from EPA Monitoring Wells
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV De Minimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/23/2014		5/23/2014		5/23/2014		5/23/2014		5/24/2014		5/23/2014		5/23/2014		5/23/2014		5/24/2014		5/24/2014		5/24/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	200	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.374	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	0.067	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	55000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	2.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.54		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	7	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.05	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	600	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	75	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dioxane	123-91-1	0.67	200	U	200	U	200	U	200	U	200	U	200	U	200	U	200	U	200	U	200	U	200	U
2-Butanone (MEK)	78-93-3	4900	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U
2-Hexanone	591-78-6		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	1000	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	12000	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.91		5	U	5	U
Benzene	71-43-2	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	8.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	7.1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	760	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	74-97-5		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorodibromomethane	124-48-1	0.8	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	21000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	67-66-3	0.19	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	190	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	12000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorobromomethane	75-27-4	0.12	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	370	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	700	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	540	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9	5000	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methyl tert-butyl ether	1634-04-4	12	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	179601-23-1		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	95-47-6		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	1000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	156-60-5	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.308	J
Trichlorofluoromethane	75-69-4	1100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	1330-20-7	10000	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U

Table B1-A - Groundwater Samples from EPA Monitoring Wells
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	MW-5		MW-8		PW-1	
		Sampling Location:	MW-5		MW-8		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater	
		Units:	ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/21/2014		5/21/2014	
		Date Analyzed:	5/23/2014		5/24/2014		5/24/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	200	0.374	J				
1,1-Dichloroethane	75-34-3	2.4	1.54					
Acetone	67-64-1	12000			5.91			
Trichloroethene	79-01-6	5					0.308	J

Table B2 - Groundwater Samples from EPA Monitoring Wells
Semi-Volatile Organic Compounds

Yellow Highlight = Result Exceeds WV DeMinimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/27/2014		5/27/2014		5/27/2014		5/27/2014		5/24/2014		5/27/2014		5/28/2014		5/28/2014		5/28/2014		5/24/2014		5/28/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	4.7	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
2,3,4,6-Tetrachlorophenol	58-90-2	470	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2,4,5-Trichlorophenol	95-95-4	1600	25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	R	25	U	25.5	U	22.3	U
2,4,6-Trichlorophenol	88-06-2	6.1	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2,4-Dichlorophenol	120-83-2	47	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2,4-Dimethylphenol	105-67-9	310	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2,4-Dinitrophenol	51-28-5	31	25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	R	25	U	25.5	U	22.3	U
2,4-Dinitrotoluene	121-14-2	0.22	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
2,6-Dinitrotoluene	606-20-2	16	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
2-Chloronaphthalene	91-58-7	400	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
2-Chlorophenol	95-57-8	25	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2-Methylnaphthalene	91-57-6	63	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
2-Methylphenol	95-48-7	780	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
2-Nitroaniline	88-74-4	160	25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	U	25	U	25.5	U	22.3	U
2-Nitrophenol	88-75-5		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
3 & 4 Methylphenol	MEPH3MEPH		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
3,3-Dichlorobenzidine	91-94-1	0.15	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
3-Nitroaniline	99-09-2		25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	U	25	U	25.5	U	22.3	U
4,6-Dinitro-2-methylphenol	534-52-1		25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	R	25	U	25.5	U	22.3	U
4-Bromophenyl phenyl ether	101-55-3		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
4-Chloro-3-methylphenol	59-50-7		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
4-Chloroaniline	106-47-8	0.34	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
4-Chlorophenyl phenyl ether	7005-72-3		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
4-Nitroaniline	100-01-6		25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	U	25	U	25.5	U	22.3	U
4-Nitrophenol	100-02-7		25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	R	25	U	25.5	U	22.3	U
Acenaphthene	83-32-9	300	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Acenaphthylene	208-96-8	300	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Acetophenone	98-86-2	1600	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Anthracene	120-12-7	4700	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Atrazine	1912-24-9	3	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Benzaldehyde	100-52-7	500	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Benzo[a]anthracene	56-55-3	0.029	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Benzo[a]pyrene	50-32-8	0.2	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Benzo[b]fluoranthene	205-99-2	0.029	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Benzo[g,h,i]perylene	191-24-2	470	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Benzo[k]fluoranthene	207-08-9	0.29	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Biphenyl	92-52-4	0.83	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
bis (2-chloroisopropyl) ether	108-60-1	0.32	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Bis(2-chloroethoxy)methane	111-91-1		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Bis(2-chloroethyl)ether	111-44-4	0.012	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Bis(2-ethylhexyl) phthalate	117-81-7	6	10	U	10	U	**6.12**	J	8.77	U	9.26	U	10	U	**7.36**	J	9.62	U	10	U	10.2	U	8.93	U
Butyl benzyl phthalate	85-68-7	35	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Caprolactam	105-60-2	7800	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Carbazole	86-74-8		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Chrysene	218-01-9	2.9	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Dibenz(a,h)anthracene	53-70-3	0.0029	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Dibenzofuran	132-64-9	16	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Diethyl phthalate	84-66-2	13000	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Dimethyl phthalate	131-11-3		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Di-n-butyl phthalate	84-74-2	1600	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Di-n-octyl phthalate	117-84-0		10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Fluoranthene	206-44-0	630	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Fluorene	86-73-7	200	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U

Table B2 - Groundwater Samples from EPA Monitoring Wells
Semi-Volatile Organic Compounds

Yellow Highlight = Result Exceeds WV DeMinimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/27/2014		5/27/2014		5/27/2014		5/27/2014		5/24/2014		5/27/2014		5/28/2014		5/28/2014		5/28/2014		5/24/2014		5/28/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Hexachlorobenzene	118-74-1	1	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Hexachlorobutadiene	87-68-3	0.86	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Hexachlorocyclopentadiene	77-47-4	50	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Hexachloroethane	67-72-1	1.7	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Indeno[1,2,3-cd]pyrene	193-39-5	0.029	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Isophorone	78-59-1	71	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Naphthalene	91-20-3	0.14	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Nitrobenzene	98-95-3	0.12	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
N-Nitrosodi-n-propylamine	621-64-7	0.0096	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
n-Nitrosodiphenylamine(as diphenylamine	86-30-6	14	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	U	10	U	10.2	U	8.93	U
Pentachlorophenol	87-86-5	1	25	U	25	U	23.1	U	21.9	U	23.1	U	25	U	25	U	24	U	25	U	25.5	U	22.3	U
Phenanthrene	85-01-8	4700	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U
Phenol	108-95-2	4700	10	U	10	U	9.26	U	8.77	U	9.26	U	10	U	10	U	9.62	R	10	U	10.2	U	8.93	U
Pyrene	129-00-0	150	2	U	2	U	1.85	U	1.75	U	1.85	U	2	U	2	U	1.92	U	2	U	2.04	U	1.79	U

Table B2-A - Groundwater Samples from EPA Monitoring Wells
Semi-Volatile Organic Compounds
(Detections Only)

		Sample #:	MW-3		MW-6	
		Sampling Location:	MW-3		MW-6	
		Matrix:	Groundwater		Groundwater	
		Units:	ug/l		ug/l	
Yellow Highlight = Result Exceeds		Date Sampled:	5/20/2014		5/20/2014	
WV DeMinimis Standard		Date Analyzed:	5/27/2014		5/28/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q
Bis(2-ethylhexyl) phthalate	117-81-7	6	**6.12**	J	**7.36**	J

Table B3 - Groundwater Samples from EPA Monitoring Wells
PAH Compounds

Yellow Highlight = Result Exceeds WV DeMinimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/27/2014		5/27/2014		5/27/2014		5/27/2014		5/22/2014		5/27/2014		5/27/2014		5/28/2014		5/28/2014		5/22/2014		5/27/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1-Methylnaphthalene	90-12-0	2.3	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0308	J	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
2-Methylnaphthalene	91-57-6	63	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0453	J	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Acenaphthene	83-32-9	300	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Acenaphthylene	208-96-8	300	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Anthracene	120-12-7	4700	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Benzo[a]anthracene	56-55-3	0.029	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Benzo[a]pyrene	50-32-8	0.2	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Benzo[b]fluoranthene	205-99-2	0.029	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Benzo[g,h,i]perylene	191-24-2	470	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Benzo[k]fluoranthene	207-08-9	0.29	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Chrysene	218-01-9	2.9	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Dibenz(a,h)anthracene	53-70-3	0.0029	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Fluoranthene	206-44-0	630	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Fluorene	86-73-7	200	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Indeno[1,2,3-cd]pyrene	193-39-5	0.029	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	UJ	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Naphthalene	91-20-3	0.14	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0657	J	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Phenanthrene	85-01-8	4700	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0691	J	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U
Pyrene	129-00-0	150	0.0971	U	0.0962	U	0.1	U	0.0952	U	0.0962	U	0.098	U	0.098	U	0.0971	U	0.0971	U	0.1	U	0.0971	U

Table B3-A - Groundwater Samples from EPA Monitoring Wells
PAH Compounds
(Detections Only)

		Sample #:	MW-4	
		Sampling Location:	MW-4	
		Matrix:	Groundwater	
		Units:	ug/l	
Yellow Highlight = Result Exceeds WV DeMinimis Standard		Date Sampled:	5/19/2014	
		Date Analyzed:	5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 (µg/L)	Result	Q
1-Methylnaphthalene	90-12-0	2.3	0.0308	J
2-Methylnaphthalene	91-57-6	63	0.0453	J
Naphthalene	91-20-3	0.14	0.0657	J
Phenanthrene	85-01-8	4700	0.0691	J

Table B4 - Groundwater Samples from EPA Monitoring Wells
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 (mg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chromium, hexavalent	18540-29-9	0.000043	0.005	UJ	0.005	UJ	0.005	UJ	0.005	UJ	0.005	UJ	0.005	UJ	**0.00105**	J-	0.005	UJ	0.005	UJ	0.005	UJ	0.005	UJ
Aluminum	7429-90-5	16	1.34	J	0.436	J	0.856	J	0.928	J	0.96	J	0.706	J	4.49	J	0.821	J	5.08	J	0.069	J	0.02	UJ
Antimony	7440-36-0	0.0063	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Arsenic	7440-38-2	0.01	0.00113	J	0.000518	J	0.000986	J	0.000728	J	0.00137	J	0.00165	J	0.00439		0.000686	J	0.00241		0.00173	J	0.000955	J
Barium	7440-39-3	2	0.045		0.0813		0.0175		0.0176		0.0351		0.0976		0.0649		0.0499		0.0269		0.058		0.0389	
Beryllium	7440-41-7	0.004	0.002	U	0.002	U	0.00105	J	0.00113	J	0.002	U	0.002	U	0.002	U	0.002	U	0.00266		0.002	U	0.002	U
Cadmium	7440-43-9	0.005	0.001	U	0.001	U	**0.00555**		**0.00556**		0.000481	J	0.001	U	0.001	U	0.001	U	**0.00921**		0.001	U	0.001	U
Calcium	7440-70-2		91.6		54.3		112		112		85.4		259		163		82.1		238		199		212	
Chromium	7440-47-3		0.00199	U	0.000866	U	0.000732	U	0.000732	U	0.00108	U	0.00139	U	0.00779	B	0.000598	U	0.00283	U	0.002	U	0.002	U
Cobalt	7440-48-4	0.0047	0.00139	J	0.000796	J	**0.0319**		**0.031**		**0.0277**		0.00101	J	**0.00491**		**0.00609**		**0.0404**		0.000928	J	0.002	U
Copper	7440-50-8	0.63	0.00436		0.00154	J	0.0023		0.0025		0.00195	J	0.00252		0.0113		0.00353		0.0292		0.002	U	0.00466	
Iron	7439-89-6	11	2.75	B	0.862	B	0.328	B	0.493	B	1.65	B	1.36	B	8.11	B	0.0916	B	**79.4**	B	0.604	B	0.12	B
Lead	7439-92-1	0.015	0.00145	J	0.000626	J	0.000281	J	0.000365	J	0.00116	J	0.000863	J	0.00502		0.000264	J	**0.208**		0.002	U	0.000511	J
Magnesium	7439-95-4		19.1		8.33		22.8		21.6		18.8		54.9		22.9		7.74		18.4		40.1		35.6	
Manganese	7439-96-5	0.74	0.558		0.294		**4.26**		**4.31**		**27**		0.68		0.554		0.678		**4.14**		**2.04**		**1.83**	
Nickel	7440-02-0	0.31	0.0178	J	0.00785	J	0.137	J	0.132	J	0.0292	J	0.00274	UJ	0.0111	J	0.0241	J	0.128	J	0.000999	UJ	0.00213	UJ
Potassium	7440-0-9-7		1.31		1.09		2.41		2.36		9.03		4.65		4.61		9.26		6.5		2.55		3.22	
Selenium	7782-49-2	0.05	0.002	U	0.002	U	0.00427		0.00452		0.02	U	0.002	U	0.00189	J	0.002	U	0.02	U	0.002	U	0.002	U
Silver	7440-22-4	0.078	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Sodium	7440-23-5		41.9		9.55		27.6		26.5		57.7		82.4		9.07		65		42.1		14.6		37.3	
Thallium	7440-28-0	0.002	0.002	U	0.002	U	0.002	U	0.002	U	0.000684	J	0.000684	J	0.000336	J	0.000219	J	0.000474	J	0.002	U	0.002	U
Vanadium	7440-62-2	0.0011	0.00371	U	0.002	U	0.00154	U	0.000687	U	0.00129	U	0.00267	U	**0.00842**	B	0.00143	U	**0.00326**	B	0.0014	U	0.00133	U
Zinc	7440-66-6	4.7	0.0112	J	0.0102	J	0.103		0.0987		0.25	U	0.025	U	0.0277		0.0484		**49.2**		0.025	U	0.0157	J
Mercury	7439-97-6	0.002	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U

Table B4-A - Groundwater Samples from EPA Monitoring Wells
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV De Minimis Standard

		Sample #:	MW-1		MW-2		MW-3		MW-3-A		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Sampling Location:	MW-1		MW-2		MW-3		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		PW-1	
		Matrix:	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
		Units:	mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/19/2014		5/20/2014		5/20/2014		5/21/2014		5/21/2014		5/19/2014		5/21/2014	
		Date Analyzed:	5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 (mg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chromium, hexavalent	18540-29-9	0.000043													**0.00105**	J-								
Aluminum	7429-90-5	16	1.34	J	0.436	J	0.856	J	0.928	J	0.96	J	0.706	J	4.49	J	0.821	J	5.08	J	0.069	J		
Arsenic	7440-38-2	0.01	0.00113	J	0.000518	J	0.000986	J	0.000728	J	0.00137	J	0.00165	J	0.00439		0.000686	J	0.00241		0.00173	J	0.000955	J
Barium	7440-39-3	2	0.045		0.0813		0.0175		0.0176		0.0351		0.0976		0.0649		0.0499		0.0269		0.058		0.0389	
Beryllium	7440-41-7	0.004					0.00105	J	0.00113	J									0.00266					
Cadmium	7440-43-9	0.005					**0.00555**		**0.00556**		0.000481	J							**0.00921**					
Calcium	7440-70-2		91.6		54.3		112		112		85.4		259		163		82.1		238		199		212	
Chromium	7440-47-3														0.00779	B								
Cobalt	7440-48-4	0.0047	0.00139	J	0.000796	J	**0.0319**		**0.031**		**0.0277**		0.00101	J	**0.00491**		**0.00609**		**0.0404**		0.000928	J		
Copper	7440-50-8	0.63	0.00436		0.00154	J	0.0023		0.0025		0.00195	J	0.00252		0.0113		0.00353		0.0292				0.00466	
Iron	7439-89-6	11	2.75	B	0.862	B	0.328	B	0.493	B	1.65	B	1.36	B	8.11	B	0.0916	B	**79.4**	B	0.604	B	0.12	B
Lead	7439-92-1	0.015	0.00145	J	0.000626	J	0.000281	J	0.000365	J	0.00116	J	0.000863	J	0.00502		0.000264	J	**0.208**				0.000511	J
Magnesium	7439-95-4		19.1		8.33		22.8		21.6		18.8		54.9		22.9		7.74		18.4		40.1		35.6	
Manganese	7439-96-5	0.74	0.558		0.294		**4.26**		**4.31**		**27**		0.68		0.554		0.678		**4.14**		**2.04**		**1.83**	
Nickel	7440-02-0	0.31	0.0178	J	0.00785	J	0.137	J	0.132	J	0.0292	J			0.0111	J	0.0241	J	0.128	J				
Potassium	7440-0-9-7		1.31		1.09		2.41		2.36		9.03		4.65		4.61		9.26		6.5		2.55		3.22	
Selenium	7782-49-2	0.05					0.00427		0.00452						0.00189	J								
Sodium	7440-23-5		41.9		9.55		27.6		26.5		57.7		82.4		9.07		65		42.1		14.6		37.3	
Thallium	7440-28-0	0.002									0.000684	J	0.000684	J	0.000336	J	0.000219	J	0.000474	J				
Vanadium	7440-62-2	0.0011													**0.00842**	B			**0.00326**	B				
Zinc	7440-66-6	4.7	0.0112	J	0.0102	J	0.103		0.0987						0.0277		0.0484		**49.2**				0.0157	J

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-13		SS-15		SS-17		SS-19		SS-2		SS-22	
		Sampling Location:	BH-13		BH-15		BH-17		BH-19		BH-2		SS-22	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/14/2014		5/14/2014		5/5/2014	
		Date Analyzed:	5/17/2014		5/19/2014		5/8/2014		5/19/2014		5/19/2014		5/8/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
1,1,2-Trichloro-1,2,2-trichfluoroe	76-13-1	910	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,1,2-Trichloroethane	79-00-5	57	0.00724	U	0.00656	U	0.00543	U	0.00652	U	0.00549	U	0.00511	U
1,1-Dichloroethane	75-34-3	170	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,1-Dichloroethene	75-35-4	1100	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,2,3-Trichlorobenzene	87-61-6		0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
1,2,4-Trichlorobenzene	120-82-1	280	0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.00724	U	0.411	U	0.00543	U	0.266	U	0.275	U	0.00511	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,2-Dichlorobenzene	95-50-1	380	0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
1,2-Dichloroethane	107-06-2	23	0.0029	UJ	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,2-Dichloropropane	78-87-5	47	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
1,3-Dichlorobenzene	541-73-1		0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
1,4-Dichlorobenzene	106-46-7	140	0.0029	U	0.164	U	0.00217	U	0.106	U	0.11	U	0.00204	U
2-Butanone (MEK)	78-93-3	28000	0.0724	U	0.0656	U	0.0543	U	0.0652	U	0.0549	U	0.0511	U
2-Hexanone	591-78-6		0.0724	U	0.0656	U	0.0543	U	0.0652	U	0.0549	U	0.0511	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.0724	U	0.0656	U	0.0543	U	0.0652	U	0.0549	U	0.0511	U
Acetone	67-64-1	110000	0.0724	U	0.0656	U	0.0543	U	0.0652	U	0.0549	U	0.0511	U
Benzene	71-43-2	57	0.00107	J	0.00262	U	0.00217	U	0.00125	J	0.00505		0.000895	J
Bromochloromethane	74-97-5		0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Bromodichloromethane	75-27-4	14	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Bromoform	75-25-2	3100	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Bromomethane	74-83-9	33	0.0029	UJ	0.00262	UJ	0.00217	U	0.00261	UJ	0.0022	UJ	0.00204	U
Carbon disulfide	75-15-0	740	0.00533	J	0.00656	U	0.00543	U	0.00652	U	0.0188		0.00567	J
Carbon tetrachloride	56-23-5	32	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Chlorobenzene	108-90-7	760	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Chlorodibromomethane	124-48-1	290	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Chloroethane	75-00-3	2100	0.00724	U	0.00656	U	0.00543	U	0.00652	U	0.00549	U	0.00511	U
Chloroform	67-66-3	15	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-13		SS-15		SS-17		SS-19		SS-2		SS-22	
		Sampling Location:	BH-13		BH-15		BH-17		BH-19		BH-2		SS-22	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/14/2014		5/14/2014		5/5/2014	
		Date Analyzed:	5/17/2014		5/19/2014		5/8/2014		5/19/2014		5/19/2014		5/8/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	74-87-3	510	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
cis-1,2-Dichloroethene	156-59-2	82	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
cis-1,3-Dichloropropene	10061-01-5		0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Cyclohexane	110-82-7	120	0.0145	U	0.0131	U	0.0109	U	0.00541	J	0.011	U	0.0102	U
Dichlorodifluoromethane	75-71-8	800	0.0029	U	0.00262	U	0.00217	UJ	0.00261	U	0.0022	U	0.00204	UJ
Ethylbenzene	100-41-4	290	0.0029	U	0.00262	UJ	0.00217	U	0.00261	UJ	0.00115	J	0.00204	U
Isopropylbenzene	98-82-8	270	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Methyl acetate	79-20-9	29000	0.0145	UJ	0.0131	UJ	0.0109	UJ	0.013	UJ	0.011	UJ	0.0102	UJ
Methyl tert-butyl ether	1634-04-4	2300	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Methylcyclohexane	108-87-2		0.0098	J	0.0131	U	0.0109	U	0.00815	J	0.00442	J	0.0102	U
Methylene Chloride	75-09-2	3300	0.0145	U	0.00256	J	0.0109	U	0.00217	J	0.00169	J	0.0102	U
Styrene	100-42-5	870	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Tetrachloroethene	127-18-4	170	0.0029	U	0.00262	U	0.00217	U	0.00173	J	0.0022	U	0.00204	U
Toluene	108-88-3	820	0.00154	J	0.00262	UJ	0.00217	U	0.00261	UJ	0.0132	J	0.001	J
trans-1,2-Dichloroethene	156-60-5	700	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
trans-1,3-Dichloropropene	10061-02-6		0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Trichloroethene	79-01-6	21	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Trichlorofluoromethane	75-69-4	1200	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Vinyl chloride	75-01-4	0	0.0029	U	0.00262	U	0.00217	U	0.00261	U	0.0022	U	0.00204	U
Xylenes, Total	1330-20-7	260	0.00218	J	0.00102	J	0.00129	J	0.0015	J	0.0058		0.00121	J

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-23		SS-25		SS-26		SS-3		SS-5		SS-6	
		Sampling Location:	SS-23		SS-25		SS-26		BH-3		BH-5		BH-6	
		Matrix:	Surface Soil		Surface Soil		Surface Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/5/2014		5/5/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/8/2014		5/9/2014		5/9/2014		5/16/2014		5/10/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.161	U	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
1,1,2-Trichloro-1,2,2-trichfluoroe	76-13-1	910	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,1,2-Trichloroethane	79-00-5	57	0.00578	U	0.288	U	0.00562	U	0.00742	U	0.0063	U	0.00775	U
1,1-Dichloroethane	75-34-3	170	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,1-Dichloroethene	75-35-4	1100	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,2,3-Trichlorobenzene	87-61-6		0.161	UJ	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
1,2,4-Trichlorobenzene	120-82-1	280	0.161	UJ	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.402	U	0.288	U	0.32	U	0.00742	U	0.0063	U	0.449	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.00231	U	0.115	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,2-Dichlorobenzene	95-50-1	380	0.161	U	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
1,2-Dichloroethane	107-06-2	23	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	UJ	0.0031	U
1,2-Dichloropropane	78-87-5	47	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
1,3-Dichlorobenzene	541-73-1		0.161	U	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
1,4-Dichlorobenzene	106-46-7	140	0.161	U	0.115	U	0.128	U	0.00297	U	0.00252	U	0.18	U
2-Butanone (MEK)	78-93-3	28000	0.0578	U	0.0152	J	0.017	J	0.0742	U	0.0112	J	0.00946	J
2-Hexanone	591-78-6		0.0578	U	2.88	U	0.0562	U	0.0742	U	0.063	U	0.0775	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.0578	U	2.88	U	0.0562	U	0.0742	U	0.063	U	0.0775	U
Acetone	67-64-1	110000	0.0578	U	0.112	J	0.105	J	0.0742	U	0.0956		0.087	
Benzene	71-43-2	57	0.000994	J	0.00244	J	0.00191	J	0.00297	U	0.00252	U	3.65	J
Bromochloromethane	74-97-5		0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Bromodichloromethane	75-27-4	14	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	UJ	0.0031	U
Bromoform	75-25-2	3100	0.00231	U	0.115	UJ	0.00225	UJ	0.00297	U	0.00252	U	0.0031	U
Bromomethane	74-83-9	33	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	UJ
Carbon disulfide	75-15-0	740	0.00578	U	0.00689	J	0.0188	J	0.00742	U	0.0063	U	0.0121	
Carbon tetrachloride	56-23-5	32	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Chlorobenzene	108-90-7	760	0.00231	UJ	0.115	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Chlorodibromomethane	124-48-1	290	0.00231	U	0.115	U	0.00225	U	0.00297	U	0.00252	UJ	0.0031	U
Chloroethane	75-00-3	2100	0.00578	U	0.00541	U	0.00562	U	0.00742	U	0.0063	U	0.00775	U
Chloroform	67-66-3	15	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-23		SS-25		SS-26		SS-3		SS-5		SS-6	
		Sampling Location:	SS-23		SS-25		SS-26		BH-3		BH-5		BH-6	
		Matrix:	Surface Soil		Surface Soil		Surface Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/5/2014		5/5/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/8/2014		5/9/2014		5/9/2014		5/16/2014		5/10/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	74-87-3	510	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
cis-1,2-Dichloroethene	156-59-2	82	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
cis-1,3-Dichloropropene	10061-01-5		0.00231	U	0.115	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Cyclohexane	110-82-7	120	0.0116	U	0.00793	J	0.0112	U	0.0148	U	0.0126	U	0.0155	U
Dichlorodifluoromethane	75-71-8	800	0.00231	UJ	0.00217	U	0.00225	U	0.00297	U	0.00252	UJ	0.0031	U
Ethylbenzene	100-41-4	290	0.00231	U	0.168		0.00104	J	0.00297	U	0.00252	U	0.0031	UJ
Isopropylbenzene	98-82-8	270	0.00231	UJ	0.121		0.00225	U	0.00297	U	0.00252	U	0.0031	U
Methyl acetate	79-20-9	29000	0.0116	UJ	0.0108	UJ	0.0112	UJ	0.0148	UJ	0.0126	UJ	0.0155	UJ
Methyl tert-butyl ether	1634-04-4	2300	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Methylcyclohexane	108-87-2		0.0116	U	0.0108	J	0.0112	U	0.0148	U	0.0126	U	0.00832	J
Methylene Chloride	75-09-2	3300	0.0116	U	0.0108	U	0.0112	U	0.00161	J	0.0012	J	0.00212	J
Styrene	100-42-5	870	0.00231	UJ	0.115	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Tetrachloroethene	127-18-4	170	0.00231	U	0.115	U	0.00225	U	0.00297	U	0.00252	U	0.0282	J
Toluene	108-88-3	820	0.00692	J	0.602		0.00362	J	0.00297	U	0.00141	J	0.0312	J
trans-1,2-Dichloroethene	156-60-5	700	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
trans-1,3-Dichloropropene	10061-02-6		0.00231	U	0.115	U	0.00225	U	0.00297	U	0.00252	UJ	0.0031	U
Trichloroethene	79-01-6	21	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Trichlorofluoromethane	75-69-4	1200	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Vinyl chloride	75-01-4	0	0.00231	U	0.00217	U	0.00225	U	0.00297	U	0.00252	U	0.0031	U
Xylenes, Total	1330-20-7	260	0.00578	U	1.49		0.00168	J	0.00742	U	0.0063	U	0.0116	J

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-6-A		SS-7		SS-9	
		Sampling Location:	BH-6		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/16/2014		5/10/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00342	U	0.00201	U	0.00486	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.00342	U	0.00201	U	0.00486	U
1,1,2-Trichloro-1,2,2-trichfluoroe	76-13-1	910	0.00342	U	0.00201	U	0.00486	U
1,1,2-Trichloroethane	79-00-5	57	0.00855	U	0.00503	U	0.0122	U
1,1-Dichloroethane	75-34-3	170	0.00342	U	0.00201	U	0.00486	U
1,1-Dichloroethene	75-35-4	1100	0.00342	U	0.00201	U	0.00486	U
1,2,3-Trichlorobenzene	87-61-6		0.00342	U	0.00201	U	0.00486	U
1,2,4-Trichlorobenzene	120-82-1	280	0.00342	U	0.00201	U	0.00486	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.00855	U	0.00503	U	0.0122	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.00342	U	0.00201	U	0.00486	U
1,2-Dichlorobenzene	95-50-1	380	0.00342	U	0.00201	U	0.00486	U
1,2-Dichloroethane	107-06-2	23	0.00342	U	0.00201	UJ	0.00486	U
1,2-Dichloropropane	78-87-5	47	0.00342	U	0.00201	U	0.00486	U
1,3-Dichlorobenzene	541-73-1		0.00342	U	0.00201	U	0.00486	U
1,4-Dichlorobenzene	106-46-7	140	0.00342	U	0.00201	U	0.00486	U
2-Butanone (MEK)	78-93-3	28000	0.0855	U	0.00621	J	0.122	U
2-Hexanone	591-78-6		0.0855	U	0.0503	U	0.122	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.0855	U	0.0503	U	0.122	U
Acetone	67-64-1	110000	0.0855	U	0.0445	J	0.208	
Benzene	71-43-2	57	0.153	J	0.00201	U	0.00486	U
Bromochloromethane	74-97-5		0.00342	U	0.00201	U	0.00486	U
Bromodichloromethane	75-27-4	14	0.00342	U	0.00201	UJ	0.00486	U
Bromoform	75-25-2	3100	0.00342	U	0.00201	U	0.00486	U
Bromomethane	74-83-9	33	0.00342	U	0.00201	U	0.00486	U
Carbon disulfide	75-15-0	740	0.00855	U	0.00503	U	0.0122	U
Carbon tetrachloride	56-23-5	32	0.00342	U	0.00201	U	0.00486	U
Chlorobenzene	108-90-7	760	0.00342	U	0.00201	U	0.00486	U
Chlorodibromomethane	124-48-1	290	0.00342	U	0.00201	UJ	0.00486	U
Chloroethane	75-00-3	2100	0.00855	U	0.00503	U	0.0122	U
Chloroform	67-66-3	15	0.00342	U	0.00201	U	0.00486	U

Table B5 - Surface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-6-A		SS-7		SS-9	
		Sampling Location:	BH-6		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/16/2014		5/10/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q
Chloromethane	74-87-3	510	0.00342	U	0.00201	U	0.00486	U
cis-1,2-Dichloroethene	156-59-2	82	0.00342	U	0.00201	U	0.00486	U
cis-1,3-Dichloropropene	10061-01-5		0.00342	U	0.00201	U	0.00486	U
Cyclohexane	110-82-7	120	0.0171	U	0.0101	U	0.0243	U
Dichlorodifluoromethane	75-71-8	800	0.00342	U	0.00201	UJ	0.00486	U
Ethylbenzene	100-41-4	290	0.00342	U	0.00201	U	0.00486	U
Isopropylbenzene	98-82-8	270	0.00342	U	0.00201	U	0.00486	U
Methyl acetate	79-20-9	29000	0.0171	UJ	0.0101	UJ	0.0243	U
Methyl tert-butyl ether	1634-04-4	2300	0.00342	U	0.00201	U	0.00486	U
Methylcyclohexane	108-87-2		0.0171	U	0.00414	J	0.0243	U
Methylene Chloride	75-09-2	3300	0.0171	U	0.0101	U	0.0243	U
Styrene	100-42-5	870	0.00342	U	0.00201	U	0.00486	U
Tetrachloroethene	127-18-4	170	0.00724	J	0.00178	J	0.00486	U
Toluene	108-88-3	820	0.0143	J	0.00216	J	0.00486	U
trans-1,2-Dichloroethene	156-60-5	700	0.00342	U	0.00201	U	0.00486	U
trans-1,3-Dichloropropene	10061-02-6		0.00342	U	0.00201	UJ	0.00486	U
Trichloroethene	79-01-6	21	0.00342	U	0.00201	U	0.00486	U
Trichlorofluoromethane	75-69-4	1200	0.00342	U	0.00201	U	0.00486	U
Vinyl chloride	75-01-4	0	0.00342	U	0.00201	U	0.00486	U
Xylenes, Total	1330-20-7	260	0.00238	J	0.00225	J	0.0122	U

Table B5-A - Surface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-13		SS-15		SS-17		SS-19		SS-2		SS-22	
		Sampling Location:	BH-13		BH-15		BH-17		BH-19		BH-2		SS-22	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/14/2014		5/14/2014		5/5/2014	
		Date Analyzed:	5/17/2014		5/19/2014		5/8/2014		5/19/2014		5/19/2014		5/8/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000												
Acetone	67-64-1	110000												
Benzene	71-43-2	57	0.00107	J					0.00125	J	0.00505		0.000895	J
Carbon disulfide	75-15-0	740	0.00533	J							0.0188		0.00567	J
Cyclohexane	110-82-7	120							0.00541	J				
Ethylbenzene	100-41-4	290									0.00115	J		
Isopropylbenzene	98-82-8	270												
Methylcyclohexane	108-87-2		0.0098	J					0.00815	J	0.00442	J		
Methylene Chloride	75-09-2	3300			0.00256	J			0.00217	J	0.00169	J		
Tetrachloroethene	127-18-4	170							0.00173	J				
Toluene	108-88-3	820	0.00154	J							0.0132	J	0.001	J
Xylenes, Total	1330-20-7	260	0.00218	J	0.00102	J	0.00129	J	0.0015	J	0.0058		0.00121	J

Table B5-A - Surface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-23		SS-25		SS-26		SS-3		SS-5		SS-6	
		Sampling Location:	SS-23		SS-25		SS-26		BH-3		BH-5		BH-6	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/5/2014		5/5/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/8/2014		5/9/2014		5/9/2014		5/16/2014		5/10/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000			0.0152	J	0.017	J			0.0112	J	0.00946	J
Acetone	67-64-1	110000			0.112	J	0.105	J			0.0956		0.087	
Benzene	71-43-2	57	0.000994	J	0.00244	J	0.00191	J					3.65	J
Carbon disulfide	75-15-0	740			0.00689	J	0.0188	J					0.0121	
Cyclohexane	110-82-7	120			0.00793	J								
Ethylbenzene	100-41-4	290			0.168		0.00104	J						
Isopropylbenzene	98-82-8	270			0.121									
Methylcyclohexane	108-87-2				0.0108	J							0.00832	J
Methylene Chloride	75-09-2	3300							0.00161	J	0.0012	J	0.00212	J
Tetrachloroethene	127-18-4	170											0.0282	J
Toluene	108-88-3	820	0.00692	J	0.602		0.00362	J			0.00141	J	0.0312	J
Xylenes, Total	1330-20-7	260			1.49		0.00168	J					0.0116	J

Table B5-A - Surface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-6-A		SS-7		SS-9	
		Sampling Location:	BH-6		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/16/2014		5/10/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000			0.00621	J		
Acetone	67-64-1	110000			0.0445	J	0.208	
Benzene	71-43-2	57	0.153	J				
Carbon disulfide	75-15-0	740						
Cyclohexane	110-82-7	120						
Ethylbenzene	100-41-4	290						
Isopropylbenzene	98-82-8	270						
Methylcyclohexane	108-87-2				0.00414	J		
Methylene Chloride	75-09-2	3300						
Tetrachloroethene	127-18-4	170	0.00724	J	0.00178	J		
Toluene	108-88-3	820	0.0143	J	0.00216	J		
Xylenes, Total	1330-20-7	260	0.00238	J	0.00225	J		

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-1		SS-10		SS-11		SS-11-A		SS-12		SS-13		SS-14		SS-15	
		Sampling Location:	BH-1		BH-10		BH-11		BH-11		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/30/2014		5/30/2014		5/30/2014		5/21/2014		5/20/2014		5/21/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	1.81	U	2.36	UJ	1.93	U	1.88	U	1.81	U	2.01	U	1.92	U	1.95	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2,4,5-Trichlorophenol	95-95-4	88000	0.904	U	1.18	R	0.962	U	0.935	U	0.902	U	1	U	0.958	U	0.974	U
2,4,6-Trichlorophenol	88-06-2	880	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2,4-Dichlorophenol	120-83-2	2600	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2,4-Dimethylphenol	105-67-9	18000	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2,4-Dinitrophenol	51-28-5	1800	0.361	U	0.47	R	0.384	U	0.374	U	0.361	UJ	0.401	U	0.383	UJ	0.39	U
2,4-Dinitrotoluene	121-14-2	80	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2,6-Dinitrotoluene	606-20-2	890	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2-Chloronaphthalene	91-58-7	64000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	1.44		0.39	U
2-Chlorophenol	95-57-8	5100	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2-Methylnaphthalene	91-57-6	8200	0.116		0.535	J	1.86		2.59		0.45		4.42		7.56		1.26	
2-Methylphenol	95-48-7	44000	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
2-Nitroaniline	88-74-4	8500	0.904	U	1.18	UJ	0.962	U	0.935	U	0.902	U	1	U	0.958	U	0.974	U
2-Nitrophenol	88-75-5		0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
3 & 4 Methylphenol	MEPH3MEPH4		0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.543		0.39	U
3,3-Dichlorobenzidine	91-94-1	55	0.724	U	0.942	UJ	0.77	U	0.749	U	0.722	U	0.804	U	0.767	U	0.78	U
3-Nitroaniline	99-09-2		0.904	U	1.18	UJ	0.962	U	0.935	U	0.902	U	1	U	0.958	U	0.974	U
4,6-Dinitro-2-methylphenol	534-52-1		0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
4-Bromophenyl phenyl ether	101-55-3		0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
4-Chloro-3-methylphenol	59-50-7		0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
4-Chloroaniline	106-47-8	120	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
4-Chlorophenyl phenyl ether	7005-72-3		0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
4-Nitroaniline	100-01-6		0.904	U	1.18	UJ	0.962	U	0.935	U	0.902	U	1	U	0.958	U	0.974	U
4-Nitrophenol	100-02-7		0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Acenaphthene	83-32-9	66000	0.0727	U	0.0946	UJ	0.0774	U	0.0752	U	0.237		0.218		0.077	U	0.0784	U
Acenaphthylene	208-96-8	74000	0.0727	U	0.0946	UJ	0.0844		0.123		0.195		0.553		0.077	U	2.49	
Acetophenone	98-86-2	2500	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.512		0.383	U	0.39	U
Anthracene	120-12-7	610000	0.0727	U	0.0946	UJ	0.0774	U	0.102		0.855		0.535		0.386		2.5	
Atrazine	1912-24-9	110	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	UJ	0.401	U	0.383	UJ	0.39	U
Benzaldehyde	100-52-7	1200	1.81	U	2.36	UJ	1.93	U	1.88	U	1.81	UJ	2.01	U	1.92	UJ	1.95	U
Benzo[a]anthracene	56-55-3	29	0.0727	U	0.0946	UJ	0.141		0.211		2.71		1.68		0.462		8.28	
Benzo[a]pyrene	50-32-8	2.9	0.0727	U	0.0946	UJ	0.0916	J	0.193	J	**3.23**		1.38		0.271		**7**	
Benzo[b]fluoranthene	205-99-2	29	0.0815		0.121	J	0.179	J	0.317	J	4.38		2.29		0.69		12	
Benzo[g,h,i]perylene	191-24-2	23000	0.0727	U	0.0946	UJ	0.0792		0.137		2.41		0.793		0.154		3.97	
Benzo[k]fluoranthene	207-08-9	290	0.0727	U	0.0946	UJ	0.0808		0.128		1.71		1.03		0.147		4.53	
Biphenyl	92-52-4	220	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.968		0.39	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Bis(2-chloroethoxy)methane	111-91-1		0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Bis(2-chloroethyl)ether	111-44-4	13	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.361	U	0.47	UJ	0.384	U	0.374	U	0.403		0.401	U	0.383	U	0.39	U
Butyl benzyl phthalate	85-68-7	13000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Caprolactam	105-60-2	440000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Carbazole	86-74-8		0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	1.78	
Chrysene	218-01-9	2900	0.0727	U	0.0946	UJ	0.19		0.288		2.69		1.75		0.635		7.79	
Dibenz(a,h)anthracene	53-70-3	2.9	0.0727	U	0.0946	UJ	0.0774	U	0.0752	U	0.678		0.264		0.077	U	1.4	
Dibenzofuran	132-64-9	2000	0.361	U	0.47	UJ	0.408		0.557		0.361	U	1.29		1.95		0.974	
Diethyl phthalate	84-66-2	700000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Dimethyl phthalate	131-11-3		1.81	U	2.36	UJ	1.93	U	1.88	U	1.81	U	2.01	U	1.92	U	1.95	U

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-1		SS-10		SS-11		SS-11-A		SS-12		SS-13		SS-14		SS-15	
		Sampling Location:	BH-1		BH-10		BH-11		BH-11		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/30/2014		5/30/2014		5/30/2014		5/21/2014		5/20/2014		5/21/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Di-n-octyl phthalate	117-84-0		0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Fluoranthene	206-44-0	30000	0.0727	U	0.0946	UJ	0.167		0.272		3.37		3.23		1.08		18.5	
Fluorene	86-73-7	57000	0.0727	U	0.0946	UJ	0.0774	U	0.0752	U	0.172		0.233		0.077	U	1.49	
Hexachlorobenzene	118-74-1	15	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Hexachlorobutadiene	87-68-3	320	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Hexachlorocyclopentadiene	77-47-4	5300	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Hexachloroethane	67-72-1	620	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.0727	U	0.0946	UJ	0.0774	U	0.114		2.17		0.857		0.177		4.08	
Isophorone	78-59-1	26000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Naphthalene	91-20-3	180	0.0727	U	0.44	J	1.41		1.9		1.01		3.19		7.06		1.44	
Nitrobenzene	98-95-3	240	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.361	U	0.47	UJ	0.384	U	0.374	U	0.361	U	0.401	U	0.383	U	0.39	U
Pentachlorophenol	87-86-5	33	0.904	U	1.18	R	0.962	U	0.935	U	0.902	U	1	U	0.958	U	0.974	U
Phenanthrene	85-01-8	610000	0.0968		0.212	J	0.647		0.93		1.6		2.4		3.32		10.8	
Phenol	108-95-2	260000	0.361	U	0.47	R	0.384	U	0.374	U	0.361	U	0.401	U	0.769		0.39	U
Pyrene	129-00-0	58000	0.0727	U	0.0946	UJ	0.193	J	0.324	J	3.65		3.27		1.08		13.3	

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-16		SS-17		SS-18		SS-19		SS-2		SS-22		SS-23		SS-25	
		Sampling Location:	BH-16		BH-17		BH-18		BH-19		BH-2		SS-22		SS-23		SS-25	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/5/2014		5/15/2014		5/14/2014		5/14/2014		5/5/2014		5/7/2014		5/5/2014	
		Date Analyzed:	5/21/2014		5/9/2014		5/30/2014		5/20/2014		5/20/2014		5/9/2014		5/10/2014		5/9/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	1.83	U	2	U	1.71	U	1.77	U	1.76	U	1.96	U	2.19	R	1.89	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,4,5-Trichlorophenol	95-95-4	88000	0.912	U	0.999	U	0.855	U	0.883	U	0.879	U	0.977	U	1.09	U	0.943	U
2,4,6-Trichlorophenol	88-06-2	880	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,4-Dichlorophenol	120-83-2	2600	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,4-Dimethylphenol	105-67-9	18000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,4-Dinitrophenol	51-28-5	1800	0.365	UJ	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,4-Dinitrotoluene	121-14-2	80	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2,6-Dinitrotoluene	606-20-2	890	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2-Chloronaphthalene	91-58-7	64000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2-Chlorophenol	95-57-8	5100	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2-Methylnaphthalene	91-57-6	8200	0.28		0.0803	U	0.587		0.294		0.711		0.189		0.308		1.1	
2-Methylphenol	95-48-7	44000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
2-Nitroaniline	88-74-4	8500	0.912	U	0.999	U	0.855	U	0.883	U	0.879	U	0.977	U	1.09	U	0.943	U
2-Nitrophenol	88-75-5		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
3 & 4 Methylphenol	MEPH3MEPH4		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
3,3-Dichlorobenzidine	91-94-1	55	0.731	U	0.8	U	0.684	U	0.707	U	0.704	U	0.782	U	0.874	R	0.755	U
3-Nitroaniline	99-09-2		0.912	U	0.999	U	0.855	U	0.883	U	0.879	U	0.977	U	1.09	R	0.943	U
4,6-Dinitro-2-methylphenol	534-52-1		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
4-Bromophenyl phenyl ether	101-55-3		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
4-Chloro-3-methylphenol	59-50-7		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
4-Chloroaniline	106-47-8	120	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	UJ	0.377	U
4-Chlorophenyl phenyl ether	7005-72-3		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
4-Nitroaniline	100-01-6		0.912	U	0.999	U	0.855	U	0.883	U	0.879	U	0.977	U	1.09	R	0.943	U
4-Nitrophenol	100-02-7		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Acenaphthene	83-32-9	66000	0.0734	U	0.0803	U	0.0687	U	0.071	U	0.0707	U	0.0786	U	0.0878	U	0.0759	U
Acenaphthylene	208-96-8	74000	0.0734	U	0.0803	U	0.0687	U	0.129		0.119		0.0945		0.482		0.269	
Acetophenone	98-86-2	2500	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Anthracene	120-12-7	610000	0.0735		0.0803	U	0.0687	U	0.107		0.112		0.0786	U	0.296		0.261	
Atrazine	1912-24-9	110	0.365	UJ	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Benzaldehyde	100-52-7	1200	1.83	UJ	2	U	1.71	U	1.77	U	1.76	U	1.96	U	2.19	U	1.89	U
Benzo[a]anthracene	56-55-3	29	0.298		0.0803	U	0.0687	U	0.202		0.467		0.102		0.73		0.576	
Benzo[a]pyrene	50-32-8	2.9	0.218		0.0803	U	0.0687	U	0.198		1.1		0.144		1.03		0.663	
Benzo[b]fluoranthene	205-99-2	29	0.421		0.0803	U	0.0687	U	0.378		1.7		0.316		1.88		1.42	
Benzo[g,h,i]perylene	191-24-2	23000	0.103		0.0803	U	0.0687	U	0.206		0.912		0.234		1.15	J	0.568	
Benzo[k]fluoranthene	207-08-9	290	0.142		0.0803	U	0.0687	U	0.15		0.449		0.112		0.656	J	0.537	
Biphenyl	92-52-4	220	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Bis(2-chloroethoxy)methane	111-91-1		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Bis(2-chloroethyl)ether	111-44-4	13	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.377		0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Butyl benzyl phthalate	85-68-7	13000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Caprolactam	105-60-2	440000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Carbazole	86-74-8		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Chrysene	218-01-9	2900	0.251		0.0803	U	0.0722		0.221		0.558		0.162		0.953		0.781	
Dibenz(a,h)anthracene	53-70-3	2.9	0.0734	U	0.0803	U	0.0687	U	0.071	U	0.221		0.0786	U	0.299		0.164	
Dibenzofuran	132-64-9	2000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Diethyl phthalate	84-66-2	700000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Dimethyl phthalate	131-11-3		1.83	U	2	U	1.71	U	1.77	U	1.76	U	1.96	U	2.19	R	1.89	U

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-16		SS-17		SS-18		SS-19		SS-2		SS-22		SS-23		SS-25	
		Sampling Location:	BH-16		BH-17		BH-18		BH-19		BH-2		SS-22		SS-23		SS-25	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/5/2014		5/15/2014		5/14/2014		5/14/2014		5/5/2014		5/7/2014		5/5/2014	
		Date Analyzed:	5/21/2014		5/9/2014		5/30/2014		5/20/2014		5/20/2014		5/9/2014		5/10/2014		5/9/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Di-n-octyl phthalate	117-84-0		0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Fluoranthene	206-44-0	30000	0.414		0.0803	U	0.0687	U	0.37		0.458		0.165		1.18		0.88	
Fluorene	86-73-7	57000	0.0734	U	0.0803	U	0.0687	U	0.071	U	0.0707	U	0.0786	U	0.0878	U	0.0759	U
Hexachlorobenzene	118-74-1	15	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Hexachlorobutadiene	87-68-3	320	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Hexachlorocyclopentadiene	77-47-4	5300	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	R	0.377	U
Hexachloroethane	67-72-1	620	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.116		0.0803	U	0.0687	U	0.18		0.724		0.189		1.05	J	0.572	
Isophorone	78-59-1	26000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Naphthalene	91-20-3	180	0.211		0.0803	U	0.451		0.207		0.552		0.132		0.252		0.821	
Nitrobenzene	98-95-3	240	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Pentachlorophenol	87-86-5	33	0.912	U	0.999	U	0.855	U	0.883	U	0.879	U	0.977	U	1.09	U	0.943	U
Phenanthrene	85-01-8	610000	0.302		0.0803	U	0.201		0.235		0.476		0.133		0.591		0.685	
Phenol	108-95-2	260000	0.365	U	0.399	U	0.342	U	0.353	U	0.351	U	0.391	U	0.437	U	0.377	U
Pyrene	129-00-0	58000	0.356		0.0803	U	0.0687	U	0.355		0.444		0.157		1.12		0.814	

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-26		SS-27		SS-28		SS-29		SS-3		SS-30		SS-4		SS-5		SS-6	
		Sampling Location:	SS-26		SS-27		SS-28		SS-29		BH-3		SS-30		BH-4		BH-5		BH-6	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/5/2014		5/7/2014		5/7/2014		5/7/2014		5/14/2014		5/7/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/9/2014		5/10/2014		5/10/2014		5/10/2014		5/21/2014		5/10/2014		5/30/2014		5/10/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	1.96	U	2.86	U	1.8	U	1.88	U	1.85	U	1.86	U	1.8	U	1.96	U	2.14	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2,4,5-Trichlorophenol	95-95-4	88000	0.978	U	1.43	U	0.896	U	0.939	U	0.923	R	0.928	U	0.899	U	0.977	U	1.07	U
2,4,6-Trichlorophenol	88-06-2	880	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2,4-Dichlorophenol	120-83-2	2600	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2,4-Dimethylphenol	105-67-9	18000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2,4-Dinitrophenol	51-28-5	1800	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2,4-Dinitrotoluene	121-14-2	80	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
2,6-Dinitrotoluene	606-20-2	890	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
2-Chloronaphthalene	91-58-7	64000	0.391	U	0.57	U	0.358	U	0.375	U	2.33		0.371	U	0.359	U	0.39	U	0.427	U
2-Chlorophenol	95-57-8	5100	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2-Methylnaphthalene	91-57-6	8200	0.267		0.115	U	0.0721	U	0.553		5.46		0.781		0.144		0.898		2.65	
2-Methylphenol	95-48-7	44000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
2-Nitroaniline	88-74-4	8500	0.978	U	1.43	U	0.896	U	0.939	U	0.923	U	0.928	U	0.899	U	0.977	U	1.07	U
2-Nitrophenol	88-75-5		0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
3 & 4 Methylphenol	MEPH3MEPH4		0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
3,3-Dichlorobenzidine	91-94-1	55	0.783	U	1.14	U	0.717	U	0.752	U	0.739	U	0.743	U	0.719	U	0.782	U	0.855	U
3-Nitroaniline	99-09-2		0.978	U	1.43	U	0.896	U	0.939	U	0.923	U	0.928	U	0.899	U	0.977	U	1.07	U
4,6-Dinitro-2-methylphenol	534-52-1		0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
4-Bromophenyl phenyl ether	101-55-3		0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
4-Chloro-3-methylphenol	59-50-7		0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
4-Chloroaniline	106-47-8	120	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
4-Chlorophenyl phenyl ether	7005-72-3		0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
4-Nitroaniline	100-01-6		0.978	U	1.43	U	0.896	U	0.939	U	0.923	U	0.928	U	0.899	U	0.977	U	1.07	U
4-Nitrophenol	100-02-7		0.391	U	0.57	U	0.358	U	0.375	U	0.369	R	0.371	U	0.359	U	0.39	U	0.427	U
Acenaphthene	83-32-9	66000	0.0787	U	0.115	U	0.0721	U	0.0755	U	1.34		0.558		0.0723	U	0.111		0.0935	
Acenaphthylene	208-96-8	74000	0.133		0.115	U	0.0721	U	0.0755	U	0.577		0.532		0.0827		0.735		0.258	
Acetophenone	98-86-2	2500	0.391	U	0.57	U	0.358	U	0.375	U	3.22		0.371	U	0.359	U	0.39	U	0.427	U
Anthracene	120-12-7	610000	0.115		0.115	U	0.0721	U	0.146		0.284		1		0.487		0.645		0.188	J
Atrazine	1912-24-9	110	0.391	U	0.57	U	0.358	U	0.375	U	0.369	UJ	0.371	U	0.359	U	0.39	U	0.427	U
Benzaldehyde	100-52-7	1200	1.96	U	2.86	U	1.8	U	1.88	U	1.85	UJ	1.86	U	1.8	U	1.96	U	2.14	U
Benzo[a]anthracene	56-55-3	29	0.203		0.115	U	0.0721	U	0.454		0.297		2.39		2.42		1.54		0.468	
Benzo[a]pyrene	50-32-8	2.9	0.27		0.115	U	0.102		0.35		0.207		2.07		0.895		2.13		0.438	
Benzo[b]fluoranthene	205-99-2	29	0.591		0.115	U	0.0907		0.654		0.383		3.05		2.39		3.9		0.793	
Benzo[g,h,i]perylene	191-24-2	23000	0.613		0.115	U	0.093		0.201		0.0813		1.28		0.354		2.87		0.281	
Benzo[k]fluoranthene	207-08-9	290	0.205		0.115	U	0.0721	U	0.191		0.0864		1.35		1.06		1.46		0.216	
Biphenyl	92-52-4	220	0.391	U	0.57	U	0.358	U	0.375	U	0.917		0.371	U	0.359	U	0.39	U	0.427	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Bis(2-chloroethoxy)methane	111-91-1		0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Bis(2-chloroethyl)ether	111-44-4	13	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Butyl benzyl phthalate	85-68-7	13000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Caprolactam	105-60-2	440000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Carbazole	86-74-8		0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Chrysene	218-01-9	2900	0.268		0.115	U	0.0721	U	0.426		0.354		2.23		2.05		1.81		0.524	
Dibenz(a,h)anthracene	53-70-3	2.9	0.0945		0.115	U	0.0721	U	0.085		0.0742	U	0.44		0.159		0.577		0.109	
Dibenzofuran	132-64-9	2000	0.391	U	0.57	U	0.358	U	0.375	U	1.31		0.771		0.359	U	0.462		0.695	
Diethyl phthalate	84-66-2	700000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Dimethyl phthalate	131-11-3		1.96	U	2.86	U	1.8	U	1.88	U	1.85	U	1.86	U	1.8	U	1.96	U	2.14	U

Table B6 - Surface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-26		SS-27		SS-28		SS-29		SS-3		SS-30		SS-4		SS-5		SS-6	
		Sampling Location:	SS-26		SS-27		SS-28		SS-29		BH-3		SS-30		BH-4		BH-5		BH-6	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/5/2014		5/7/2014		5/7/2014		5/7/2014		5/14/2014		5/7/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/9/2014		5/10/2014		5/10/2014		5/10/2014		5/21/2014		5/10/2014		5/30/2014		5/10/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Di-n-octyl phthalate	117-84-0		0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Fluoranthene	206-44-0	30000	0.321		0.115	U	0.0721	U	0.706		0.919		4.44		4.02		2.48		0.828	
Fluorene	86-73-7	57000	0.0787	U	0.115	U	0.0721	U	0.0755	U	0.158		0.433		0.0723	U	0.102		0.0941	
Hexachlorobenzene	118-74-1	15	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Hexachlorobutadiene	87-68-3	320	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Hexachlorocyclopentadiene	77-47-4	5300	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Hexachloroethane	67-72-1	620	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.408		0.115	U	0.0721	U	0.214		0.0884		1.33		0.412		2.37		0.269	
Isophorone	78-59-1	26000	0.391	U	0.57	U	0.358	U	0.375	U	19.5		0.371	U	0.359	U	0.39	U	0.427	U
Naphthalene	91-20-3	180	0.182		0.115	U	0.0721	U	0.431		6.64		0.487		0.12		0.636		1.95	
Nitrobenzene	98-95-3	240	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.391	U	0.57	U	0.358	U	0.375	U	0.369	U	0.371	U	0.359	U	0.39	U	0.427	U
Pentachlorophenol	87-86-5	33	0.978	U	1.43	U	0.896	U	0.939	U	0.923	R	0.928	U	0.899	U	0.977	U	1.07	U
Phenanthrene	85-01-8	610000	0.206		0.115	U	0.0721	U	0.589		2.83		4.19		1.34		1.41		1.3	
Phenol	108-95-2	260000	0.391	U	0.57	U	0.358	U	0.375	U	0.376	R	0.371	U	0.359	U	0.39	U	0.427	U
Pyrene	129-00-0	58000	0.314		0.115	U	0.0721	U	0.593		1.05		3.82		2.83		2.39		0.717	J

Table B6-A - Surface Soil Samples
Semi-Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-1		SS-10		SS-11		SS-11-A		SS-12		SS-13		SS-14		SS-15	
		Sampling Location:	BH-1		BH-10		BH-11		BH-11		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/30/2014		5/30/2014		5/30/2014		5/21/2014		5/20/2014		5/21/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Chloronaphthalene	91-58-7	64000													1.44			
2-Methylnaphthalene	91-57-6	8200	0.116		0.535	J	1.86		2.59		0.45		4.42		7.56		1.26	
3 & 4 Methylphenol	MEPH3MEPH4														0.543			
Acenaphthene	83-32-9	66000									0.237		0.218					
Acenaphthylene	208-96-8	74000					0.0844		0.123		0.195		0.553				2.49	
Acetophenone	98-86-2	2500											0.512					
Anthracene	120-12-7	610000							0.102		0.855		0.535		0.386		2.5	
Benzo[a]anthracene	56-55-3	29					0.141		0.211		2.71		1.68		0.462		8.28	
Benzo[a]pyrene	50-32-8	2.9					0.0916	J	0.193	J	**3.23**		1.38		0.271		**7**	
Benzo[b]fluoranthene	205-99-2	29	0.0815		0.121	J	0.179	J	0.317	J	4.38		2.29		0.69		12	
Benzo[g,h,i]perylene	191-24-2	23000					0.0792		0.137		2.41		0.793		0.154		3.97	
Benzo[k]fluoranthene	207-08-9	290					0.0808		0.128		1.71		1.03		0.147		4.53	
Biphenyl	92-52-4	220													0.968			
Bis(2-ethylhexyl) phthalate	117-81-7	1800									0.403							
Carbazole	86-74-8																1.78	
Chrysene	218-01-9	2900					0.19		0.288		2.69		1.75		0.635		7.79	
Dibenz(a,h)anthracene	53-70-3	2.9									0.678		0.264				1.4	
Dibenzofuran	132-64-9	2000					0.408		0.557				1.29		1.95		0.974	
Fluoranthene	206-44-0	30000					0.167		0.272		3.37		3.23		1.08		18.5	
Fluorene	86-73-7	57000									0.172		0.233				1.49	
Indeno[1,2,3-cd]pyrene	193-39-5	29							0.114		2.17		0.857		0.177		4.08	
Isophorone	78-59-1	26000																
Naphthalene	91-20-3	180			0.44	J	1.41		1.9		1.01		3.19		7.06		1.44	
Phenanthrene	85-01-8	610000	0.0968		0.212	J	0.647		0.93		1.6		2.4		3.32		10.8	
Phenol	108-95-2	260000													0.769			
Pyrene	129-00-0	58000					0.193	J	0.324	J	3.65		3.27		1.08		13.3	

Table B6-A - Surface Soil Samples
Semi-Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-16		SS-18		SS-19		SS-2		SS-22		SS-23		SS-25		SS-26	
		Sampling Location:	BH-16		BH-18		BH-19		BH-2		SS-22		SS-23		SS-25		SS-26	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/5/2014		5/7/2014		5/5/2014		5/5/2014	
		Date Analyzed:	5/21/2014		5/30/2014		5/20/2014		5/20/2014		5/9/2014		5/10/2014		5/9/2014		5/9/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Chloronaphthalene	91-58-7	64000																
2-Methylnaphthalene	91-57-6	8200	0.28		0.587		0.294		0.711		0.189		0.308		1.1		0.267	
3 & 4 Methylphenol	MEPH3MEPH4																	
Acenaphthene	83-32-9	66000																
Acenaphthylene	208-96-8	74000					0.129		0.119		0.0945		0.482		0.269		0.133	
Acetophenone	98-86-2	2500																
Anthracene	120-12-7	610000	0.0735				0.107		0.112				0.296		0.261		0.115	
Benzo[a]anthracene	56-55-3	29	0.298				0.202		0.467		0.102		0.73		0.576		0.203	
Benzo[a]pyrene	50-32-8	2.9	0.218				0.198		1.1		0.144		1.03		0.663		0.27	
Benzo[b]fluoranthene	205-99-2	29	0.421				0.378		1.7		0.316		1.88		1.42		0.591	
Benzo[g,h,i]perylene	191-24-2	23000	0.103				0.206		0.912		0.234		1.15	J	0.568		0.613	
Benzo[k]fluoranthene	207-08-9	290	0.142				0.15		0.449		0.112		0.656	J	0.537		0.205	
Biphenyl	92-52-4	220																
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.377															
Carbazole	86-74-8																	
Chrysene	218-01-9	2900	0.251		0.0722		0.221		0.558		0.162		0.953		0.781		0.268	
Dibenz(a,h)anthracene	53-70-3	2.9							0.221				0.299		0.164		0.0945	
Dibenzofuran	132-64-9	2000																
Fluoranthene	206-44-0	30000	0.414				0.37		0.458		0.165		1.18		0.88		0.321	
Fluorene	86-73-7	57000																
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.116				0.18		0.724		0.189		1.05	J	0.572		0.408	
Isophorone	78-59-1	26000																
Naphthalene	91-20-3	180	0.211		0.451		0.207		0.552		0.132		0.252		0.821		0.182	
Phenanthrene	85-01-8	610000	0.302		0.201		0.235		0.476		0.133		0.591		0.685		0.206	
Phenol	108-95-2	260000																
Pyrene	129-00-0	58000	0.356				0.355		0.444		0.157		1.12		0.814		0.314	

Table B6-A - Surface Soil Samples
Semi-Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-28		SS-29		SS-3		SS-30		SS-4		SS-5		SS-6		SS-6-A		SS-7	
		Sampling Location:	SS-28		SS-29		BH-3		SS-30		BH-4		BH-5		BH-6		BH-6		BH-7	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/7/2014		5/14/2014		5/7/2014		5/14/2014		5/6/2014		5/14/2014		5/14/2014		5/6/2014	
		Date Analyzed:	5/10/2014		5/10/2014		5/21/2014		5/10/2014		5/30/2014		5/10/2014		5/20/2014		5/21/2014		5/10/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Chloronaphthalene	91-58-7	64000					2.33													
2-Methylnaphthalene	91-57-6	8200			0.553		5.46		0.781		0.144		0.898		2.65		3.74		4.97	
3 & 4 Methylphenol	MEPH3MEPH4																		0.471	
Acenaphthene	83-32-9	66000					1.34		0.558				0.111		0.0935				0.102	
Acenaphthylene	208-96-8	74000					0.577		0.532		0.0827		0.735		0.258		0.413		0.274	
Acetophenone	98-86-2	2500					3.22										0.418		0.797	
Anthracene	120-12-7	610000			0.146		0.284		1		0.487		0.645		0.188	J	0.352	J	0.404	
Benzo[a]anthracene	56-55-3	29			0.454		0.297		2.39		2.42		1.54		0.468		0.615		1	
Benzo[a]pyrene	50-32-8	2.9	0.102		0.35		0.207		2.07		0.895		2.13		0.438		0.563		0.627	
Benzo[b]fluoranthene	205-99-2	29	0.0907		0.654		0.383		3.05		2.39		3.9		0.793		1.01		1.46	
Benzo[g,h,i]perylene	191-24-2	23000	0.093		0.201		0.0813		1.28		0.354		2.87		0.281		0.302		0.413	
Benzo[k]fluoranthene	207-08-9	290			0.191		0.0864		1.35		1.06		1.46		0.216		0.331		0.533	
Biphenyl	92-52-4	220					0.917												0.38	
Bis(2-ethylhexyl) phthalate	117-81-7	1800															0.462			
Carbazole	86-74-8																			
Chrysene	218-01-9	2900			0.426		0.354		2.23		2.05		1.81		0.524		0.669		1.28	
Dibenz(a,h)anthracene	53-70-3	2.9			0.085				0.44		0.159		0.577		0.109		0.119		0.135	
Dibenzofuran	132-64-9	2000					1.31		0.771				0.462		0.695		1		1.4	
Fluoranthene	206-44-0	30000			0.706		0.919		4.44		4.02		2.48		0.828		1.22		1.88	
Fluorene	86-73-7	57000					0.158		0.433				0.102		0.0941		0.152		0.146	
Indeno[1,2,3-cd]pyrene	193-39-5	29			0.214		0.0884		1.33		0.412		2.37		0.269		0.318		0.414	
Isophorone	78-59-1	26000					19.5													
Naphthalene	91-20-3	180			0.431		6.64		0.487		0.12		0.636		1.95		2.92		3.93	
Phenanthrene	85-01-8	610000			0.589		2.83		4.19		1.34		1.41		1.3		1.95		2.41	
Phenol	108-95-2	260000																	0.424	
Pyrene	129-00-0	58000			0.593		1.05		3.82		2.83		2.39		0.717	J	1.21	J	1.52	

Table B7 - Surface Soil Samples
PCB Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-17		SS-20		SS-20-A		SS-21		SS-5		SS-7		SS-9	
		Sampling Location:	BH-17		BH-20		BH-20		BH-21		BH-5		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/5/2014		5/15/2014		5/15/2014		5/15/2014		5/6/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/9/2014		6/2/2014		6/2/2014		6/2/2014		5/15/2014		5/23/2014		6/2/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1016	12674-11-2	50	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1221	11104-28-2	12	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1232	11141-16-5	12	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1242	53469-21-9	10	0.0648	J	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1248	12672-29-6	10	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1254	11097-69-1	10	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1260	11096-82-5	10	0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.034	J	0.0378	U	0.0384	U
PCB-1262	37324-23-5		0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U
PCB-1268	11100-14-4		0.0402	U	0.0379	U	0.0367	U	0.0356	U	0.033	U	0.0378	U	0.0384	U

Table B7-A- Surface Soil Samples
PCB Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-17		SS-5	
		Sampling Location:	BH-17		BH-5	
		Matrix:	Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg	
		Date Sampled:	5/5/2014		5/6/2014	
		Date Analyzed:	5/9/2014		5/15/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q
PCB-1242	53469-21-9	10	0.0648	J		
PCB-1260	11096-82-5	10			0.034	J

Table B8 - Surface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-1		SS-10		SS-11		SS-11-A		SS-12		SS-13		SS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-11		BH-12		BH-13		BH-14	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/22/2014		5/23/2014		5/22/2014		5/22/2014		5/24/2014		5/29/2014		5/23/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	6340		36400		8690		6790		17300		12500		9970	
Antimony	7440-36-0	820	22.5	U	29.1	U	23.9	U	23.3	U	109	U	62.3	U	23.8	U
Arsenic	7440-38-2	27	8.68		9.54		21.9		**30**		21.8	U	**68.3**		**85.1**	
Barium	7440-39-3	360000	62.6		455		83.1		66.9		227		147		94	
Beryllium	7440-41-7	3900	2.25	U	4.89		1.34	J	1.21	J	10.9	U	3.12	J	1.67	J
Cadmium	7440-43-9	800	2.25	U	0.291	J	0.335	J	2.33	U	10.9	U	6.23	U	2.38	U
Calcium	7440-70-2		11500		208000		22900	J	11600	J	218000		72500	B	54500	
Chromium	7440-47-3		13.5		11		25.4		25.8		451		79.7		114	
Cobalt	7440-48-4	600	8.23		5.82	U	6.51		5.74		21.8	U	12.5	U	6.19	
Copper	7440-50-8	82000	18.3		22.1		77		49.5		422		318		44	
Iron	7439-89-6	1000000	26200		18000		39800		44000		122000		92200		83000	
Lead	7439-92-1	1000	18.7		61		106		70.2		286		785		108	
Magnesium	7439-95-4		2120		17100		7830	J	2920	J	37700		13700		8890	
Manganese	7439-96-5	72000	650	B	1340	B	546	B	487	B	19000	B	2490		4290	B
Nickel	7440-02-0	38000	16.6		6.75		16.2		16.4		25.5		22.9		19.2	
Potassium	7440-09-7		760		1810		901		719		1400	J	1140	J	957	
Selenium	7782-49-2	10000	4.5	U	5.82	U	2.54	J	4.67	U	16.1	J	12.5	U	2.62	J
Silver	7440-22-4	10000	2.25	U	2.91	U	2.39	U	2.33	U	10.9	U	6.23	U	2.38	U
Sodium	7440-23-5		450	U	509	J	246	J	467	U	2180	U	1250	U	419	J
Thallium	7440-28-0	20	4.5	U	5.82	U	4.79	U	4.67	U	13.5	U	12.5	U	3.91	U
Vanadium	7440-62-2	140	15.4	J	10.9	J	17.9	J	18.6	J	**504**		71.1		132	
Zinc	7440-66-6	610000	66.4		76.7		185		165		261		511		80.7	
Chromium, hex	18540-29-9	110														
Mercury	7439-97-6	610	0.0543	J	0.142	U	0.152		0.141		0.287		0.056	J	0.271	J+

Table B8 - Surface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-15		SS-16		SS-17		SS-18		SS-19		SS-2		SS-22	
		Sampling Location:	BH-15		BH-16		BH-17		BH-18		BH-19		BH-2		SS-22	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/14/2014		5/14/2014		5/5/2014	
		Date Analyzed:	5/29/2014		5/23/2014		5/13/2014		5/23/2014		5/29/2014		5/29/2014		5/13/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	1030		36600		11600		4990		6310		10700		27900	
Antimony	7440-36-0	820	24	U	21.8	U	12.5	U	20.8	U	21.1	U	22	U	12.1	U
Arsenic	7440-38-2	27	13.6		2.66	J	12.4		8.02		10.9		13.2		6.65	
Barium	7440-39-3	360000	25.8		476		110		70.9		70.6		122		302	
Beryllium	7440-41-7	3900	2.4	U	8.01		0.676	J	2.08	U	2.11	U	1.49	J	5.69	
Cadmium	7440-43-9	800	2.4	U	0.348	J	0.376	J	0.249	J	2.11	U	2.2	U	1.28	
Calcium	7440-70-2		7240		190000		1830		24500		33400	B	49800	B	180000	
Chromium	7440-47-3		16		36.2		16.8		8.85		16.9		54.1		36.5	
Cobalt	7440-48-4	600	4.79	U	4.35	U	16		4.98		7.84		15.4		4.48	
Copper	7440-50-8	82000	160		12.2		22.2		16.5		40.5		31.7		26.3	J+
Iron	7439-89-6	1000000	18100		6050		33900	B	20500		28400		31400		26200	B
Lead	7439-92-1	1000	57.5		66.6		20		24.6		39.6		58.5		89.2	
Magnesium	7439-95-4		775		38800		3360		2040		3370		6090		33500	
Manganese	7439-96-5	72000	802		3650	B	770		606	B	786		865		3370	
Nickel	7440-02-0	38000	3.84	J	22.2		26.4		10.1		16.6		416		97.5	
Potassium	7440-09-7		479	U	2080		1180		537		821		1010		1710	
Selenium	7782-49-2	10000	4.79	U	4.57		6.16	U	4.15	U	4.21	U	2.33	J	10.9	B
Silver	7440-22-4	10000	2.4	U	2.18	U	1.25	U	2.08	U	2.11	U	2.2	U	1.21	U
Sodium	7440-23-5		479	U	1170		31.2	J	415	U	421	U	234	J	916	
Thallium	7440-28-0	20	4.79	U	3.74	U	2.5	U	4.15	U	4.21	U	4.39	U	2.41	U
Vanadium	7440-62-2	140	16.9	J	10.6	J	22		8.52	J	15.4	J	16.8	J	19.2	
Zinc	7440-66-6	610000	26.5		104		72.8	B	174		126		12500		3740	
Chromium, hex	18540-29-9	110					6	U							6.18	U
Mercury	7439-97-6	610	0.148		0.0723	J+	0.0444	UJ	0.108	U	0.0405	J	0.0695	J	0.0421	J

Table B8 - Surface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-23		SS-25		SS-26		SS-27		SS-28		SS-29		SS-3	
		Sampling Location:	SS-23		SS-25		SS-26		SS-27		SS-28		SS-29		BH-3	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/5/2014		5/5/2014		5/7/2014		5/7/2014		5/7/2014		5/14/2014	
		Date Analyzed:	5/14/2014		5/13/2014		5/13/2014		5/13/2014		5/14/2014		5/13/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	32200		9210		19200		6010		38800		8400		4340	
Antimony	7440-36-0	820	135	U	2.88	J	11.4	U	17.6	U	108	U	11.3	U	11.3	U
Arsenic	7440-38-2	27	**28.6**	J	12.5		7.42		4.29	J	21.7	U	2.64	J	**36.3**	J
Barium	7440-39-3	360000	438		137		222		677		503		180		40.3	
Beryllium	7440-41-7	3900	7.02	J	1.34		3.25		0.879	J	8.02	J	2.48		5.63	U
Cadmium	7440-43-9	800	7.29	J	1.23		0.572	J	0.492	J	10.8	U	0.36	J	5.63	U
Calcium	7440-70-2		134000		44200		97700		50400		194000		103000		2590	
Chromium	7440-47-3		173		52.9		63.6		80.4		32.7		5.07		15.9	
Cobalt	7440-48-4	600	27	U	7.9		4.17		1.93	J	21.7	U	2.25	U	11.3	U
Copper	7440-50-8	82000	99.3	J	55.7		37.4		14.6	J	21.7	U	23.2	J	49.8	
Iron	7439-89-6	1000000	56900		34400	B	19400	B	18900		10100		979		54600	
Lead	7439-92-1	1000	503		300		71.8		27.1		93.4		98.1		228	
Magnesium	7439-95-4		33800		9940		21100		3170		45500		25500		599	J
Manganese	7439-96-5	72000	4730	B	2980		2080		317	B	3840	B	1550	B	66.1	J
Nickel	7440-02-0	38000	412		35.9		27.2		23.3		21.7	U	9.55		15.5	
Potassium	7440-09-7		2410	J	771		1440		1420		2660		941		576	J
Selenium	7782-49-2	10000	27	U	8.15	U	8.56	U	3.52	U	21.7	U	2.25	U	11.3	U
Silver	7440-22-4	10000	13.5	U	1.12	U	1.14	U	1.76	U	10.8	U	1.13	U	5.63	U
Sodium	7440-23-5		2700	U	250		611		352	U	1420	J	580		1130	U
Thallium	7440-28-0	20	27	U	2.23	U	2.29	U	3.52	U	21.7	U	1.6	J	11.3	U
Vanadium	7440-62-2	140	48	J	46.3		27.1		7.87	J	22.3	J	11.3	UJ	15.5	J
Zinc	7440-66-6	610000	12100	J	1160		440	B	494	J	87.3	J	133	J	73.8	
Chromium, hex	18540-29-9	110	6.38	J-	5.69	U	5.64	U								
Mercury	7439-97-6	610	0.192		0.0656	J	0.0603	J	0.164	J-	0.107	UJ	0.113	UJ	0.091	J

Table B8 - Surface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-30		SS-4		SS-5		SS-6		SS-6-A		SS-7		SS-9	
		Sampling Location:	SS-30		BH-4		BH-5		BH-6		BH-6		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/14/2014		5/6/2014		5/14/2014		5/14/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/14/2014		5/23/2014		5/21/2014		5/29/2014		5/21/2014		5/21/2014		5/23/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	25400		11700		21600		6570		6060		13000		38100	
Antimony	7440-36-0	820	109	U	22	U	23.3	U	643	J	17.4	J	56.5	U	23.7	U
Arsenic	7440-38-2	27	21.7	U	19.5		7.89		259	U	22.9		10.1	J	4.69	J
Barium	7440-39-3	360000	295		181		203		259	U	65.8		201		373	
Beryllium	7440-41-7	3900	6.52	J	2.28		4.48		130	U	2.53	U	2.26	U	6.44	
Cadmium	7440-43-9	800	10.9	U	0.439	J	1.07	U	28.5	J	4.4	J	1.7	U	0.284	J
Calcium	7440-70-2		158000		59400		123000	B	25900	U	4400		69000	B	205000	
Chromium	7440-47-3		39.5		181		132		80.4	J	63.9		25.6		5.45	
Cobalt	7440-48-4	600	21.7	U	7.03		1.4	J	259	U	5.06	U	5.43	J	4.74	U
Copper	7440-50-8	82000	34.5	J	43.8		77.3		830	J	80.5	J	233		3.74	J
Iron	7439-89-6	1000000	13400		23400		37200		57300		45100		80000		7400	
Lead	7439-92-1	1000	95		143		986	J	**359000**	J	**5430**	J	169	J	1.56	J
Magnesium	7439-95-4		44500		11200		21100		25900	U	623		6760		22100	
Manganese	7439-96-5	72000	5000	B	1430	B	6950	J+	534	J	133	J	1420	J+	1750	B
Nickel	7440-02-0	38000	21.7	U	231		19.5		259	U	13.9		23.1		5.02	
Potassium	7440-09-7		2400		1090		1250		25900	U	493	J	1050	U	2250	
Selenium	7782-49-2	10000	21.7	U	4.39	U	4.76	J-	259	U	5.06	U	11.3	R	4.74	U
Silver	7440-22-4	10000	10.9	U	2.2	U	2.33	U	130	U	2.53	U	5.65	U	2.37	U
Sodium	7440-23-5		1130	J	359	J	524	U	25900	U	506	U	234	U	795	
Thallium	7440-28-0	20	21.7	U	4.39	U	4.67	U	259	U	5.06	U	11.3	U	4.74	U
Vanadium	7440-62-2	140	39.5	J	14.8	J	105		1300	U	13.1	J	56.5	U	11.4	J
Zinc	7440-66-6	610000	145	J	1460		471		51600	J	3360	J	535		23.7	U
Chromium, hex	18540-29-9	110			5.59	U			7.65		2.54	J				
Mercury	7439-97-6	610	0.11	UJ	0.279		0.0477	UJ	0.984	J	0.398	J	0.112	UJ	0.118	U

Table B8-A - Surface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-1		SS-10		SS-11		SS-11-A		SS-12		SS-13		SS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-11		BH-12		BH-13		BH-14	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/22/2014		5/23/2014		5/22/2014		5/22/2014		5/24/2014		5/29/2014		5/23/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	6340		36400		8690		6790		17300		12500		9970	
Antimony	7440-36-0	820														
Arsenic	7440-38-2	27	8.68		9.54		21.9		**30**				**68.3**		**85.1**	
Barium	7440-39-3	360000	62.6		455		83.1		66.9		227		147		94	
Beryllium	7440-41-7	3900			4.89		1.34	J	1.21	J			3.12	J	1.67	J
Cadmium	7440-43-9	800			0.291	J	0.335	J								
Calcium	7440-70-2		11500		208000		22900	J	11600	J	218000		72500	B	54500	
Chromium	7440-47-3		13.5		11		25.4		25.8		451		79.7		114	
Cobalt	7440-48-4	600	8.23				6.51		5.74						6.19	
Copper	7440-50-8	82000	18.3		22.1		77		49.5		422		318		44	
Iron	7439-89-6	1000000	26200		18000		39800		44000		122000		92200		83000	
Lead	7439-92-1	1000	18.7		61		106		70.2		286		785		108	
Magnesium	7439-95-4		2120		17100		7830	J	2920	J	37700		13700		8890	
Manganese	7439-96-5	72000	650	B	1340	B	546	B	487	B	19000	B	2490		4290	B
Nickel	7440-02-0	38000	16.6		6.75		16.2		16.4		25.5		22.9		19.2	
Potassium	7440-09-7		760		1810		901		719		1400	J	1140	J	957	
Selenium	7782-49-2	10000					2.54	J			16.1	J			2.62	J
Sodium	7440-23-5				509	J	246	J							419	J
Thallium	7440-28-0	20														
Vanadium	7440-62-2	140	15.4	J	10.9	J	17.9	J	18.6	J	**504**		71.1		132	
Zinc	7440-66-6	610000	66.4		76.7		185		165		261		511		80.7	
Chromium, hex	18540-29-9	110														
Mercury	7439-97-6	610	0.0543	J			0.152		0.141		0.287		0.056	J	0.271	J+

Table B8-A - Surface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-15		SS-16		SS-17		SS-18		SS-19		SS-2		SS-22	
		Sampling Location:	BH-15		BH-16		BH-17		BH-18		BH-19		BH-2		SS-22	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/14/2014		5/14/2014		5/5/2014	
		Date Analyzed:	5/29/2014		5/23/2014		5/13/2014		5/23/2014		5/29/2014		5/29/2014		5/13/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	1030		36600		11600		4990		6310		10700		27900	
Antimony	7440-36-0	820														
Arsenic	7440-38-2	27	13.6		2.66	J	12.4		8.02		10.9		13.2		6.65	
Barium	7440-39-3	360000	25.8		476		110		70.9		70.6		122		302	
Beryllium	7440-41-7	3900			8.01		0.676	J					1.49	J	5.69	
Cadmium	7440-43-9	800			0.348	J	0.376	J	0.249	J					1.28	
Calcium	7440-70-2		7240		190000		1830		24500		33400	B	49800	B	180000	
Chromium	7440-47-3		16		36.2		16.8		8.85		16.9		54.1		36.5	
Cobalt	7440-48-4	600					16		4.98		7.84		15.4		4.48	
Copper	7440-50-8	82000	160		12.2		22.2		16.5		40.5		31.7		26.3	J+
Iron	7439-89-6	1000000	18100		6050		33900	B	20500		28400		31400		26200	B
Lead	7439-92-1	1000	57.5		66.6		20		24.6		39.6		58.5		89.2	
Magnesium	7439-95-4		775		38800		3360		2040		3370		6090		33500	
Manganese	7439-96-5	72000	802		3650	B	770		606	B	786		865		3370	
Nickel	7440-02-0	38000	3.84	J	22.2		26.4		10.1		16.6		416		97.5	
Potassium	7440-09-7				2080		1180		537		821		1010		1710	
Selenium	7782-49-2	10000			4.57								2.33	J	10.9	B
Sodium	7440-23-5				1170		31.2	J					234	J	916	
Thallium	7440-28-0	20														
Vanadium	7440-62-2	140	16.9	J	10.6	J	22		8.52	J	15.4	J	16.8	J	19.2	
Zinc	7440-66-6	610000	26.5		104		72.8	B	174		126		12500		3740	
Chromium, hex	18540-29-9	110														
Mercury	7439-97-6	610	0.148		0.0723	J+					0.0405	J	0.0695	J	0.0421	J

Table B8-A - Surface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-23		SS-25		SS-26		SS-27		SS-28		SS-29		SS-3	
		Sampling Location:	SS-23		SS-25		SS-26		SS-27		SS-28		SS-29		BH-3	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/5/2014		5/5/2014		5/7/2014		5/7/2014		5/7/2014		5/14/2014	
		Date Analyzed:	5/14/2014		5/13/2014		5/13/2014		5/13/2014		5/14/2014		5/13/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	32200		9210		19200		6010		38800		8400		4340	
Antimony	7440-36-0	820			2.88	J										
Arsenic	7440-38-2	27	**28.6**	J	12.5		7.42		4.29	J			2.64	J	**36.3**	J
Barium	7440-39-3	360000	438		137		222		677		503		180		40.3	
Beryllium	7440-41-7	3900	7.02	J	1.34		3.25		0.879	J	8.02	J	2.48			
Cadmium	7440-43-9	800	7.29	J	1.23		0.572	J	0.492	J			0.36	J		
Calcium	7440-70-2		134000		44200		97700		50400		194000		103000		2590	
Chromium	7440-47-3		173		52.9		63.6		80.4		32.7		5.07		15.9	
Cobalt	7440-48-4	600			7.9		4.17		1.93	J						
Copper	7440-50-8	82000	99.3	J	55.7		37.4		14.6	J			23.2	J	49.8	
Iron	7439-89-6	1000000	56900		34400	B	19400	B	18900		10100		979		54600	
Lead	7439-92-1	1000	503		300		71.8		27.1		93.4		98.1		228	
Magnesium	7439-95-4		33800		9940		21100		3170		45500		25500		599	J
Manganese	7439-96-5	72000	4730	B	2980		2080		317	B	3840	B	1550	B	66.1	J
Nickel	7440-02-0	38000	412		35.9		27.2		23.3				9.55		15.5	
Potassium	7440-09-7		2410	J	771		1440		1420		2660		941		576	J
Selenium	7782-49-2	10000														
Sodium	7440-23-5				250		611				1420	J	580			
Thallium	7440-28-0	20											1.6	J		
Vanadium	7440-62-2	140	48	J	46.3		27.1		7.87	J	22.3	J			15.5	J
Zinc	7440-66-6	610000	12100	J	1160		440	B	494	J	87.3	J	133	J	73.8	
Chromium, hex	18540-29-9	110	6.38	J-												
Mercury	7439-97-6	610	0.192		0.0656	J	0.0603	J	0.164	J-					0.091	J

Table B8-A - Surface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SS-30		SS-4		SS-5		SS-6		SS-6-A		SS-7		SS-9	
		Sampling Location:	SS-30		BH-4		BH-5		BH-6		BH-6		BH-7		BH-9	
		Matrix:	Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil		Surface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/7/2014		5/14/2014		5/6/2014		5/14/2014		5/14/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/14/2014		5/23/2014		5/21/2014		5/29/2014		5/21/2014		5/21/2014		5/23/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	25400		11700		21600		6570		6060		13000		38100	
Antimony	7440-36-0	820							643	J	17.4	J				
Arsenic	7440-38-2	27			19.5		7.89				22.9		10.1	J	4.69	J
Barium	7440-39-3	360000	295		181		203				65.8		201		373	
Beryllium	7440-41-7	3900	6.52	J	2.28		4.48								6.44	
Cadmium	7440-43-9	800			0.439	J			28.5	J	4.4	J			0.284	J
Calcium	7440-70-2		158000		59400		123000	B			4400		69000	B	205000	
Chromium	7440-47-3		39.5		181		132		80.4	J	63.9		25.6		5.45	
Cobalt	7440-48-4	600			7.03		1.4	J					5.43	J		
Copper	7440-50-8	82000	34.5	J	43.8		77.3		830	J	80.5	J	233		3.74	J
Iron	7439-89-6	1000000	13400		23400		37200		57300		45100		80000		7400	
Lead	7439-92-1	1000	95		143		986	J	**359000**	J	**5430**	J	169	J	1.56	J
Magnesium	7439-95-4		44500		11200		21100				623		6760		22100	
Manganese	7439-96-5	72000	5000	B	1430	B	6950	J+	534	J	133	J	1420	J+	1750	B
Nickel	7440-02-0	38000			231		19.5				13.9		23.1		5.02	
Potassium	7440-09-7		2400		1090		1250				493	J			2250	
Selenium	7782-49-2	10000					4.76	J-					11.3	R		
Sodium	7440-23-5		1130	J	359	J									795	
Thallium	7440-28-0	20														
Vanadium	7440-62-2	140	39.5	J	14.8	J	105				13.1	J			11.4	J
Zinc	7440-66-6	610000	145	J	1460		471		51600	J	3360	J	535			
Chromium, hex	18540-29-9	110							7.65		2.54	J				
Mercury	7439-97-6	610			0.279				0.984	J	0.398	J				

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/16/2014		5/16/2014		5/19/2014		5/16/2014		5/16/2014		5/19/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1	910	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,1,2-Trichloroethane	79-00-5	57	0.00504	U	0.0119	U	0.00505	U	0.00778	U	0.00723	U	0.00777	U	0.00794	U
1,1-Dichloroethane	75-34-3	170	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,1-Dichloroethene	75-35-4	1100	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,2,3-Trichlorobenzene	87-61-6		0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
1,2,4-Trichlorobenzene	120-82-1	280	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.00504	U	0.0119	U	0.00505	U	0.00778	U	0.00723	U	0.425	U	0.00794	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,2-Dichlorobenzene	95-50-1	380	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
1,2-Dichloroethane	107-06-2	23	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,2-Dichloropropane	78-87-5	47	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
1,3-Dichlorobenzene	541-73-1		0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
1,4-Dichlorobenzene	106-46-7	140	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.17	U	0.00318	U
2-Butanone (MEK)	78-93-3	28000	0.0504	U	0.119	U	0.0143	J	0.0778	U	0.0723	U	0.0777	U	0.0794	U
2-Hexanone	591-78-6		0.0504	U	0.119	U	0.0505	U	0.0778	U	0.0723	U	0.0777	U	0.0794	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.0504	U	0.119	U	0.0505	U	0.0778	U	0.0723	U	0.0777	U	0.0794	U
Acetone	67-64-1	110000	0.0504	U	0.119	U	0.12		0.0778	U	0.0723	U	0.0777	U	0.0794	U
Benzene	71-43-2	57	0.00202	U	0.00476	U	0.000721	J	0.00126	J	0.00289	U	0.00113	J	0.00318	U
Bromochloromethane	74-97-5		0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Bromodichloromethane	75-27-4	14	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Bromoform	75-25-2	3100	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Bromomethane	74-83-9	33	0.00202	UJ	0.00476	UJ	0.00202	UJ	0.00311	U	0.00289	U	0.00311	UJ	0.00318	U
Carbon disulfide	75-15-0	740	0.00504	U	0.0129		0.00505	U	0.00778	U	0.00723	U	0.00777	U	0.00794	U
Carbon tetrachloride	56-23-5	32	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Chlorobenzene	108-90-7	760	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Chlorodibromomethane	124-48-1	290	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Chloroethane	75-00-3	2100	0.00504	U	0.0119	U	0.00505	U	0.00778	U	0.00723	U	0.00777	U	0.00794	U
Chloroform	67-66-3	15	0.00202	U	0.00476	U	0.00202	U	0.00107	J	0.00289	U	0.00311	U	0.00318	U
Chloromethane	74-87-3	510	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
cis-1,2-Dichloroethene	156-59-2	82	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
cis-1,3-Dichloropropene	10061-01-5		0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Cyclohexane	110-82-7	120	0.0101	U	0.0238	U	0.0101	U	0.0156	U	0.0145	U	0.0155	U	0.0159	U
Dichlorodifluoromethane	75-71-8	800	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Ethylbenzene	100-41-4	290	0.00202	UJ	0.00476	UJ	0.00202	UJ	0.00311	U	0.00289	U	0.0014	J	0.00318	U
Isopropylbenzene	98-82-8	270	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00081	J	0.00318	U
Methyl acetate	79-20-9	29000	0.0101	UJ	0.0238	UJ	0.0101	UJ	0.0156	UJ	0.0145	UJ	0.0155	UJ	0.0159	UJ
Methyl tert-butyl ether	1634-04-4	2300	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/16/2014		5/16/2014		5/19/2014		5/16/2014		5/16/2014		5/19/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Methylcyclohexane	108-87-2		0.0101	U	0.0238	U	0.0101	U	0.0156	U	0.0145	U	0.00671	J	0.0159	U
Methylene Chloride	75-09-2	3300	0.0101	U	0.00722	J	0.0101	U	0.00182	J	0.00142	J	0.00142	J	0.00152	J
Styrene	100-42-5	870	0.00202	UJ	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Tetrachloroethene	127-18-4	170	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Toluene	108-88-3	820	0.00202	UJ	0.00476	UJ	0.00105	J	0.00311	U	0.00289	U	0.00605	J	0.00318	U
trans-1,2-Dichloroethene	156-60-5	700	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
trans-1,3-Dichloropropene	10061-02-6		0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Trichloroethene	79-01-6	21	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Trichlorofluoromethane	75-69-4	1200	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Vinyl chloride	75-01-4	0	0.00202	U	0.00476	U	0.00202	U	0.00311	U	0.00289	U	0.00311	U	0.00318	U
Xylenes, Total	1330-20-7	260	0.00504	U	0.0119	U	0.00505	U	0.00778	U	0.00723	U	0.00704	J	0.00794	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-15		SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19	
		Sampling Location:	BH-15		BH-16		BH-16		BH-17		BH-18		BH-18		BH-19	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014	
		Date Analyzed:	5/19/2014		5/17/2014		5/16/2014		5/9/2014		5/16/2014		5/16/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1	910	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,1,2-Trichloroethane	79-00-5	57	0.44	U	0.00644	U	0.00508	U	0.00581	U	0.00546	U	0.00518	U	0.00494	U
1,1-Dichloroethane	75-34-3	170	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,1-Dichloroethene	75-35-4	1100	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2,3-Trichlorobenzene	87-61-6		0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2,4-Trichlorobenzene	120-82-1	280	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.44	U	0.00644	U	0.00508	U	0.00581	U	0.00546	U	0.00518	U	0.00494	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2-Dichlorobenzene	95-50-1	380	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2-Dichloroethane	107-06-2	23	0.00268	U	0.00258	UJ	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,2-Dichloropropane	78-87-5	47	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,3-Dichlorobenzene	541-73-1		0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
1,4-Dichlorobenzene	106-46-7	140	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
2-Butanone (MEK)	78-93-3	28000	0.0318	J	0.0644	U	0.0508	U	0.00622	J	0.0546	U	0.0518	U	0.0494	U
2-Hexanone	591-78-6		4.4	U	0.0644	U	0.0508	U	0.0581	U	0.0546	U	0.0518	U	0.0494	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	4.4	U	0.0644	U	0.0508	U	0.0581	U	0.0546	U	0.0518	U	0.0494	U
Acetone	67-64-1	110000	0.168	J	0.0644	U	0.0508	U	0.0581	U	0.0546	U	0.0518	U	0.0494	U
Benzene	71-43-2	57	0.00433	J	0.00717		0.00203	U	0.0049		0.00219	U	0.00207	U	0.00198	U
Bromochloromethane	74-97-5		0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Bromodichloromethane	75-27-4	14	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Bromoform	75-25-2	3100	0.176	U	0.00258	U	0.00203	U	0.00232	UJ	0.00219	U	0.00207	U	0.00198	U
Bromomethane	74-83-9	33	0.00268	UJ	0.00258	UJ	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Carbon disulfide	75-15-0	740	0.0137	J	0.01		0.00508	U	0.00581	U	0.00546	U	0.00518	U	0.00494	U
Carbon tetrachloride	56-23-5	32	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Chlorobenzene	108-90-7	760	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Chlorodibromomethane	124-48-1	290	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Chloroethane	75-00-3	2100	0.0067	U	0.00644	U	0.00508	U	0.00581	U	0.00546	U	0.00518	U	0.00494	U
Chloroform	67-66-3	15	0.00178	J	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Chloromethane	74-87-3	510	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
cis-1,2-Dichloroethene	156-59-2	82	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
cis-1,3-Dichloropropene	10061-01-5		0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Cyclohexane	110-82-7	120	0.0166	J	0.0129	U	0.0102	U	0.00984	J	0.0109	U	0.0104	U	0.00989	U
Dichlorodifluoromethane	75-71-8	800	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Ethylbenzene	100-41-4	290	0.923		0.00258	U	0.00203	U	0.00182	J	0.00219	U	0.00207	U	0.00198	U
Isopropylbenzene	98-82-8	270	0.657		0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Methyl acetate	79-20-9	29000	0.0134	UJ	0.0129	UJ	0.0102	UJ	0.0116	UJ	0.0109	U	0.0104	U	0.00989	UJ
Methyl tert-butyl ether	1634-04-4	2300	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-15		SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19	
		Sampling Location:	BH-15		BH-16		BH-16		BH-17		BH-18		BH-18		BH-19	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014	
		Date Analyzed:	5/19/2014		5/17/2014		5/16/2014		5/9/2014		5/16/2014		5/16/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Methylcyclohexane	108-87-2		0.0101	J	0.0129	U	0.0102	U	0.0174		0.0109	U	0.0104	U	0.00989	U
Methylene Chloride	75-09-2	3300	0.0134	U	0.0129	U	0.000976	J	0.0116	U	0.000952	J	0.0104	U	0.00989	U
Styrene	100-42-5	870	0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Tetrachloroethene	127-18-4	170	0.176	U	0.00179	J	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Toluene	108-88-3	820	2.41		0.00574		0.00203	U	0.0106	J	0.00219	U	0.00207	U	0.00198	U
trans-1,2-Dichloroethene	156-60-5	700	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
trans-1,3-Dichloropropene	10061-02-6		0.176	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Trichloroethene	79-01-6	21	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Trichlorofluoromethane	75-69-4	1200	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Vinyl chloride	75-01-4	0	0.00268	U	0.00258	U	0.00203	U	0.00232	U	0.00219	U	0.00207	U	0.00198	U
Xylenes, Total	1330-20-7	260	6.56		0.00417	J	0.00508	U	0.00908		0.00546	U	0.00518	U	0.00494	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-2-1		SBS-2-2		SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6	
		Sampling Location:	BH-2		BH-2		BH-3		BH-4		BH-4		BH-5		BH-6	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/16/2014		5/16/2014		5/16/2014		5/20/2014		5/16/2014		5/10/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1	910	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,1,2-Trichloroethane	79-00-5	57	0.0126	U	0.00532	U	0.00492	U	0.58	U	0.00481	U	0.00531	U	0.00498	U
1,1-Dichloroethane	75-34-3	170	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,1-Dichloroethene	75-35-4	1100	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,2,3-Trichlorobenzene	87-61-6		0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	UJ	0.00212	U	0.00199	U
1,2,4-Trichlorobenzene	120-82-1	280	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	UJ	0.00212	U	0.00199	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.0126	U	0.00532	U	0.00492	U	0.58	U	0.00481	U	0.00531	U	0.00498	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,2-Dichlorobenzene	95-50-1	380	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	UJ	0.00212	U	0.00199	U
1,2-Dichloroethane	107-06-2	23	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	UJ	0.00199	U
1,2-Dichloropropane	78-87-5	47	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
1,3-Dichlorobenzene	541-73-1		0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	UJ	0.00212	U	0.00199	U
1,4-Dichlorobenzene	106-46-7	140	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	UJ	0.00212	U	0.00199	U
2-Butanone (MEK)	78-93-3	28000	0.126	U	0.0532	U	0.0492	U	5.8	U	0.0481	U	0.0531	U	0.0498	U
2-Hexanone	591-78-6		0.126	U	0.0532	U	0.0492	U	5.8	UJ	0.0481	U	0.0531	U	0.0498	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.126	U	0.0532	U	0.0492	U	5.8	U	0.0481	U	0.0531	U	0.0498	U
Acetone	67-64-1	110000	0.126	U	0.0532	U	0.0492	U	5.8	U	0.0481	U	0.0531	U	0.0498	U
Benzene	71-43-2	57	0.00505	U	0.00213	U	0.00197	U	0.0856	J	0.00192	U	0.00212	U	0.00199	U
Bromochloromethane	74-97-5		0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Bromodichloromethane	75-27-4	14	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	UJ	0.00199	U
Bromoform	75-25-2	3100	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Bromomethane	74-83-9	33	0.00505	U	0.00213	UJ	0.00197	UJ	0.232	UJ	0.00192	UJ	0.00212	U	0.00199	UJ
Carbon disulfide	75-15-0	740	0.0216		0.00532	U	0.00492	U	0.58	U	0.00481	U	0.00531	U	0.00498	U
Carbon tetrachloride	56-23-5	32	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Chlorobenzene	108-90-7	760	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Chlorodibromomethane	124-48-1	290	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	UJ	0.00199	U
Chloroethane	75-00-3	2100	0.0126	U	0.00532	U	0.00492	U	0.58	U	0.00481	U	0.00531	U	0.00498	U
Chloroform	67-66-3	15	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Chloromethane	74-87-3	510	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
cis-1,2-Dichloroethene	156-59-2	82	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
cis-1,3-Dichloropropene	10061-01-5		0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Cyclohexane	110-82-7	120	0.0253	U	0.0106	U	0.00984	U	1.16	U	0.00961	U	0.0106	U	0.00996	U
Dichlorodifluoromethane	75-71-8	800	0.00505	U	0.00213	U	0.00197	U	0.232	UJ	0.00192	U	0.00212	UJ	0.00199	U
Ethylbenzene	100-41-4	290	0.00505	U	0.00213	UJ	0.00197	UJ	0.232	UJ	0.00192	U	0.00212	U	0.00199	UJ
Isopropylbenzene	98-82-8	270	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Methyl acetate	79-20-9	29000	0.0253	UJ	0.0106	UJ	0.00984	UJ	4.82	J	0.00961	UJ	0.0106	UJ	0.00996	UJ
Methyl tert-butyl ether	1634-04-4	2300	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-2-1		SBS-2-2		SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6	
		Sampling Location:	BH-2		BH-2		BH-3		BH-4		BH-4		BH-5		BH-6	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/16/2014		5/16/2014		5/16/2014		5/20/2014		5/16/2014		5/10/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Methylcyclohexane	108-87-2		0.0253	U	0.0106	U	0.00984	U	1.16	U	0.00961	U	0.0106	U	0.00996	U
Methylene Chloride	75-09-2	3300	0.00294	J	0.00208	J	0.00227	J	1.16	U	0.00216	J	0.00135	J	0.00296	J
Styrene	100-42-5	870	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Tetrachloroethene	127-18-4	170	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Toluene	108-88-3	820	0.00505	U	0.00213	UJ	0.00197	UJ	0.232	UJ	0.00192	U	0.00212	U	0.00199	UJ
trans-1,2-Dichloroethene	156-60-5	700	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
trans-1,3-Dichloropropene	10061-02-6		0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	UJ	0.00199	U
Trichloroethene	79-01-6	21	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Trichlorofluoromethane	75-69-4	1200	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Vinyl chloride	75-01-4	0	0.00505	U	0.00213	U	0.00197	U	0.232	U	0.00192	U	0.00212	U	0.00199	U
Xylenes, Total	1330-20-7	260	0.0126	U	0.00532	U	0.00492	U	0.171	J	0.00481	U	0.00531	U	0.00498	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/16/2014		5/19/2014		5/22/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	640	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,1,2,2-Tetrachloroethane	79-34-5	31	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1	910	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,1,2-Trichloroethane	79-00-5	57	0.00529	U	0.00488	U	0.00563	U	0.00591	U
1,1-Dichloroethane	75-34-3	170	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,1-Dichloroethene	75-35-4	1100	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2,3-Trichlorobenzene	87-61-6		0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2,4-Trichlorobenzene	120-82-1	280	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2-Dibromo-3-Chloropropane	96-12-8	71	0.00529	U	0.00488	U	0.00563	U	0.00591	U
1,2-Dibromoethane (EDB)	106-93-4	1.8	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2-Dichlorobenzene	95-50-1	380	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2-Dichloroethane	107-06-2	23	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,2-Dichloropropane	78-87-5	47	0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,3-Dichlorobenzene	541-73-1		0.00212	U	0.00195	U	0.00225	U	0.00236	U
1,4-Dichlorobenzene	106-46-7	140	0.00212	U	0.00195	U	0.00225	U	0.00236	U
2-Butanone (MEK)	78-93-3	28000	0.0529	U	0.0488	U	0.0059	J	0.0591	U
2-Hexanone	591-78-6		0.0529	U	0.0488	U	0.0563	U	0.0591	U
4-Methyl-2-pentanone (MIBK)	108-10-1	3400	0.0529	U	0.0488	U	0.0563	U	0.0591	U
Acetone	67-64-1	110000	0.0529	U	0.0488	U	0.0511	J	0.0591	U
Benzene	71-43-2	57	0.00212	U	0.00195	U	0.00119	J	0.00236	U
Bromochloromethane	74-97-5		0.00212	U	0.00195	U	0.00225	U	0.00236	U
Bromodichloromethane	75-27-4	14	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Bromoform	75-25-2	3100	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Bromomethane	74-83-9	33	0.00212	UJ	0.00195	UJ	0.00225	U	0.00236	U
Carbon disulfide	75-15-0	740	0.00529	U	0.00488	U	0.00563	U	0.00591	U
Carbon tetrachloride	56-23-5	32	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Chlorobenzene	108-90-7	760	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Chlorodibromomethane	124-48-1	290	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Chloroethane	75-00-3	2100	0.00529	U	0.00488	U	0.00563	U	0.00591	U
Chloroform	67-66-3	15	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Chloromethane	74-87-3	510	0.00212	U	0.00195	U	0.00225	U	0.00236	U
cis-1,2-Dichloroethene	156-59-2	82	0.00212	U	0.00195	U	0.00225	U	0.00236	U
cis-1,3-Dichloropropene	10061-01-5		0.00212	U	0.00195	U	0.00225	U	0.00236	U
Cyclohexane	110-82-7	120	0.0106	U	0.00977	U	0.0113	U	0.0118	U
Dichlorodifluoromethane	75-71-8	800	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Ethylbenzene	100-41-4	290	0.00212	UJ	0.00195	UJ	0.00225	UJ	0.00236	U
Isopropylbenzene	98-82-8	270	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Methyl acetate	79-20-9	29000	0.0106	UJ	0.00977	UJ	0.0113	U	0.0118	U
Methyl tert-butyl ether	1634-04-4	2300	0.00212	U	0.00195	U	0.00225	U	0.00236	U

Table B9 - Subsurface Soil Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/16/2014		5/19/2014		5/22/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q
Methylcyclohexane	108-87-2		0.0106	U	0.00977	U	0.0113	U	0.0118	U
Methylene Chloride	75-09-2	3300	0.0106	U	0.00977	U	0.0113	U	0.0118	U
Styrene	100-42-5	870	0.00212	U	0.00195	U	0.00225	UJ	0.00236	U
Tetrachloroethene	127-18-4	170	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Toluene	108-88-3	820	0.00212	UJ	0.00195	UJ	0.00103	J	0.00236	U
trans-1,2-Dichloroethene	156-60-5	700	0.00212	U	0.00195	U	0.00225	U	0.00236	U
trans-1,3-Dichloropropene	10061-02-6		0.00212	U	0.00195	U	0.00225	U	0.00236	U
Trichloroethene	79-01-6	21	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Trichlorofluoromethane	75-69-4	1200	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Vinyl chloride	75-01-4	0	0.00212	U	0.00195	U	0.00225	U	0.00236	U
Xylenes, Total	1330-20-7	260	0.00529	U	0.00488	U	0.00563	U	0.00591	U

Table B9-A - Subsurface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14		SBS-15	
		Sampling Location:	BH-10		BH-11		BH-12		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/16/2014		5/19/2014		5/16/2014		5/16/2014		5/19/2014		5/16/2014		5/19/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000			0.0143	J									0.0318	J
Acetone	67-64-1	110000			0.12										0.168	J
Benzene	71-43-2	57			0.000721	J	0.00126	J			0.00113	J			0.00433	J
Carbon disulfide	75-15-0	740	0.0129												0.0137	J
Chloroform	67-66-3	15					0.00107	J							0.00178	J
Cyclohexane	110-82-7	120													0.0166	J
Ethylbenzene	100-41-4	290									0.0014	J			0.923	
Isopropylbenzene	98-82-8	270									0.00081	J			0.657	
Methyl acetate	79-20-9	29000														
Methylcyclohexane	108-87-2										0.00671	J			0.0101	J
Methylene Chloride	75-09-2	3300	0.00722	J			0.00182	J	0.00142	J	0.00142	J	0.00152	J		
Tetrachloroethene	127-18-4	170														
Toluene	108-88-3	820			0.00105	J					0.00605	J			2.41	
Xylenes, Total	1330-20-7	260									0.00704	J			6.56	

Table B9-A - Subsurface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-2-1		SBS-2-2		SBS-3	
		Sampling Location:	BH-16		BH-16		BH-17		BH-18		BH-2		BH-2		BH-3	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/17/2014		5/16/2014		5/9/2014		5/16/2014		5/16/2014		5/16/2014		5/16/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000					0.00622	J								
Acetone	67-64-1	110000														
Benzene	71-43-2	57	0.00717				0.0049									
Carbon disulfide	75-15-0	740	0.01								0.0216					
Chloroform	67-66-3	15														
Cyclohexane	110-82-7	120					0.00984	J								
Ethylbenzene	100-41-4	290					0.00182	J								
Isopropylbenzene	98-82-8	270														
Methyl acetate	79-20-9	29000														
Methylcyclohexane	108-87-2						0.0174									
Methylene Chloride	75-09-2	3300			0.000976	J			0.000952	J	0.00294	J	0.00208	J	0.00227	J
Tetrachloroethene	127-18-4	170	0.00179	J												
Toluene	108-88-3	820	0.00574				0.0106	J								
Xylenes, Total	1330-20-7	260	0.00417	J			0.00908									

Table B9-A - Subsurface Soil Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-4-1		SBS-4-2		SBS-5		SBS-6		SBS-8	
		Sampling Location:	BH-4		BH-4		BH-5		BH-6		BH-8	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/6/2014		5/14/2014		5/15/2014	
		Date Analyzed:	5/20/2014		5/16/2014		5/10/2014		5/16/2014		5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3	28000									0.0059	J
Acetone	67-64-1	110000									0.0511	J
Benzene	71-43-2	57	0.0856	J							0.00119	J
Carbon disulfide	75-15-0	740										
Chloroform	67-66-3	15										
Cyclohexane	110-82-7	120										
Ethylbenzene	100-41-4	290										
Isopropylbenzene	98-82-8	270										
Methyl acetate	79-20-9	29000	4.82	J								
Methylcyclohexane	108-87-2											
Methylene Chloride	75-09-2	3300			0.00216	J	0.00135	J	0.00296	J		
Tetrachloroethene	127-18-4	170										
Toluene	108-88-3	820									0.00103	J
Xylenes, Total	1330-20-7	260	0.171	J								

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14		SBS-15	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	2.02	R	2.91	U	1.95	U	1.79	U	1.93	U	2.05	U	2.02	U	2.09	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,4,5-Trichlorophenol	95-95-4	88000	1.01	U	1.45	R	0.973	U	0.892	U	0.963	U	1.02	U	1.01	U	1.04	U
2,4,6-Trichlorophenol	88-06-2	880	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,4-Dichlorophenol	120-83-2	2600	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,4-Dimethylphenol	105-67-9	18000	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,4-Dinitrophenol	51-28-5	1800	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,4-Dinitrotoluene	121-14-2	80	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2,6-Dinitrotoluene	606-20-2	890	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2-Chloronaphthalene	91-58-7	64000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2-Chlorophenol	95-57-8	5100	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2-Methylnaphthalene	91-57-6	8200	0.081	U	0.117	U	0.0782	U	2.74		2.12		3.43		1.43		4.98	
2-Methylphenol	95-48-7	44000	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
2-Nitroaniline	88-74-4	8500	1.01	U	1.45	U	0.973	U	0.892	U	0.963	U	1.02	U	1.01	U	1.04	U
2-Nitrophenol	88-75-5		0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
3 & 4 Methylphenol	MEPH3MEPH4		0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
3,3-Dichlorobenzidine	91-94-1	55	0.807	U	1.16	U	0.779	U	0.714	U	0.771	U	0.817	U	0.806	U	0.835	U
3-Nitroaniline	99-09-2		1.01	U	1.45	U	0.973	U	0.892	U	0.963	U	1.02	U	1.01	U	1.04	U
4,6-Dinitro-2-methylphenol	534-52-1		0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
4-Bromophenyl phenyl ether	101-55-3		0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
4-Chloro-3-methylphenol	59-50-7		0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
4-Chloroaniline	106-47-8	120	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
4-Chlorophenyl phenyl ether	7005-72-3		0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
4-Nitroaniline	100-01-6		1.01	U	1.45	U	0.973	U	0.892	U	0.963	U	1.02	U	1.01	U	1.04	U
4-Nitrophenol	100-02-7		0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Acenaphthene	83-32-9	66000	0.081	U	0.117	U	0.0782	U	0.0966		0.0774	U	0.0896		0.0809	U	0.0839	U
Acenaphthylene	208-96-8	74000	0.081	U	0.117	U	0.0782	U	0.14		0.104		0.103		0.253		0.0839	U
Acetophenone	98-86-2	2500	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.566	
Anthracene	120-12-7	610000	0.081	U	0.117	U	0.0782	U	0.152		0.102		0.0821	U	0.179		0.0876	
Atrazine	1912-24-9	110	0.403	UJ	0.579	U	0.389	UJ	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Benzaldehyde	100-52-7	1200	2.02	U	2.91	U	1.95	U	1.79	U	1.93	U	2.05	U	2.02	U	2.09	U
Benzo[a]anthracene	56-55-3	29	0.081	U	0.117	U	0.0782	U	0.313		0.233		0.145		0.29		0.268	
Benzo[a]pyrene	50-32-8	2.9	0.081	U	0.117	U	0.0782	U	0.237		0.182		0.115		0.2		0.178	
Benzo[b]fluoranthene	205-99-2	29	0.081	U	0.117	U	0.0782	U	0.392		0.264		0.141		0.34		0.246	
Benzo[g,h,i]perylene	191-24-2	23000	0.081	U	0.117	U	0.0782	U	0.123		0.0867		0.0821	U	0.11		0.0899	
Benzo[k]fluoranthene	207-08-9	290	0.081	U	0.117	U	0.0782	U	0.129		0.129		0.0821	U	0.108		0.0883	
Biphenyl	92-52-4	220	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Bis(2-chloroethoxy)methane	111-91-1		0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Bis(2-chloroethyl)ether	111-44-4	13	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Butyl benzyl phthalate	85-68-7	13000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Caprolactam	105-60-2	440000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Carbazole	86-74-8		0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Chrysene	218-01-9	2900	0.081	U	0.117	U	0.0782	U	0.312		0.222		0.183		0.256		0.325	
Dibenz(a,h)anthracene	53-70-3	2.9	0.081	U	0.117	U	0.0782	U	0.0717	U	0.0774	U	0.0821	U	0.0809	U	0.0839	U
Dibenzofuran	132-64-9	2000	0.403	U	0.579	U	0.389	U	0.712		0.554		0.765		0.442		1.23	
Diethyl phthalate	84-66-2	700000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Dimethyl phthalate	131-11-3		2.02	R	2.91	U	1.95	U	1.79	U	1.93	U	2.05	U	2.02	U	2.09	U

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14		SBS-15	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14		BH-15	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Di-n-octyl phthalate	117-84-0		0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Fluoranthene	206-44-0	30000	0.081	U	0.117	U	0.0782	U	0.604		0.407		0.161		0.606		0.315	
Fluorene	86-73-7	57000	0.081	U	0.117	U	0.0782	U	0.0952		0.0819		0.0966		0.211		0.0839	U
Hexachlorobenzene	118-74-1	15	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Hexachlorobutadiene	87-68-3	320	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Hexachlorocyclopentadiene	77-47-4	5300	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Hexachloroethane	67-72-1	620	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.081	U	0.117	U	0.0782	U	0.122		0.104		0.0821	U	0.118		0.0839	U
Isophorone	78-59-1	26000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Naphthalene	91-20-3	180	0.081	U	0.117	U	0.0782	U	1.92		1.41		2.45		1.03		3.68	
Nitrobenzene	98-95-3	240	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.403	U	0.579	U	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Pentachlorophenol	87-86-5	33	1.01	U	1.45	R	0.973	U	0.892	U	0.963	U	1.02	U	1.01	U	1.04	U
Phenanthrene	85-01-8	610000	0.081	U	0.117	U	0.0782	U	1.26		0.921		1.21		1.09		1.72	
Phenol	108-95-2	260000	0.403	U	0.579	R	0.389	U	0.357	U	0.385	U	0.408	U	0.402	U	0.417	U
Pyrene	129-00-0	58000	0.081	U	0.117	U	0.0782	U	0.519		0.375		0.212		0.433		0.422	

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19		SBS-2-1		SBS-2-2	
		Sampling Location:	BH-16		BH-16		BH-17		BH-18		BH-18		BH-19		BH-2		BH-2	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/20/2014		5/20/2014		5/9/2014		5/29/2014		5/29/2014		5/20/2014		5/29/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	4.31	U	1.99	U	2.14	U	1.98	U	2.04	U	1.94	U	2.98	U	2.04	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2,4,5-Trichlorophenol	95-95-4	88000	2.15	U	0.994	U	1.07	U	0.986	U	1.02	U	0.967	U	1.49	R	1.02	U
2,4,6-Trichlorophenol	88-06-2	880	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2,4-Dichlorophenol	120-83-2	2600	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2,4-Dimethylphenol	105-67-9	18000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2,4-Dinitrophenol	51-28-5	1800	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2,4-Dinitrotoluene	121-14-2	80	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
2,6-Dinitrotoluene	606-20-2	890	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
2-Chloronaphthalene	91-58-7	64000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
2-Chlorophenol	95-57-8	5100	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2-Methylnaphthalene	91-57-6	8200	0.296		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
2-Methylphenol	95-48-7	44000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
2-Nitroaniline	88-74-4	8500	2.15	U	0.994	U	1.07	U	0.986	U	1.02	U	0.967	U	1.49	U	1.02	U
2-Nitrophenol	88-75-5		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
3 & 4 Methylphenol	MEPH3MEPH4		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
3,3-Dichlorobenzidine	91-94-1	55	1.72	U	0.796	U	0.854	U	0.79	U	0.813	U	0.774	U	1.19	U	0.816	U
3-Nitroaniline	99-09-2		2.15	U	0.994	U	1.07	U	0.986	U	1.02	U	0.967	U	1.49	U	1.02	U
4,6-Dinitro-2-methylphenol	534-52-1		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
4-Bromophenyl phenyl ether	101-55-3		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
4-Chloro-3-methylphenol	59-50-7		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
4-Chloroaniline	106-47-8	120	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
4-Chlorophenyl phenyl ether	7005-72-3		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
4-Nitroaniline	100-01-6		2.15	U	0.994	U	1.07	U	0.986	U	1.02	U	0.967	U	1.49	U	1.02	U
4-Nitrophenol	100-02-7		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
Acenaphthene	83-32-9	66000	0.173	U	0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Acenaphthylene	208-96-8	74000	0.173	U	0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Acetophenone	98-86-2	2500	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Anthracene	120-12-7	610000	0.173	U	0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Atrazine	1912-24-9	110	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Benzaldehyde	100-52-7	1200	4.31	U	1.99	U	2.14	U	1.98	U	2.04	U	1.94	U	2.98	U	2.04	U
Benzo[a]anthracene	56-55-3	29	0.402		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Benzo[a]pyrene	50-32-8	2.9	0.358		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Benzo[b]fluoranthene	205-99-2	29	0.703		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Benzo[g,h,i]perylene	191-24-2	23000	0.281		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Benzo[k]fluoranthene	207-08-9	290	0.226		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Biphenyl	92-52-4	220	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Bis(2-chloroethoxy)methane	111-91-1		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Bis(2-chloroethyl)ether	111-44-4	13	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Butyl benzyl phthalate	85-68-7	13000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Caprolactam	105-60-2	440000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Carbazole	86-74-8		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Chrysene	218-01-9	2900	0.429		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Dibenz(a,h)anthracene	53-70-3	2.9	0.173	U	0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Dibenzofuran	132-64-9	2000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Diethyl phthalate	84-66-2	700000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Dimethyl phthalate	131-11-3		4.31	U	1.99	U	2.14	U	1.98	U	2.04	U	1.94	U	2.98	U	2.04	U

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19		SBS-2-1		SBS-2-2	
		Sampling Location:	BH-16		BH-16		BH-17		BH-18		BH-18		BH-19		BH-2		BH-2	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/20/2014		5/20/2014		5/9/2014		5/29/2014		5/29/2014		5/20/2014		5/29/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Di-n-octyl phthalate	117-84-0		0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Fluoranthene	206-44-0	30000	0.587		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Fluorene	86-73-7	57000	0.173	U	0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Hexachlorobenzene	118-74-1	15	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Hexachlorobutadiene	87-68-3	320	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Hexachlorocyclopentadiene	77-47-4	5300	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Hexachloroethane	67-72-1	620	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.257		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Isophorone	78-59-1	26000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Naphthalene	91-20-3	180	0.344		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Nitrobenzene	98-95-3	240	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	U	0.407	U
Pentachlorophenol	87-86-5	33	2.15	U	0.994	U	1.07	U	0.986	U	1.02	U	0.967	U	1.49	R	1.02	U
Phenanthrene	85-01-8	610000	0.33		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U
Phenol	108-95-2	260000	0.86	U	0.397	U	0.426	U	0.394	U	0.406	U	0.387	U	0.594	R	0.407	U
Pyrene	129-00-0	58000	0.482		0.0799	U	0.0858	U	0.0793	U	0.0817	U	0.0778	U	0.12	U	0.0819	U

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6		SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-3		BH-4		BH-4		BH-5		BH-6		BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014		5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/20/2014		5/20/2014		5/20/2014		5/9/2014		5/20/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	260	2	U	2.09	U	1.98	U	2.03	U	2.03	U	2	U	1.97	U	1.99	U	2.05	U
2,3,4,6-Tetrachlorophenol	58-90-2	26000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,4,5-Trichlorophenol	95-95-4	88000	0.997	U	1.04	U	0.986	U	1.01	U	1.01	U	0.996	U	0.981	U	0.992	U	1.02	U
2,4,6-Trichlorophenol	88-06-2	880	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,4-Dichlorophenol	120-83-2	2600	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,4-Dimethylphenol	105-67-9	18000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,4-Dinitrophenol	51-28-5	1800	0.399	U	0.417	U	0.394	R	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,4-Dinitrotoluene	121-14-2	80	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2,6-Dinitrotoluene	606-20-2	890	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2-Chloronaphthalene	91-58-7	64000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2-Chlorophenol	95-57-8	5100	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2-Methylnaphthalene	91-57-6	8200	0.0802	U	1.4		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
2-Methylphenol	95-48-7	44000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
2-Nitroaniline	88-74-4	8500	0.997	U	1.04	U	0.986	U	1.01	U	1.01	U	0.996	U	0.981	U	0.992	U	1.02	U
2-Nitrophenol	88-75-5		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
3 & 4 Methylphenol	MEPH3MEPH4		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
3,3-Dichlorobenzidine	91-94-1	55	0.798	U	0.834	U	0.79	U	0.811	U	0.81	U	0.798	U	0.785	U	0.794	U	0.818	U
3-Nitroaniline	99-09-2		0.997	U	1.04	U	0.986	U	1.01	U	1.01	U	0.996	U	0.981	U	0.992	U	1.02	U
4,6-Dinitro-2-methylphenol	534-52-1		0.399	U	0.417	U	0.394	UJ	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
4-Bromophenyl phenyl ether	101-55-3		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
4-Chloro-3-methylphenol	59-50-7		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
4-Chloroaniline	106-47-8	120	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
4-Chlorophenyl phenyl ether	7005-72-3		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
4-Nitroaniline	100-01-6		0.997	U	1.04	U	0.986	U	1.01	U	1.01	U	0.996	U	0.981	U	0.992	U	1.02	U
4-Nitrophenol	100-02-7		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Acenaphthene	83-32-9	66000	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Acenaphthylene	208-96-8	74000	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Acetophenone	98-86-2	2500	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Anthracene	120-12-7	610000	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Atrazine	1912-24-9	110	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	UJ	0.392	UJ	0.397	UJ	0.408	U
Benzaldehyde	100-52-7	1200	2	U	2.09	U	1.98	U	2.03	U	2.03	U	2	U	1.97	U	1.99	R	2.05	U
Benzo[a]anthracene	56-55-3	29	0.0802	U	0.144		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Benzo[a]pyrene	50-32-8	2.9	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Benzo[b]fluoranthene	205-99-2	29	0.0802	U	0.209		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Benzo[g,h,i]perylene	191-24-2	23000	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Benzo[k]fluoranthene	207-08-9	290	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Biphenyl	92-52-4	220	0.399	U	1.3		0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
bis (2-chloroisopropyl) ether	108-60-1	300	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Bis(2-chloroethoxy)methane	111-91-1		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Bis(2-chloroethyl)ether	111-44-4	13	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Bis(2-ethylhexyl) phthalate	117-81-7	1800	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Butyl benzyl phthalate	85-68-7	13000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Caprolactam	105-60-2	440000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Carbazole	86-74-8		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Chrysene	218-01-9	2900	0.0802	U	0.434		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Dibenz(a,h)anthracene	53-70-3	2.9	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Dibenzofuran	132-64-9	2000	0.399	U	2.14		0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Diethyl phthalate	84-66-2	700000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Dimethyl phthalate	131-11-3		2	U	2.09	U	1.98	U	2.03	U	2.03	U	2	U	1.97	U	1.99	U	2.05	U

Table B10 - Subsurface Soil Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6		SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-3		BH-4		BH-4		BH-5		BH-6		BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014		5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/20/2014		5/20/2014		5/20/2014		5/9/2014		5/20/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Di-n-butyl phthalate	84-74-2	88000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Di-n-octyl phthalate	117-84-0		0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Fluoranthene	206-44-0	30000	0.0802	U	0.641		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Fluorene	86-73-7	57000	0.0802	U	0.101		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Hexachlorobenzene	118-74-1	15	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Hexachlorobutadiene	87-68-3	320	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Hexachlorocyclopentadiene	77-47-4	5300	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Hexachloroethane	67-72-1	620	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.0802	U	0.0838	U	0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Isophorone	78-59-1	26000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Naphthalene	91-20-3	180	0.0802	U	1.42		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Nitrobenzene	98-95-3	240	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
N-Nitrosodi-n-propylamine	621-64-7	3.5	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	5000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Pentachlorophenol	87-86-5	33	0.997	U	1.04	U	0.986	U	1.01	U	1.01	U	0.996	U	0.981	U	0.992	U	1.02	U
Phenanthrene	85-01-8	610000	0.0802	U	1.7		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U
Phenol	108-95-2	260000	0.399	U	0.417	U	0.394	U	0.405	U	0.404	U	0.398	U	0.392	U	0.397	U	0.408	U
Pyrene	129-00-0	58000	0.0802	U	0.293		0.0793	U	0.0814	U	0.0814	U	0.0801	U	0.0789	U	0.0798	U	0.0822	U

Table B10-A - Subsurface Soil Samples
Semi-Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-12		SBS-12-A		SBS-13		SBS-14		SBS-15		SBS-16-1		SBS-4-1	
		Sampling Location:	BH-12		BH-12		BH-13		BH-14		BH-15		BH-16		BH-4	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Methylnaphthalene	91-57-6	8200	2.74		2.12		3.43		1.43		4.98		0.296		1.4	
Acenaphthene	83-32-9	66000	0.0966				0.0896									
Acenaphthylene	208-96-8	74000	0.14		0.104		0.103		0.253							
Acetophenone	98-86-2	2500									0.566					
Anthracene	120-12-7	610000	0.152		0.102				0.179		0.0876					
Benzo[a]anthracene	56-55-3	29	0.313		0.233		0.145		0.29		0.268		0.402		0.144	
Benzo[a]pyrene	50-32-8	2.9	0.237		0.182		0.115		0.2		0.178		0.358			
Benzo[b]fluoranthene	205-99-2	29	0.392		0.264		0.141		0.34		0.246		0.703		0.209	
Benzo[g,h,i]perylene	191-24-2	23000	0.123		0.0867				0.11		0.0899		0.281			
Benzo[k]fluoranthene	207-08-9	290	0.129		0.129				0.108		0.0883		0.226			
Biphenyl	92-52-4	220													1.3	
Chrysene	218-01-9	2900	0.312		0.222		0.183		0.256		0.325		0.429		0.434	
Dibenzofuran	132-64-9	2000	0.712		0.554		0.765		0.442		1.23				2.14	
Fluoranthene	206-44-0	30000	0.604		0.407		0.161		0.606		0.315		0.587		0.641	
Fluorene	86-73-7	57000	0.0952		0.0819		0.0966		0.211						0.101	
Indeno[1,2,3-cd]pyrene	193-39-5	29	0.122		0.104				0.118				0.257			
Naphthalene	91-20-3	180	1.92		1.41		2.45		1.03		3.68		0.344		1.42	
Phenanthrene	85-01-8	610000	1.26		0.921		1.21		1.09		1.72		0.33		1.7	
Pyrene	129-00-0	58000	0.519		0.375		0.212		0.433		0.422		0.482		0.293	

Table B11 - Subsurface Soil Samples
PCB Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-17		SBS-20		SBS-21		SBS-5		SBS-7	
		Sampling Location:	BH-17		BH-20		BH-21		BH-5		BH-7	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/5/2014		5/15/2014		5/15/2014		5/6/2014		5/15/2014	
		Date Analyzed:	5/9/2014		6/2/2014		6/2/2014		5/15/2014		6/2/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1016	12674-11-2	50	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1221	11104-28-2	12	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1232	11141-16-5	12	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1242	53469-21-9	10	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1248	12672-29-6	10	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1254	11097-69-1	10	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1260	11096-82-5	10	0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1262	37324-23-5		0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U
PCB-1268	11100-14-4		0.0443	U	0.0411	U	0.0399	U	0.0331	U	0.0398	U

Table B11 - Subsurface Soil Samples
PCB Compounds

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-8		SBS-9	
		Sampling Location:	BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/15/2014	
		Date Analyzed:	6/2/2014		6/2/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q
PCB-1016	12674-11-2	50	0.04	U	0.0419	U
PCB-1221	11104-28-2	12	0.04	U	0.0419	U
PCB-1232	11141-16-5	12	0.04	U	0.0419	U
PCB-1242	53469-21-9	10	0.04	U	0.0419	U
PCB-1248	12672-29-6	10	0.04	U	0.0419	U
PCB-1254	11097-69-1	10	0.04	U	0.0419	U
PCB-1260	11096-82-5	10	0.04	U	0.0419	U
PCB-1262	37324-23-5		0.04	U	0.0419	U
PCB-1268	11100-14-4		0.04	U	0.0419	U

Table B12 - Subsurface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/22/2014		5/29/2014		5/22/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	9370	J	36800		8070	J	3500		3610		4350		968	
Antimony	7440-36-0	820	23.8	U	89.5	U	23.3	U	22.4	U	23.8	U	24.5	U	23.9	U
Arsenic	7440-38-2	27	10.6		17.9	U	8.72		**35.8**		**42.5**		**35.8**		**35.6**	
Barium	7440-39-3	360000	115		822		103		23.2		26.7		25.5		17.2	
Beryllium	7440-41-7	3900	2.38	U	4.47	J	2.33	U	2.24	U	2.38	U	1.03	J	2.39	U
Cadmium	7440-43-9	800	2.38	U	8.95	U	2.33	U	2.24	U	2.38	U	2.45	U	2.39	U
Calcium	7440-70-2		1910		226000	B	2750		3250	B	3600	B	2300	B	1360	U
Chromium	7440-47-3		16.2		8.95	U	13.3		8.63	J	22.3	J	9.42		8.4	
Cobalt	7440-48-4	600	12.1		17.9	U	11.7		4.65		5.85		3.48	J	3.29	J
Copper	7440-50-8	82000	18.7		17.9	U	21.4		47.9		50.1		60.3		33.8	
Iron	7439-89-6	1000000	32300		7820		33600		34400		39000		41100		46200	
Lead	7439-92-1	1000	19.4		8.95	U	23.1		70.5	J	28.9	J	10.3		17.6	
Magnesium	7439-95-4		2250	J	19100		1690	J	312	J	483		491	U	477	U
Manganese	7439-96-5	72000	684	J	1180		1090	J	80.3		97.3		55.8		20.9	
Nickel	7440-02-0	38000	22.3		17.9	U	20.5		12.3		18.5		11.5		8.78	
Potassium	7440-09-7		949	J	1410	J	696	J	307	J	428	J	620		398	J
Selenium	7782-49-2	10000	4.75	U	17.9	U	4.66	U	4.47	U	4.76	U	4.91	U	4.77	U
Silver	7440-22-4	10000	2.38	U	8.95	U	2.33	U	2.24	U	2.38	U	2.45	U	2.39	U
Sodium	7440-23-5		475	U	1790	U	466	U	447	U	476	U	491	U	477	U
Thallium	7440-28-0	20	4.75	U	17.9	U	4.66	U	4.47	U	4.76	U	4.91	U	4.77	U
Vanadium	7440-62-2	140	20.5	J	89.5	U	15.9	J	9.35	J	15.1	J	15.4	J	10.9	J
Zinc	7440-66-6	610000	71.5		89.5	U	96.7		69.8		42.7		39.9		23.9	U
Chromium, hex	18540-29-9	110														
Mercury	7439-97-6	610	0.11	J	0.172	U	0.0512	J	0.556	J	0.0754	J	0.109	J	0.0908	J

Table B12 - Subsurface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-15		SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19	
		Sampling Location:	BH-15		BH-16		BH-16		BH-17		BH-18		BH-18		BH-19	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/13/2014		5/22/2014		5/22/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	3200		15100		9510		6950		8660		8040		2800	
Antimony	7440-36-0	820	63.9	U	13.5	J	24.1	U	12.9	U	23.7	U	24.8	U	23.5	U
Arsenic	7440-38-2	27	26.1		11.6	J	10.1		9.64		12.9		12		8.75	
Barium	7440-39-3	360000	129		222		74.4		75.8		113		116		45.7	
Beryllium	7440-41-7	3900	6.39	U	2.74	J	2.41	U	0.232	J	2.37	U	2.48	U	2.35	U
Cadmium	7440-43-9	800	6.39	U	0.997	J	2.41	U	0.283	J	2.37	U	2.48	U	2.35	U
Calcium	7440-70-2		19400		57100	B	1280	U	7560		1310		1270		357	U
Chromium	7440-47-3		27.1		81		19.1		10.1		15.6		14.5		20.4	
Cobalt	7440-48-4	600	12.8	U	10.5	J	10.3		8.5		7.4		6.94		3.62	J
Copper	7440-50-8	82000	348		263		19.5		16.8		22		20.3		21.8	
Iron	7439-89-6	1000000	106000		71600		33700		20600	B	37200		34000		54500	
Lead	7439-92-1	1000	182		**2070**		12.9		11.7		20.6		19.9		14.4	
Magnesium	7439-95-4		1280	U	6630		1720		5520		2020		1930		512	
Manganese	7439-96-5	72000	201		1370		343		437		327	B	314	B	132	
Nickel	7440-02-0	38000	9.84	J	116		19.5		18.4		21.3		20.1		7.05	
Potassium	7440-09-7		818	J	2120		1260		819		829		871		663	
Selenium	7782-49-2	10000	12.8	U	12.5	U	4.82	U	4.9	U	4.74	U	4.95	U	4.7	U
Silver	7440-22-4	10000	6.39	U	6.23	U	2.41	U	1.29	U	2.37	U	2.48	U	2.35	U
Sodium	7440-23-5		1280	U	1250	U	482	U	58.1	J	474	U	495	U	470	U
Thallium	7440-28-0	20	12.8	U	12.5	U	4.82	U	2.58	U	4.74	U	4.95	U	4.7	U
Vanadium	7440-62-2	140	18.5	J	26.7	J	20.3	J	13.5		20.6	J	18	J	16.2	J
Zinc	7440-66-6	610000	80.5		1110		172		57.8	B	101		101		32.9	
Chromium, hex	18540-29-9	110							6.73	U						
Mercury	7439-97-6	610	0.129		0.134		0.117	U	0.132	UJ	0.122	U	0.123	U	0.117	U

Table B12 - Subsurface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-2-1		SBS-2-2		SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6	
		Sampling Location:	BH-2		BH-2		BH-3		BH-4		BH-4		BH-5		BH-6	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014		5/21/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	22400		6890		7470		4960		6930		7220		7350	
Antimony	7440-36-0	820	36.8	U	24.7	U	23.5	U	172		23.1	U	24.6	U	23.6	U
Arsenic	7440-38-2	27	7.36	U	10.1		7.81		**39.3**		10.7		10.8		9.7	
Barium	7440-39-3	360000	235		68.2		47.6		102		53		83.4		63.4	
Beryllium	7440-41-7	3900	3.31	J	2.47	U	2.35	U	6.25	U	2.31	U	0.887	U	2.36	U
Cadmium	7440-43-9	800	3.68	U	2.47	U	2.35	U	2	J	2.31	U	2.46	U	2.36	U
Calcium	7440-70-2		127000	B	404	U	1010	U	6160	B	593	U	878	B	501	U
Chromium	7440-47-3		4.42		11.6		14.4		158		11.9		11.9		11.8	
Cobalt	7440-48-4	600	7.36	U	10.6		8.94		12.5	U	10.5		13.9		6.88	
Copper	7440-50-8	82000	7.36	U	14.9		12.1		555		14.9		17.7		16.4	
Iron	7439-89-6	1000000	16300		27900		24300		98900		31000		28200		30100	
Lead	7439-92-1	1000	3.68	U	12		9.46		**28900**		12.7		12.2	J	15.4	
Magnesium	7439-95-4		10300		1500		1660		1180	J	1410		1750		1650	
Manganese	7439-96-5	72000	831		603		385		391		627		978	J+	284	
Nickel	7440-02-0	38000	7.36	U	16.4		17.1		37.3		15.4		22.8		16.9	
Potassium	7440-09-7		736	U	809		491		688	J	597		655		535	
Selenium	7782-49-2	10000	7.36	U	4.95	U	4.71	U	12.5	U	4.63	U	4.93	R	4.71	U
Silver	7440-22-4	10000	3.68	U	2.47	U	2.35	U	4.5	J	2.31	U	2.46	U	2.36	U
Sodium	7440-23-5		736	U	495	U	471	U	1250	U	463	U	67.6	U	471	U
Thallium	7440-28-0	20	7.36	U	4.95	U	4.71	U	12.5	U	4.63	U	4.93	U	4.71	U
Vanadium	7440-62-2	140	12.3	J	15.1	J	13.4	J	13.9	J	14.9	J	18.5	J	15.9	J
Zinc	7440-66-6	610000	36.8	U	56.1		51.3		4390		82.1		75.3		185	
Chromium, hex	18540-29-9	110							6.3	U	5.91	U			5.94	U
Mercury	7439-97-6	610	0.182	U	0.124	U	0.122	U	0.337		0.117	U	0.121	UJ	0.118	U

Table B12 - Subsurface Soil Samples
Metals

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/22/2014		5/22/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	8040	J	9340	J	14600	J	22000	
Antimony	7440-36-0	820	24.2	U	24.1	U	23.5	U	25.1	U
Arsenic	7440-38-2	27	11.7		12.2		17.6		13	
Barium	7440-39-3	360000	99.3		112		188		185	
Beryllium	7440-41-7	3900	2.42	U	2.41	U	1.18	J	1.31	J
Cadmium	7440-43-9	800	2.42	U	2.41	U	2.35	U	2.51	U
Calcium	7440-70-2		2010		2120		4000		3620	
Chromium	7440-47-3		14.6		16.5		23.2		29.4	
Cobalt	7440-48-4	600	11		13.7		20.6		17.4	
Copper	7440-50-8	82000	21.9		21.8		36.1		30.5	
Iron	7439-89-6	1000000	30600		30600		49500		38400	
Lead	7439-92-1	1000	19.3		19.2		33.2		24.1	
Magnesium	7439-95-4		2210	J	2370	J	4540	J	5480	
Manganese	7439-96-5	72000	479	J	673	J	1280	J	768	B
Nickel	7440-02-0	38000	22		23.3		40.5		37	
Potassium	7440-09-7		924	J	1050	J	2250	J	4550	
Selenium	7782-49-2	10000	4.83	U	4.83	U	4.71	U	5.03	U
Silver	7440-22-4	10000	2.42	U	2.41	U	2.35	U	2.51	U
Sodium	7440-23-5		483	U	483	U	471	U	503	U
Thallium	7440-28-0	20	4.83	U	4.83	U	4.71	U	5.03	U
Vanadium	7440-62-2	140	20.3	J	19.9	J	27.5		34.2	
Zinc	7440-66-6	610000	69.2		70.9		100		87	
Chromium, hex	18540-29-9	110								
Mercury	7439-97-6	610	0.0422	J	0.0376	J	0.0527	J	0.0486	J

Table B12-A - Subsurface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-1		SBS-10		SBS-11		SBS-12		SBS-12-A		SBS-13		SBS-14	
		Sampling Location:	BH-1		BH-10		BH-11		BH-12		BH-12		BH-13		BH-14	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/14/2014		5/15/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014	
		Date Analyzed:	5/22/2014		5/29/2014		5/22/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	9370	J	36800		8070	J	3500		3610		4350		968	
Antimony	7440-36-0	820														
Arsenic	7440-38-2	27	10.6				8.72		**35.8**		**42.5**		**35.8**		**35.6**	
Barium	7440-39-3	360000	115		822		103		23.2		26.7		25.5		17.2	
Beryllium	7440-41-7	3900			4.47	J							1.03	J		
Cadmium	7440-43-9	800														
Calcium	7440-70-2		1910		226000	B	2750		3250	B	3600	B	2300	B		
Chromium	7440-47-3		16.2				13.3		8.63	J	22.3	J	9.42		8.4	
Cobalt	7440-48-4	600	12.1				11.7		4.65		5.85		3.48	J	3.29	J
Copper	7440-50-8	82000	18.7				21.4		47.9		50.1		60.3		33.8	
Iron	7439-89-6	1000000	32300		7820		33600		34400		39000		41100		46200	
Lead	7439-92-1	1000	19.4				23.1		70.5	J	28.9	J	10.3		17.6	
Magnesium	7439-95-4		2250	J	19100		1690	J	312	J	483					
Manganese	7439-96-5	72000	684	J	1180		1090	J	80.3		97.3		55.8		20.9	
Nickel	7440-02-0	38000	22.3				20.5		12.3		18.5		11.5		8.78	
Potassium	7440-09-7		949	J	1410	J	696	J	307	J	428	J	620		398	J
Selenium	7782-49-2	10000														
Silver	7440-22-4	10000														
Sodium	7440-23-5															
Vanadium	7440-62-2	140	20.5	J			15.9	J	9.35	J	15.1	J	15.4	J	10.9	J
Zinc	7440-66-6	610000	71.5				96.7		69.8		42.7		39.9			
Mercury	7439-97-6	610	0.11	J			0.0512	J	0.556	J	0.0754	J	0.109	J	0.0908	J

Table B12-A - Subsurface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-15		SBS-16-1		SBS-16-2		SBS-17		SBS-18		SBS-18-A		SBS-19	
		Sampling Location:	BH-15		BH-16		BH-16		BH-17		BH-18		BH-18		BH-19	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/5/2014		5/15/2014		5/15/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/13/2014		5/22/2014		5/22/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	3200		15100		9510		6950		8660		8040		2800	
Antimony	7440-36-0	820			13.5	J										
Arsenic	7440-38-2	27	26.1		11.6	J	10.1		9.64		12.9		12		8.75	
Barium	7440-39-3	360000	129		222		74.4		75.8		113		116		45.7	
Beryllium	7440-41-7	3900			2.74	J			0.232	J						
Cadmium	7440-43-9	800			0.997	J			0.283	J						
Calcium	7440-70-2		19400		57100	B			7560		1310		1270			
Chromium	7440-47-3		27.1		81		19.1		10.1		15.6		14.5		20.4	
Cobalt	7440-48-4	600			10.5	J	10.3		8.5		7.4		6.94		3.62	J
Copper	7440-50-8	82000	348		263		19.5		16.8		22		20.3		21.8	
Iron	7439-89-6	1000000	106000		71600		33700		20600	B	37200		34000		54500	
Lead	7439-92-1	1000	182		**2070**		12.9		11.7		20.6		19.9		14.4	
Magnesium	7439-95-4				6630		1720		5520		2020		1930		512	
Manganese	7439-96-5	72000	201		1370		343		437		327	B	314	B	132	
Nickel	7440-02-0	38000	9.84	J	116		19.5		18.4		21.3		20.1		7.05	
Potassium	7440-09-7		818	J	2120		1260		819		829		871		663	
Selenium	7782-49-2	10000														
Silver	7440-22-4	10000														
Sodium	7440-23-5								58.1	J						
Vanadium	7440-62-2	140	18.5	J	26.7	J	20.3	J	13.5		20.6	J	18	J	16.2	J
Zinc	7440-66-6	610000	80.5		1110		172		57.8	B	101		101		32.9	
Mercury	7439-97-6	610	0.129		0.134											

Table B12-A - Subsurface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-2-1		SBS-2-2		SBS-3		SBS-4-1		SBS-4-2		SBS-5		SBS-6	
		Sampling Location:	BH-2		BH-2		BH-3		BH-4		BH-4		BH-5		BH-6	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/14/2014		5/6/2014		5/14/2014	
		Date Analyzed:	5/29/2014		5/29/2014		5/29/2014		5/29/2014		5/29/2014		5/21/2014		5/29/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	22400		6890		7470		4960		6930		7220		7350	
Antimony	7440-36-0	820							172							
Arsenic	7440-38-2	27			10.1		7.81		**39.3**		10.7		10.8		9.7	
Barium	7440-39-3	360000	235		68.2		47.6		102		53		83.4		63.4	
Beryllium	7440-41-7	3900	3.31	J												
Cadmium	7440-43-9	800							2	J						
Calcium	7440-70-2		127000	B					6160	B			878	B		
Chromium	7440-47-3		4.42		11.6		14.4		158		11.9		11.9		11.8	
Cobalt	7440-48-4	600			10.6		8.94				10.5		13.9		6.88	
Copper	7440-50-8	82000			14.9		12.1		555		14.9		17.7		16.4	
Iron	7439-89-6	1000000	16300		27900		24300		98900		31000		28200		30100	
Lead	7439-92-1	1000			12		9.46		**28900**		12.7		12.2	J	15.4	
Magnesium	7439-95-4		10300		1500		1660		1180	J	1410		1750		1650	
Manganese	7439-96-5	72000	831		603		385		391		627		978	J+	284	
Nickel	7440-02-0	38000			16.4		17.1		37.3		15.4		22.8		16.9	
Potassium	7440-09-7				809		491		688	J	597		655		535	
Selenium	7782-49-2	10000											4.93	R		
Silver	7440-22-4	10000							4.5	J						
Sodium	7440-23-5															
Vanadium	7440-62-2	140	12.3	J	15.1	J	13.4	J	13.9	J	14.9	J	18.5	J	15.9	J
Zinc	7440-66-6	610000			56.1		51.3		4390		82.1		75.3		185	
Mercury	7439-97-6	610							0.337							

Table B12-A - Subsurface Soil Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds WV DeMinimis Standard

		Sample #:	SBS-7		SBS-7A		SBS-8		SBS-9	
		Sampling Location:	BH-7		BH-7		BH-8		BH-9	
		Matrix:	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
		Date Analyzed:	5/22/2014		5/22/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	WV DeMinimis 2014 - Ind Soil (mg/kg)	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	1000000	8040	J	9340	J	14600	J	22000	
Antimony	7440-36-0	820								
Arsenic	7440-38-2	27	11.7		12.2		17.6		13	
Barium	7440-39-3	360000	99.3		112		188		185	
Beryllium	7440-41-7	3900					1.18	J	1.31	J
Cadmium	7440-43-9	800								
Calcium	7440-70-2		2010		2120		4000		3620	
Chromium	7440-47-3		14.6		16.5		23.2		29.4	
Cobalt	7440-48-4	600	11		13.7		20.6		17.4	
Copper	7440-50-8	82000	21.9		21.8		36.1		30.5	
Iron	7439-89-6	1000000	30600		30600		49500		38400	
Lead	7439-92-1	1000	19.3		19.2		33.2		24.1	
Magnesium	7439-95-4		2210	J	2370	J	4540	J	5480	
Manganese	7439-96-5	72000	479	J	673	J	1280	J	768	B
Nickel	7440-02-0	38000	22		23.3		40.5		37	
Potassium	7440-09-7		924	J	1050	J	2250	J	4550	
Selenium	7782-49-2	10000								
Silver	7440-22-4	10000								
Sodium	7440-23-5									
Vanadium	7440-62-2	140	20.3	J	19.9	J	27.5		34.2	
Zinc	7440-66-6	610000	69.2		70.9		100		87	
Mercury	7439-97-6	610	0.0422	J	0.0376	J	0.0527	J	0.0486	J

Table B13 - Surface Water Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/9/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	11	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	610	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	1200	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	47	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	25	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	8	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	24	0.5	U	0.5	U	0.5	U	0.5	UJ
1,2-Dibromo-3-Chloropropane	96-12-8		5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4		0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	0.7	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	100	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5		0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	150	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	26	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dioxane	123-91-1		200	U	200	U	200	U	200	U
2-Butanone (MEK)	78-93-3	14000	50	U	50	U	50	U	50	U
2-Hexanone	591-78-6	99	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	170	5	U	5	U	5	U	5	U
Acetone	67-64-1	1500	5	U	5	U	5	U	5	U
Benzene	71-43-2	370	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	320	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9		0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	0.92	0.277	J	0.27	J	0.5	U	0.286	J
Carbon tetrachloride	56-23-5	13.3	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	1.3	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	74-97-5		0.5	U	0.5	U	0.5	U	0.5	U
Chlorodibromomethane	124-48-1		0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3		0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	67-66-3	1.8	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3		0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2		0.5	U	0.5	U	0.5	U	0.5	U

Table B13 - Surface Water Samples
Volatile Organic Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/9/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q	Result	Q
cis-1,3-Dichloropropene	10061-01-5		0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7		1	U	1	U	1	U	1	U
Dichlorobromomethane	75-27-4		0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8		0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	90	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	2.6	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9		10	U	10	U	10	U	10	U
Methyl tert-butyl ether	1634-04-4	11070	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2		0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	98.1	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	179601-23-1		0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	95-47-6		0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	72	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	111	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	2	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	156-60-5	970	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6		0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	21	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4		0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	930	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	1330-20-7	13	1.5	U	1.5	U	1.5	U	1.5	U

Table B13-A - Surface Water Samples
Volatile Organic Compounds
(Detections Only)

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-3	
		Sampling Location:	SW-1		SW-1		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q
Carbon disulfide	75-15-0	0.92	0.277	J	0.27	J	0.286	J

Table B14 - Surface Water Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/13/2014		5/13/2014		5/13/2014		5/15/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	3	10	U	8.93	U	8.93	U	10	U
2,3,4,6-Tetrachlorophenol	58-90-2	1.2	10	U	8.93	U	8.93	U	10	U
2,4,5-Trichlorophenol	95-95-4		25	U	22.3	U	22.3	U	25	U
2,4,6-Trichlorophenol	88-06-2	4.9	10	U	8.93	U	8.93	U	10	U
2,4-Dichlorophenol	120-83-2	11	10	U	8.93	U	8.93	U	10	U
2,4-Dimethylphenol	105-67-9		10	U	8.93	U	8.93	U	10	U
2,4-Dinitrophenol	51-28-5		25	U	22.3	U	22.3	U	25	U
2,4-Dinitrotoluene	121-14-2	44	10	U	8.93	U	8.93	U	10	U
2,6-Dinitrotoluene	606-20-2	81	10	U	8.93	U	8.93	U	10	U
2-Chloronaphthalene	91-58-7		10	U	8.93	U	8.93	U	10	U
2-Chlorophenol	95-57-8	24	10	U	8.93	U	8.93	U	10	U
2-Methylnaphthalene	91-57-6	4.7	2	U	1.79	U	1.79	U	2	U
2-Methylphenol	95-48-7	13	10	U	8.93	U	8.93	U	10	U
2-Nitroaniline	88-74-4		25	U	22.3	U	22.3	U	25	U
2-Nitrophenol	88-75-5	1920	10	U	8.93	U	8.93	U	10	U
3 & 4 Methylphenol	MEPH3MEPH		10	U	8.93	U	8.93	U	10	U
3,3-Dichlorobenzidine	91-94-1	4.5	10	U	8.93	U	8.93	U	10	U
3-Nitroaniline	99-09-2		25	U	22.3	U	22.3	U	25	U
4,6-Dinitro-2-methylphenol	534-52-1		25	U	22.3	U	22.3	U	25	U
4-Bromophenyl phenyl ether	101-55-3	1.5	10	U	8.93	U	8.93	U	10	U
4-Chloro-3-methylphenol	59-50-7		10	U	8.93	U	8.93	U	10	U
4-Chloroaniline	106-47-8	232	10	U	8.93	U	8.93	U	10	U
4-Chlorophenyl phenyl ether	7005-72-3		10	U	8.93	U	8.93	U	10	U
4-Nitroaniline	100-01-6		25	U	22.3	U	22.3	U	25	U
4-Nitrophenol	100-02-7	60	25	U	22.3	U	22.3	U	25	U
Acenaphthene	83-32-9	5.8	2	U	1.79	U	1.79	U	2	U
Acenaphthylene	208-96-8		2	U	1.79	U	1.79	U	2	U
Acetophenone	98-86-2		10	U	8.93	U	8.93	U	10	U
Anthracene	120-12-7	0.012	2	U	1.79	U	1.79	U	2	U
Atrazine	1912-24-9	1.8	10	U	8.93	U	8.93	U	10	U
Benzaldehyde	100-52-7		10	U	8.93	U	8.93	U	10	U
Benzo[a]anthracene	56-55-3	0.018	2	U	1.79	U	1.79	U	2	U
Benzo[a]pyrene	50-32-8	0.015	2	U	1.79	U	1.79	U	2	U
Benzo[b]fluoranthene	205-99-2		2	U	1.79	U	1.79	U	2	U

Table B14 - Surface Water Samples
Semi-Volatile Organic Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/13/2014		5/13/2014		5/13/2014		5/15/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q	Result	Q
Benzo[g,h,i]perylene	191-24-2		2	U	1.79	U	1.79	U	2	U
Benzo[k]fluoranthene	207-08-9		2	U	1.79	U	1.79	U	2	U
Biphenyl	92-52-4	14	10	U	8.93	U	8.93	U	10	U
bis (2-chloroisopropyl) ether	108-60-1		10	U	8.93	U	8.93	U	10	U
Bis(2-chloroethoxy)methane	111-91-1		10	U	8.93	U	8.93	U	10	U
Bis(2-chloroethyl)ether	111-44-4		10	U	8.93	U	8.93	U	10	U
Bis(2-ethylhexyl) phthalate	117-81-7	16	11.2	U	11.8	U	8.93	U	10	U
Butyl benzyl phthalate	85-68-7	19	10	U	8.93	U	8.93	U	10	U
Caprolactam	105-60-2		10	U	8.93	U	8.93	U	10	U
Carbazole	86-74-8		10	U	8.93	U	8.93	U	10	U
Chrysene	218-01-9		2	U	1.79	U	1.79	U	2	U
Dibenz(a,h)anthracene	53-70-3		2	U	1.79	U	1.79	U	2	U
Dibenzofuran	132-64-9	3.7	10	U	8.93	U	8.93	U	10	U
Diethyl phthalate	84-66-2	210	10	U	8.93	U	8.93	U	10	U
Dimethyl phthalate	131-11-3		10	U	8.93	U	8.93	U	10	U
Di-n-butyl phthalate	84-74-2	19	10	U	8.93	U	8.93	U	10	U
Di-n-octyl phthalate	117-84-0	22	10	U	8.93	U	8.93	U	10	U
Fluoranthene	206-44-0	0.04	2	U	1.79	U	1.79	U	2	U
Fluorene	86-73-7	3	2	U	1.79	U	1.79	U	2	U
Hexachlorobenzene	118-74-1	0.0003	10	U	8.93	U	8.93	U	10	U
Hexachlorobutadiene	87-68-3	1.3	10	U	8.93	U	8.93	U	10	U
Hexachlorocyclopentadiene	77-47-4		10	U	8.93	U	8.93	U	10	U
Hexachloroethane	67-72-1	12	10	U	8.93	U	8.93	U	10	U
Indeno[1,2,3-cd]pyrene	193-39-5		2	U	1.79	U	1.79	U	2	U
Isophorone	78-59-1		10	U	8.93	U	8.93	U	10	U
Naphthalene	91-20-3	1.1	2	U	1.79	U	1.79	U	2	U
Nitrobenzene	98-95-3		10	U	8.93	U	8.93	U	10	U
N-Nitrosodi-n-propylamine	621-64-7		10	U	8.93	U	8.93	U	10	U
n-Nitrosodiphenylamine(as diphenylamine	86-30-6	210	10	U	8.93	U	8.93	U	10	U
Pentachlorophenol	87-86-5	0.5	25	U	22.3	U	22.3	U	25	U
Phenanthrene	85-01-8	0.4	2	U	1.79	U	1.79	U	2	U
Phenol	108-95-2	4	10	U	8.93	U	8.93	U	10	U
Pyrene	129-00-0	0.025	2	U	1.79	U	1.79	U	2	U

Table B15 - Surface Water Samples
PAH Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/9/2014		5/9/2014		5/9/2014	
Parameter	CAS No.	BTAG ug/L	Result	Q	Result	Q	Result	Q	Result	Q
1-Methylnaphthalene	90-12-0	2.1	0.0971	U	0.098	U	0.098	U	0.0966	U
2-Methylnaphthalene	91-57-6	4.7	0.0971	U	0.098	U	0.098	U	0.0966	U
Acenaphthene	83-32-9	5.8	0.0971	U	0.098	U	0.098	U	0.0966	U
Acenaphthylene	208-96-8		0.0971	U	0.098	U	0.098	U	0.0966	U
Anthracene	120-12-7	0.012	0.0971	U	0.098	U	0.098	U	0.0966	U
Benzo[a]anthracene	56-55-3	0.018	0.0971	U	0.098	U	0.098	UJ	0.0966	U
Benzo[a]pyrene	50-32-8	0.015	0.0971	U	0.098	U	0.098	UJ	0.0966	U
Benzo[b]fluoranthene	205-99-2		0.0971	U	0.098	U	0.098	UJ	0.0966	U
Benzo[g,h,i]perylene	191-24-2		0.0971	U	0.098	U	0.098	UJ	0.0966	U
Benzo[k]fluoranthene	207-08-9		0.0971	U	0.098	U	0.098	UJ	0.0966	U
Chrysene	218-01-9		0.0971	U	0.098	U	0.098	U	0.0966	U
Dibenz(a,h)anthracene	53-70-3		0.0971	U	0.098	U	0.098	UJ	0.0966	U
Fluoranthene	206-44-0	0.04	0.0971	U	0.098	U	0.098	U	0.0966	U
Fluorene	86-73-7	3	0.0971	U	0.098	U	0.098	U	0.0966	U
Indeno[1,2,3-cd]pyrene	193-39-5		0.0971	U	0.098	U	0.098	UJ	0.0966	U
Naphthalene	91-20-3	1.1	0.0971	U	0.098	U	0.098	U	0.0966	U
Phenanthrene	85-01-8	0.4	0.0971	U	0.098	U	0.098	U	0.0966	U
Pyrene	129-00-0	0.025	0.0971	U	0.098	U	0.098	U	0.0966	U

Table B16 - Surface Water Samples
Metals

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
Parameter	CAS No.	BTAG mg/L	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	0.087	**0.378**	J-	**0.195**	J-	**0.196**	J-	**8.76**	J-
Antimony	7440-36-0	0.03	0.002	UJ	0.000566	UJ	0.000667	UJ	0.000504	UJ
Arsenic	7440-38-2	0.005	0.00307	J	0.00304	J	0.00106	J	**0.00576**	J
Barium	7440-39-3	0.004	**0.0439**	J-	**0.044**	J-	**0.0386**	J-	**0.0764**	J-
Beryllium	7440-41-7	0.00066	0.002	UJ	0.002	UJ	0.002	UJ	0.000605	J
Cadmium	7440-43-9	0.00025	0.001	UJ	0.001	UJ	0.001	UJ	0.001	UJ
Calcium	7440-70-2	116	56.3	J	59.8	J	**136**	J	94.4	J
Chromium	7440-47-3	0.085	0.00095	J	0.000758	J	0.002	UJ	0.00812	J
Cobalt	7440-48-4	0.023	0.000928	J-	0.000839	J-	0.00232	J-	0.00521	J-
Copper	7440-50-8	0.009	0.003	J-	0.00129	J-	0.000847	J-	**0.0111**	J
Iron	7439-89-6	0.3	**1.41**	J-	**1.2**	J-	**0.73**	J-	**13.4**	J-
Lead	7439-92-1	0.0025	0.00128	J	0.000858	J	0.002	UJ	**0.00715**	J
Magnesium	7439-95-4	82	10.2	J-	10.8	J-	30.1	J-	24.4	J-
Manganese	7439-96-5	0.12	**0.275**	J-	**0.276**	J-	**0.349**	J-	**0.275**	J-
Nickel	7440-02-0	0.052	0.00178	J-	0.00144	J-	0.0101	J-	0.0137	J-
Potassium	7440-09-7	53	5.82	J-	6.13	J-	2.94	J-	3.8	J-
Selenium	7782-49-2	0.001	0.000626	J	0.002	UJ	0.002	UJ	**0.00147**	J
Silver	7440-22-4	0.0032	0.002	UJ	0.002	UJ	0.002	UJ	0.002	J
Sodium	7440-23-5	680	4.12	J-	4.56	J-	10.5	J-	4.05	J-
Thallium	7440-28-0	0.0008	0.002	UJ	0.002	UJ	0.000364	J	0.000306	J
Vanadium	7440-62-2	0.02	0.00208	UJ	0.00191	UJ	0.00179	UJ	0.0115	J
Zinc	7440-66-6	0.12	0.025	U	0.025	U	0.025	U	0.0365	
Mercury	7439-97-6	0.000026	0.0002	U	0.0002	U	0.0002	U	0.0002	U

Table B16-A - Surface Water Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds BTAG Freshwater Benchmark

		Sample #:	SW-1		SW-1A		SW-2		SW-3	
		Sampling Location:	SW-1		SW-1		SW-2		SW-3	
		Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
		Units:	mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/15/2014		5/15/2014		5/15/2014		5/15/2014	
Parameter	CAS No.	BTAG mg/L	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	0.087	**0.378**	J-	**0.195**	J-	**0.196**	J-	**8.76**	J-
Arsenic	7440-38-2	0.005	0.00307	J	0.00304	J	0.00106	J	**0.00576**	J
Barium	7440-39-3	0.004	**0.0439**	J-	**0.044**	J-	**0.0386**	J-	**0.0764**	J-
Beryllium	7440-41-7	0.00066							0.000605	J
Calcium	7440-70-2	116	56.3	J	59.8	J	**136**	J	94.4	J
Chromium	7440-47-3	0.085	0.00095	J	0.000758	J			0.00812	J
Cobalt	7440-48-4	0.023	0.000928	J-	0.000839	J-	0.00232	J-	0.00521	J-
Copper	7440-50-8	0.009	0.003	J-	0.00129	J-	0.000847	J-	**0.0111**	J
Iron	7439-89-6	0.3	**1.41**	J-	**1.2**	J-	**0.73**	J-	**13.4**	J-
Lead	7439-92-1	0.0025	0.00128	J	0.000858	J			**0.00715**	J
Magnesium	7439-95-4	82	10.2	J-	10.8	J-	30.1	J-	24.4	J-
Manganese	7439-96-5	0.12	**0.275**	J-	**0.276**	J-	**0.349**	J-	**0.275**	J-
Nickel	7440-02-0	0.052	0.00178	J-	0.00144	J-	0.0101	J-	0.0137	J-
Potassium	7440-0-9-7	53	5.82	J-	6.13	J-	2.94	J-	3.8	J-
Selenium	7782-49-2	0.001	0.000626	J					**0.00147**	J
Silver	7440-22-4	0.0032							0.002	J
Sodium	7440-23-5	680	4.12	J-	4.56	J-	10.5	J-	4.05	J-
Thallium	7440-28-0	0.0008					0.000364	J	0.000306	J
Vanadium	7440-62-2	0.02							0.0115	J
Zinc	7440-66-6	0.12							0.0365	

Table B17 - Sediment Samples
Volatile Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/10/2014		5/10/2014		5/10/2014		5/10/2014		5/8/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	0.0302	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,1,2,2-Tetrachloroethane	79-34-5	1.36	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,1,2-Trichloroethane	79-00-5	1.24	0.00804	U	0.00753	U	0.00823	U	0.0136	U	0.00564	U
1,1-Dichloroethane	75-34-3		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,1-Dichloroethene	75-35-4	0.031	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,2,3-Trichlorobenzene	87-61-6	0.858	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,2,4-Trichlorobenzene	120-82-1	2.1	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,2-Dibromo-3-Chloropropane	96-12-8		0.00804	U	0.00753	U	0.00823	U	0.0136	U	0.00564	U
1,2-Dibromoethane (EDB)	106-93-4		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,2-Dichlorobenzene	95-50-1	0.0165	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,2-Dichloroethane	107-06-2		0.00322	UJ	0.00301	UJ	0.00329	UJ	0.00544	UJ	0.00226	U
1,2-Dichloropropane	78-87-5		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,3-Dichlorobenzene	541-73-1	4.43	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
1,4-Dichlorobenzene	106-46-7	0.599	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
2-Butanone (MEK)	78-93-3		0.0804	U	0.0753	U	0.0823	U	0.0208	J	0.0564	U
2-Hexanone	591-78-6		0.0804	U	0.0753	U	0.0823	U	0.136	U	0.0564	U
4-Methyl-2-pentanone (MIBK)	108-10-1		0.0804	U	0.0753	U	0.0823	U	0.136	U	0.0564	U
Acetone	67-64-1		0.0804	U	0.0753	U	0.0823	U	0.215		0.0564	U
Benzene	71-43-2		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Bromochloromethane	74-97-5		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Bromodichloromethane	75-27-4		0.00322	UJ	0.00301	UJ	0.00329	UJ	0.00544	UJ	0.00226	U
Bromoform	75-25-2	0.654	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Bromomethane	74-83-9		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Carbon disulfide	75-15-0	0.000851	0.00804	U	**0.0107**		0.00823	U	0.0136	U	0.00564	U
Carbon tetrachloride	56-23-5	0.0642	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Chlorobenzene	108-90-7	0.00842	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Chlorodibromomethane	124-48-1		0.00322	UJ	0.00301	UJ	0.00329	UJ	0.00544	UJ	0.00226	U
Chloroethane	75-00-3		0.00804	U	0.00753	U	0.00823	U	0.0136	U	0.00564	U
Chloroform	67-66-3		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Chloromethane	74-87-3		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
cis-1,2-Dichloroethene	156-59-2		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U

Table B17 - Sediment Samples
Volatile Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/10/2014		5/10/2014		5/10/2014		5/10/2014		5/8/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
cis-1,3-Dichloropropene	10061-01-5		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Cyclohexane	110-82-7		0.0161	U	0.0151	U	0.0165	U	0.0272	U	0.0113	U
Dichlorodifluoromethane	75-71-8		0.00322	UJ	0.00301	UJ	0.00329	UJ	0.00544	UJ	0.00226	UJ
Ethylbenzene	100-41-4	1.1	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Isopropylbenzene	98-82-8	0.086	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Methyl acetate	79-20-9		0.0161	UJ	0.0151	UJ	0.0165	UJ	0.0272	UJ	0.0113	UJ
Methyl tert-butyl ether	1634-04-4		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Methylcyclohexane	108-87-2		0.0161	U	0.0151	U	0.0165	U	0.0272	U	0.0113	U
Methylene Chloride	75-09-2		0.0161	U	0.00131	J	0.00172	J	0.00419	J	0.0113	U
Styrene	100-42-5	0.559	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Tetrachloroethene	127-18-4	0.468	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Toluene	108-88-3		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
trans-1,2-Dichloroethene	156-60-5	1.05	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
trans-1,3-Dichloropropene	10061-02-6		0.00322	UJ	0.00301	UJ	0.00329	UJ	0.00544	UJ	0.00226	U
Trichloroethene	79-01-6	0.0969	0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Trichlorofluoromethane	75-69-4		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Vinyl chloride	75-01-4		0.00322	U	0.00301	U	0.00329	U	0.00544	U	0.00226	U
Xylenes, Total	1330-20-7		0.00804	U	0.00753	U	0.00823	U	0.0136	U	0.00564	U

Table B17-A - Sediment Samples
Volatile Compounds
(Detections Only)

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1A		SD-2		SD-3	
		Sampling Location:	SD-1		SD-2		SD-3	
		Matrix:	Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014	
		Date Analyzed:	5/10/2014		5/10/2014		5/10/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q
2-Butanone (MEK)	78-93-3						0.0208	J
Acetone	67-64-1						0.215	
Carbon disulfide	75-15-0	0.000851	**0.0107**					
Methylene Chloride	75-09-2		0.00131	J	0.00172	J	0.00419	J

Table B18 - Sediment Samples
Semi-Volatile Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/10/2014		5/9/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	1.09	2.5	U	2.43	U	2.51	U	3.39	R	2.35	U
2,3,4,6-Tetrachlorophenol	58-90-2	0.284	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2,4,5-Trichlorophenol	95-95-4		1.25	U	1.21	U	1.25	U	1.69	U	1.17	U
2,4,6-Trichlorophenol	88-06-2	0.213	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2,4-Dichlorophenol	120-83-2	0.117	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2,4-Dimethylphenol	105-67-9	0.029	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2,4-Dinitrophenol	51-28-5		0.499	U	0.484	U	0.501	U	0.676	R	0.468	U
2,4-Dinitrotoluene	121-14-2	0.0416	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2,6-Dinitrotoluene	606-20-2		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2-Chloronaphthalene	91-58-7		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2-Chlorophenol	95-57-8	0.0312	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2-Methylnaphthalene	91-57-6	0.0202	**1.16**		**1**		0.101	U	**0.419**		**0.365**	
2-Methylphenol	95-48-7		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
2-Nitroaniline	88-74-4		1.25	U	1.21	U	1.25	U	1.69	U	1.17	U
2-Nitrophenol	88-75-5		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
3 & 4 Methylphenol	MEPH3MEPH4		0.549		0.484	U	0.501	U	0.676	U	0.468	U
3,3-Dichlorobenzidine	91-94-1	0.127	0.999	U	0.97	U	1	U	1.35	U	0.938	U
3-Nitroaniline	99-09-2		1.25	U	1.21	U	1.25	U	1.69	U	1.17	U
4,6-Dinitro-2-methylphenol	534-52-1		0.499	U	0.484	U	0.501	U	0.676	R	0.468	U
4-Bromophenyl phenyl ether	101-55-3	1.23	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
4-Chloro-3-methylphenol	59-50-7		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
4-Chloroaniline	106-47-8		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
4-Chlorophenyl phenyl ether	7005-72-3		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
4-Nitroaniline	100-01-6		1.25	U	1.21	U	1.25	U	1.69	U	1.17	U
4-Nitrophenol	100-02-7		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Acenaphthene	83-32-9	0.0067	**0.16**		**0.275**		0.101	U	0.136	U	0.0942	U
Acenaphthylene	208-96-8	0.0059	0.1	U	**0.189**		0.101	U	0.136	U	0.0942	U
Acetophenone	98-86-2		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Anthracene	120-12-7	0.0572	**0.181**	J	**0.875**	J	0.101	U	0.136	U	0.0942	U
Atrazine	1912-24-9	0.00662	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Benzaldehyde	100-52-7		2.5	U	2.43	U	2.51	U	3.39	U	2.35	U
Benzo[a]anthracene	56-55-3	0.108	**0.554**	J	**1.7**	J	0.101	U	**0.139**		0.0942	U
Benzo[a]pyrene	50-32-8	0.15	**0.715**	J	**1.65**	J	0.101	U	**0.156**		0.0942	U
Benzo[b]fluoranthene	205-99-2		0.845	J	1.97	J	0.101	U	0.254		0.0942	U
Benzo[g,h,i]perylene	191-24-2	0.17	**0.411**	J	**0.878**	J	0.101	U	0.139		0.0942	U
Benzo[k]fluoranthene	207-08-9	0.24	**0.306**	J	**0.786**	J	0.101	U	0.136	U	0.0942	U
Biphenyl	92-52-4	1.22	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U

Table B18 - Sediment Samples
Semi-Volatile Compounds

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/10/2014		5/9/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
bis (2-chloroisopropyl) ether	108-60-1		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Bis(2-chloroethoxy)methane	111-91-1		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Bis(2-chloroethyl)ether	111-44-4		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Bis(2-ethylhexyl) phthalate	117-81-7	0.18	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Butyl benzyl phthalate	85-68-7	10.9	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Caprolactam	105-60-2		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Carbazole	86-74-8		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Chrysene	218-01-9	0.166	**0.552**	J	**1.55**	J	0.101	U	**0.166**		0.0942	U
Dibenz(a,h)anthracene	53-70-3	0.033	0.1	U	**0.224**		0.101	U	0.136	U	0.0942	U
Dibenzofuran	132-64-9	0.415	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Diethyl phthalate	84-66-2	0.603	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Dimethyl phthalate	131-11-3		2.5	U	2.43	U	2.51	U	3.39	U	2.35	U
Di-n-butyl phthalate	84-74-2	6.47	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Di-n-octyl phthalate	117-84-0		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Fluoranthene	206-44-0	0.423	**0.946**	J	**4.13**	J	0.101	U	0.297		0.0942	U
Fluorene	86-73-7	0.0774	**0.121**		**0.319**		0.101	U	0.136	U	0.0942	U
Hexachlorobenzene	118-74-1	0.02	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Hexachlorobutadiene	87-68-3		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Hexachlorocyclopentadiene	77-47-4		0.499	U	0.484	U	0.501	U	0.676	R	0.468	U
Hexachloroethane	67-72-1	1.027	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Indeno[1,2,3-cd]pyrene	193-39-5	0.017	**0.392**	J	**0.812**	J	0.101	U	0.136	U	0.0942	U
Isophorone	78-59-1		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Naphthalene	91-20-3	0.176	**1.07**		**1.04**		0.101	U	**0.412**		**0.263**	
Nitrobenzene	98-95-3		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
N-Nitrosodi-n-propylamine	621-64-7		0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	2.68	0.499	U	0.484	U	0.501	U	0.676	U	0.468	U
Pentachlorophenol	87-86-5	0.504	1.25	U	1.21	U	1.25	U	1.69	U	1.17	U
Phenanthrene	85-01-8	0.204	**0.849**	J	**2.56**	J	0.101	U	**0.268**		**0.271**	
Phenol	108-95-2	0.42	**0.505**		0.484	U	0.501	U	0.676	U	0.468	U
Pyrene	129-00-0	0.195	**0.834**	J	**2.59**	J	0.101	U	**0.246**		0.0942	U

Table B18-A - Sediment Samples
Semi-Volatile Compounds
(Detections Only)

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/9/2014		5/10/2014		5/9/2014		5/10/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q
2-Methylnaphthalene	91-57-6	0.0202	**1.16**		**1**		**0.419**		**0.365**	
3 & 4 Methylphenol	MEPH3MEPH4		0.549							
Acenaphthene	83-32-9	0.0067	**0.16**		**0.275**					
Acenaphthylene	208-96-8	0.0059			**0.189**					
Anthracene	120-12-7	0.0572	**0.181**	J	**0.875**	J				
Benzo[a]anthracene	56-55-3	0.108	**0.554**	J	**1.7**	J	**0.139**			
Benzo[a]pyrene	50-32-8	0.15	**0.715**	J	**1.65**	J	**0.156**			
Benzo[b]fluoranthene	205-99-2		0.845	J	1.97	J	0.254			
Benzo[g,h,i]perylene	191-24-2	0.17	**0.411**	J	**0.878**	J	0.139			
Benzo[k]fluoranthene	207-08-9	0.24	**0.306**	J	**0.786**	J				
Chrysene	218-01-9	0.166	**0.552**	J	**1.55**	J	**0.166**			
Dibenz(a,h)anthracene	53-70-3	0.033			**0.224**					
Fluoranthene	206-44-0	0.423	**0.946**	J	**4.13**	J	0.297			
Fluorene	86-73-7	0.0774	**0.121**		**0.319**					
Indeno[1,2,3-cd]pyrene	193-39-5	0.017	**0.392**	J	**0.812**	J				
Naphthalene	91-20-3	0.176	**1.07**		**1.04**		**0.412**		**0.263**	
Phenanthrene	85-01-8	0.204	**0.849**	J	**2.56**	J	**0.268**		**0.271**	
Phenol	108-95-2	0.42	**0.505**							
Pyrene	129-00-0	0.195	**0.834**	J	**2.59**	J	**0.246**			

Table B19 - Sediment Samples
PCBs

		Sample #:	SD-3	
		Sampling Location:	SD-3	
		Matrix:	Sediment	
		Units:	mg/kg	
Yellow Highlight: Result Exceeds		Date Sampled:	5/6/2014	
BTAG Freshwater Sediment Benchmark		Date Analyzed:	5/15/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q
PCB-1016	12674-11-2		0.0333	U
PCB-1221	11104-28-2		0.0333	U
PCB-1232	11141-16-5		0.0333	U
PCB-1242	53469-21-9		0.0333	U
PCB-1248	12672-29-6		0.0333	U
PCB-1254	11097-69-1		0.0333	U
PCB-1260	11096-82-5		0.0333	U
PCB-1262	37324-23-5		0.0333	U
PCB-1268	11100-14-4		0.0333	U

Table B20 - Sediment Samples
Metals

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/21/2014		5/21/2014		5/21/2014		5/21/2014		5/14/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5		6520		4440		11200		11200		11000	
Antimony	7440-36-0	2	30.5	U	29.2	U	29.2	U	99.8	U	143	U
Arsenic	7440-38-2	9.8	**10**		**14.4**		**12.7**		**31.7**		**61.4**	J
Barium	7440-39-3		115		107		133		137		116	
Beryllium	7440-41-7		1.28	U	1.28	U	1.34	U	0.998	U	14.3	U
Cadmium	7440-43-9	0.99	0.489	U	0.467	U	0.467	U	9.98	U	14.3	U
Calcium	7440-70-2		10100	B	8010		14100	B	2370	B	41100	
Chromium	7440-47-3	43.4	21.4		19.5		19.7		37.3		**161**	
Cobalt	7440-48-4	50	12		10.7		10.9		6.19	J	**61.1**	
Copper	7440-50-8	31.6	21.4		**31.6**		18.8		**45.3**		**873**	J
Iron	7439-89-6	20000	**29400**		**33500**		**28600**		**109000**		**268000**	
Lead	7439-92-1	35.8	28	J	**39.2**	J	**59.6**	J	**155**	J	14.3	U
Magnesium	7439-95-4		2540		1840		2140		1350	J	3010	
Manganese	7439-96-5	460	**1240**	J+	**1260**	J+	**1170**	J+	**515**	J+	**5990**	B
Nickel	7440-02-0	22.7	**43.2**		**31.2**		20.9		**25.7**		**490**	
Potassium	7440-09-7		458	J	436	J	825		1410	J	1560	J
Selenium	7782-49-2	2	6.11	R	5.84	R	5.84	R	20	R	28.5	U
Silver	7440-22-4	1	3.05	U	2.92	U	2.92	U	9.98	U	14.3	U
Sodium	7440-23-5		210	U	192	U	584	U	409	U	2850	U
Thallium	7440-28-0		6.11	U	5.84	U	5.84	U	20	U	28.5	U
Vanadium	7440-62-2		13.7	J	13.2	J	22.4	J	35.9	J	39.7	J
Zinc	7440-66-6	121	**227**		**222**		102		111		118	J
Mercury	7439-97-6	0.18	0.153	UJ	0.15	UJ	0.0728	UJ	0.161	UJ	0.0685	J-

Table B20-A - Sediment Samples
Metals
(Detections Only)

Yellow Highlight: Result Exceeds BTAG Freshwater Sediment Benchmark

		Sample #:	SD-1		SD-1A		SD-2		SD-3		SD-4	
		Sampling Location:	SD-1		SD-1		SD-2		SD-3		SD-4	
		Matrix:	Sediment		Sediment		Sediment		Sediment		Sediment	
		Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Date Sampled:	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014	
		Date Analyzed:	5/21/2014		5/21/2014		5/21/2014		5/21/2014		5/14/2014	
Parameter	CAS No.	BTAG mg/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5		6520		4440		11200		11200		11000	
Arsenic	7440-38-2	9.8	**10**		**14.4**		**12.7**		**31.7**		**61.4**	J
Barium	7440-39-3		115		107		133		137		116	
Calcium	7440-70-2		10100	B	8010		14100	B	2370	B	41100	
Chromium	7440-47-3	43.4	21.4		19.5		19.7		37.3		**161**	
Cobalt	7440-48-4	50	12		10.7		10.9		6.19	J	**61.1**	
Copper	7440-50-8	31.6	21.4		**31.6**		18.8		**45.3**		**873**	J
Iron	7439-89-6	20000	**29400**		**33500**		**28600**		**109000**		**268000**	
Lead	7439-92-1	35.8	28	J	**39.2**	J	**59.6**	J	**155**	J		
Magnesium	7439-95-4		2540		1840		2140		1350	J	3010	
Manganese	7439-96-5	460	**1240**	J+	**1260**	J+	**1170**	J+	**515**	J+	**5990**	B
Nickel	7440-02-0	22.7	**43.2**		**31.2**		20.9		**25.7**		**490**	
Potassium	7440-09-7		458	J	436	J	825		1410	J	1560	J
Vanadium	7440-62-2		13.7	J	13.2	J	22.4	J	35.9	J	39.7	J
Zinc	7440-66-6	121	**227**		**222**		102		111		118	J
Mercury	7439-97-6	0.18									0.0685	J-

Table B21 - Waste Samples
Volatile Organic Compounds

	Sample #:	W-1		W-2		W-3		W-4	
	Sampling Location:	W-1		W-2		W-3		W-4	
	Matrix:	Waste		Waste		Waste		Waste	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
	Date Sampled:	5/7/2014		5/7/2014		5/7/2014		5/7/2014	
	Date Analyzed:	5/12/2014		5/12/2014		5/12/2014		5/12/2014	
Parameter	CAS No.	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	1.11	U	1.26	U	0.984	U	13.1	U
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	1.26	U	0.984	U	13.1	U
1,1,2-Trichloro-1,2,2-trichfluoroethane	76-13-1	1.11	U	1.26	U	0.984	U	13.1	U
1,1,2-Trichloroethane	79-00-5	1.11	U	1.26	U	0.984	U	13.1	U
1,1-Dichloroethane	75-34-3	1.11	U	1.26	U	0.984	U	13.1	U
1,1-Dichloroethene	75-35-4	1.11	U	1.26	U	0.984	U	13.1	U
1,2,3-Trichlorobenzene	87-61-6	1.11	U	1.26	U	0.984	U	13.1	U
1,2,4-Trichlorobenzene	120-82-1	1.11	U	1.26	U	0.984	U	13.1	U
1,2-Dibromo-3-Chloropropane	96-12-8	11.1	U	12.6	U	9.84	U	131	U
1,2-Dibromoethane (EDB)	106-93-4	1.11	U	1.26	U	0.984	U	13.1	U
1,2-Dichlorobenzene	95-50-1	1.11	U	1.26	U	0.984	U	13.1	U
1,2-Dichloroethane	107-06-2	1.11	U	1.26	U	0.984	U	13.1	U
1,2-Dichloropropane	78-87-5	1.11	U	1.26	U	0.984	U	13.1	U
1,3-Dichlorobenzene	541-73-1	1.11	U	1.26	U	0.984	U	13.1	U
1,4-Dichlorobenzene	106-46-7	1.11	U	1.26	U	0.984	U	13.1	U
1,4-Dioxane	123-91-1	222	U	253	U	197	U	2610	U
2-Butanone (MEK)	78-93-3	55.5	U	63.2	U	49.2	U	653	U
2-Hexanone	591-78-6	11.1	U	12.6	U	9.84	U	131	U
4-Methyl-2-pentanone (MIBK)	108-10-1	11.1	U	12.6	U	9.84	U	276	
Acetone	67-64-1	55.5	U	63.2	U	49.2	U	653	UJ
Benzene	71-43-2	1.11	U	1.26	U	0.984	U	13.1	U
Bromochloromethane	74-97-5	1.11	U	1.26	U	0.984	U	13.1	U
Bromodichloromethane	75-27-4	1.11	U	1.26	U	0.984	U	13.1	U
Bromoform	75-25-2	1.11	U	1.26	U	0.984	U	13.1	U
Bromomethane	74-83-9	1.11	U	1.26	U	0.984	U	13.1	U
Carbon disulfide	75-15-0	1.11	U	1.26	U	0.984	U	13.1	U
Carbon tetrachloride	56-23-5	1.11	U	1.26	U	0.984	U	13.1	U
Chlorobenzene	108-90-7	1.11	U	1.26	U	0.984	U	13.1	U
Chlorodibromomethane	124-48-1	1.11	U	1.26	U	0.984	U	13.1	U
Chloroethane	75-00-3	1.11	UJ	1.26	UJ	0.984	UJ	13.1	UJ
Chloroform	67-66-3	1.11	U	1.26	U	0.984	U	13.1	U
Chloromethane	74-87-3	1.11	U	1.26	U	0.984	U	13.1	U

Table B21 - Waste Samples
Volatile Organic Compounds

	Sample #:	W-1		W-2		W-3		W-4	
	Sampling Location:	W-1		W-2		W-3		W-4	
	Matrix:	Waste		Waste		Waste		Waste	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
	Date Sampled:	5/7/2014		5/7/2014		5/7/2014		5/7/2014	
	Date Analyzed:	5/12/2014		5/12/2014		5/12/2014		5/12/2014	
Parameter	CAS No.	Result	Q	Result	Q	Result	Q	Result	Q
cis-1,2-Dichloroethene	156-59-2	1.11	U	1.26	U	0.984	U	13.1	U
cis-1,3-Dichloropropene	10061-01-5	1.11	U	1.26	U	0.984	U	13.1	U
Cyclohexane	110-82-7	5.55	U	6.32	U	4.92	U	65.3	U
Dichlorodifluoromethane	75-71-8	1.11	U	1.26	U	0.984	U	13.1	UJ
Ethylbenzene	100-41-4	1.11	U	1.26	U	0.984	U	42.4	
Isopropylbenzene	98-82-8	1.11	U	1.26	U	0.984	U	582	J
m,p-Xylene	179601-23-1	2.22	U	2.53	U	1.97	U	236	
Methyl acetate	79-20-9	11.1	U	12.6	U	9.84	U	131	U
Methyl tert-butyl ether	1634-04-4	1.11	U	1.26	U	0.984	U	13.1	U
Methylcyclohexane	108-87-2	5.55	U	6.32	U	15.7		65.3	U
Methylene Chloride	75-09-2	5.55	U	6.32	U	4.92	U	65.3	U
o-Xylene	95-47-6	1.11	U	1.26	U	0.984	U	549	J
Styrene	100-42-5	1.11	U	1.26	U	0.984	U	13.1	U
Tetrachloroethene	127-18-4	1.11	U	1.26	U	0.984	U	13.1	U
Toluene	108-88-3	1.11	U	1.26	U	0.984	U	4760	
trans-1,2-Dichloroethene	156-60-5	1.11	U	1.26	U	0.984	U	13.1	U
trans-1,3-Dichloropropene	10061-02-6	1.11	U	1.26	U	0.984	U	13.1	U
Trichloroethene	79-01-6	1.11	U	1.26	U	0.984	U	13.1	U
Trichlorofluoromethane	75-69-4	1.11	UJ	1.26	UJ	0.984	UJ	13.1	UJ
Vinyl chloride	75-01-4	1.11	U	1.26	U	0.984	U	13.1	U
Xylenes, Total	1330-20-7	3.33	U	3.79	U	2.95	U	785	J

Table B22 - Waste Samples
Semi-Volatile Organic Compounds

	Sample #:	W-1		W-2		W-3		W-4	
	Sampling Location:	W-1		W-2		W-3		W-4	
	Matrix:	Waste		Waste		Waste		Waste	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
	Date Sampled:	5/7/2014		5/7/2014		5/7/2014		5/7/2014	
	Date Analyzed:	5/15/2014		5/15/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4,5-Tetrachlorobenzene	95-94-3	231	U	258	U	334	U	1290	U
2,3,4,6-Tetrachlorophenol	58-90-2	231	U	258	U	334	U	1290	U
2,4,5-Trichlorophenol	95-95-4	231	U	258	U	334	U	1290	U
2,4,6-Trichlorophenol	88-06-2	231	U	258	U	334	U	1290	U
2,4-Dichlorophenol	120-83-2	231	U	258	U	334	U	1290	U
2,4-Dimethylphenol	105-67-9	231	U	258	U	334	U	1290	U
2,4-Dinitrophenol	51-28-5	231	U	258	U	334	U	1290	U
2,4-Dinitrotoluene	121-14-2	231	U	258	U	334	U	1290	U
2,6-Dinitrotoluene	606-20-2	231	U	258	U	334	U	1290	U
2-Chloronaphthalene	91-58-7	231	U	258	U	334	U	1290	U
2-Chlorophenol	95-57-8	231	U	258	U	334	U	1290	U
2-Methylnaphthalene	91-57-6	231	U	258	U	334	U	1290	U
2-Methylphenol	95-48-7	231	U	258	U	334	U	1290	U
2-Nitroaniline	88-74-4	231	U	258	U	334	U	1290	U
2-Nitrophenol	88-75-5	231	U	258	U	334	U	1290	U
3 & 4 Methylphenol	MEPH3MEPH4	231	U	258	U	334	U	1290	U
3,3-Dichlorobenzidine	91-94-1	231	U	258	U	334	U	1290	U
3-Nitroaniline	99-09-2	231	U	258	U	334	U	1290	U
4,6-Dinitro-2-methylphenol	534-52-1	231	U	258	U	334	U	1290	U
4-Bromophenyl phenyl ether	101-55-3	231	U	258	U	334	U	1290	U
4-Chloro-3-methylphenol	59-50-7	231	U	258	U	334	U	1290	U
4-Chloroaniline	106-47-8	231	U	258	U	334	U	1290	U
4-Chlorophenyl phenyl ether	7005-72-3	231	U	258	U	334	U	1290	U
4-Nitroaniline	100-01-6	231	U	258	U	334	U	1290	U
4-Nitrophenol	100-02-7	231	U	258	U	334	U	1290	U
Acenaphthene	83-32-9	231	U	258	U	334	U	1290	U
Acenaphthylene	208-96-8	231	U	258	U	334	U	1290	U
Acetophenone	98-86-2	231	U	258	U	334	U	1290	U
Anthracene	120-12-7	231	U	258	U	334	U	1290	U
Atrazine	1912-24-9	231	UJ	258	UJ	334	UJ	1290	UJ
Benzaldehyde	100-52-7	231	U	258	U	334	U	1290	U
Benzo[a]anthracene	56-55-3	231	U	258	U	334	U	1290	U
Benzo[a]pyrene	50-32-8	231	U	258	U	334	U	1290	U
Benzo[b]fluoranthene	205-99-2	231	U	258	U	334	U	1290	U
Benzo[g,h,i]perylene	191-24-2	231	U	258	U	334	U	1290	U
Benzo[k]fluoranthene	207-08-9	231	U	258	U	334	U	1290	U
Biphenyl	92-52-4	231	U	258	U	334	U	1290	U

Table B22 - Waste Samples
Semi-Volatile Organic Compounds

	Sample #:	W-1		W-2		W-3		W-4	
	Sampling Location:	W-1		W-2		W-3		W-4	
	Matrix:	Waste		Waste		Waste		Waste	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
	Date Sampled:	5/7/2014		5/7/2014		5/7/2014		5/7/2014	
	Date Analyzed:	5/15/2014		5/15/2014		5/22/2014		5/22/2014	
Parameter	CAS No.	Result	Q	Result	Q	Result	Q	Result	Q
bis (2-chloroisopropyl) ether	108-60-1	231	U	258	U	334	U	1290	U
Bis(2-chloroethoxy)methane	111-91-1	231	U	258	U	334	U	1290	U
Bis(2-chloroethyl)ether	111-44-4	231	U	258	U	334	U	1290	U
Bis(2-ethylhexyl) phthalate	117-81-7	231	U	258	U	334	U	1290	U
Butyl benzyl phthalate	85-68-7	231	U	258	U	334	U	1290	U
Caprolactam	105-60-2	231	U	258	U	334	UJ	1290	UJ
Carbazole	86-74-8	231	U	258	U	334	U	1290	U
Chrysene	218-01-9	231	U	258	U	334	U	1290	U
Dibenz(a,h)anthracene	53-70-3	231	U	258	U	334	U	1290	U
Dibenzofuran	132-64-9	231	U	258	U	334	U	1290	U
Diethyl phthalate	84-66-2	231	U	258	U	334	U	1290	U
Dimethyl phthalate	131-11-3	231	U	258	U	334	U	1290	U
Di-n-butyl phthalate	84-74-2	231	U	258	U	334	U	1290	U
Di-n-octyl phthalate	117-84-0	231	U	258	U	334	U	1290	U
Fluoranthene	206-44-0	231	U	258	U	334	U	1290	U
Fluorene	86-73-7	231	U	258	U	334	U	1290	U
Hexachlorobenzene	118-74-1	231	U	258	U	334	U	1290	U
Hexachlorobutadiene	87-68-3	231	U	258	U	334	U	1290	U
Hexachlorocyclopentadiene	77-47-4	231	U	258	U	334	U	1290	U
Hexachloroethane	67-72-1	231	U	258	U	334	U	1290	U
Indeno[1,2,3-cd]pyrene	193-39-5	231	U	258	U	334	U	1290	U
Isophorone	78-59-1	231	U	258	U	334	U	1290	U
Naphthalene	91-20-3	231	U	258	U	334	U	3480	
Nitrobenzene	98-95-3	231	U	258	U	334	U	1290	U
N-Nitrosodi-n-propylamine	621-64-7	231	U	258	U	334	U	1290	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	231	U	258	U	334	U	1290	U
Pentachlorophenol	87-86-5	231	U	258	U	334	U	1290	U
Phenanthrene	85-01-8	231	U	258	U	334	U	1290	U
Phenol	108-95-2	231	U	258	U	334	U	1290	U
Pyrene	129-00-0	231	U	258	U	334	U	1290	U

Table B23 - Waste Samples
Metals

	Sample #:	W-1		W-2		W-3		W-4	
	Sampling Location:	W-1		W-2		W-3		W-4	
	Matrix:	Waste		Waste		Waste		Waste	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
	Date Sampled:	5/7/2014		5/7/2014		5/7/2014		5/7/2014	
	Date Analyzed:	5/13/2014		5/13/2014		5/13/2014		5/13/2014	
Parameter	CAS No.	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	318	J	492	J	19.7	UJ	3900	J
Antimony	7440-36-0	2.88	J	13	U	9.87	U	2.13	J
Arsenic	7440-38-2	2.23	U	2.61	U	1.97	U	1.97	J
Barium	7440-39-3	36.6		49.8		1.97	U	378	
Beryllium	7440-41-7	1.12	U	1.3	U	0.987	U	1.28	U
Cadmium	7440-43-9	1.79		20.3		0.987	U	1.28	U
Calcium	7440-70-2	1920		2780		197	U	419	
Chromium	7440-47-3	39.8	J	8.14	J	0.987	U	227	J
Cobalt	7440-48-4	1.34	J	2.61	U	1.97	U	2.56	U
Copper	7440-50-8	104		123		1.97	U	12.8	
Iron	7439-89-6	13000		2180		60.1		23500	
Lead	7439-92-1	104		163		0.691	J	639	
Magnesium	7439-95-4	330		586		197	U	256	U
Manganese	7439-96-5	112		71		1.58	J	59.9	
Nickel	7440-02-0	11.3		7.72		2.51		9.25	
Potassium	7440-09-7	149	J	799		197	U	256	U
Selenium	7782-49-2	2.23	U	2.61	U	1.97	U	2.56	U
Silver	7440-22-4	1.12	U	1.3	U	0.987	U	1.28	U
Sodium	7440-23-5	175	J	130	J	197	U	256	U
Thallium	7440-28-0	2.23	U	2.61	U	1.97	U	2.56	U
Vanadium	7440-62-2	11.2	U	4.7	J	9.87	U	12.8	U
Zinc	7440-66-6	8230	J	3620	J	9.27	J	470	J
Chromium, hex	18540-29-9							6.21	U
Mercury	7439-97-6	0.0704	J	0.135	U	0.0991	U	0.127	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/10/2014		5/23/2014		5/23/2014		5/12/2014		5/18/2014		6/2/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1016	12674-11-2	SW8082							0.25	UJ			0.446	U
PCB-1221	11104-28-2	SW8082							0.25	U			0.446	U
PCB-1232	11141-16-5	SW8082							0.25	U			0.446	U
PCB-1242	53469-21-9	SW8082							0.25	U			0.446	U
PCB-1248	12672-29-6	SW8082							2.19	J			0.446	U
PCB-1254	11097-69-1	SW8082							0.25	U			0.446	U
PCB-1260	11096-82-5	SW8082							0.25	UJ			0.446	UJ
PCB-1262	37324-23-5	SW8082							0.25	U			0.446	U
PCB-1268	11100-14-4	SW8082							0.25	U			0.446	U
1,1,1-Trichloroethane	71-55-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	SW8260B	0.5	UJ	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dioxane	123-91-1	SW8260B	200	U	200	U	200	U	200	U	200	R	200	R
2-Butanone (MEK)	78-93-3	SW8260B	50	U	50	U	50	U	50	U	50	U	50	U
2-Hexanone	591-78-6	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	SW8260B	5	U	5	U	5	U	5	U	5	R	5	R
Benzene	71-43-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	74-97-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorodibromomethane	124-48-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/10/2014		5/23/2014		5/23/2014		5/12/2014		5/18/2014		6/2/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloroform	67-66-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorobromomethane	75-27-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9	SW8260B	10	U	10	U	10	U	10	U	10	U	10	U
Methyl tert-butyl ether	1634-04-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	179601-23-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	95-47-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	SW8260B	0.5	U	0.5	U	0.269	J	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	156-60-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	1330-20-7	SW8260B	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
1,2,4,5-Tetrachlorobenzene	95-94-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,3,4,6-Tetrachlorophenol	58-90-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,4,5-Trichlorophenol	95-95-4	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
2,4,6-Trichlorophenol	88-06-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,4-Dichlorophenol	120-83-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,4-Dimethylphenol	105-67-9	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,4-Dinitrophenol	51-28-5	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
2,4-Dinitrotoluene	121-14-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2,6-Dinitrotoluene	606-20-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2-Chloronaphthalene	91-58-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2-Chlorophenol	95-57-8	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2-Methylnaphthalene	91-57-6	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
2-Methylphenol	95-48-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
2-Nitroaniline	88-74-4	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/10/2014		5/23/2014		5/23/2014		5/12/2014		5/18/2014		6/2/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Nitrophenol	88-75-5	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
3 & 4 Methylphenol	MEPH3MEPH4	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
3,3-Dichlorobenzidine	91-94-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
3-Nitroaniline	99-09-2	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
4,6-Dinitro-2-methylphenol	534-52-1	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
4-Bromophenyl phenyl ether	101-55-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
4-Chloro-3-methylphenol	59-50-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
4-Chloroaniline	106-47-8	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
4-Chlorophenyl phenyl ether	7005-72-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
4-Nitroaniline	100-01-6	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
4-Nitrophenol	100-02-7	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
Acenaphthene	83-32-9	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Acenaphthylene	208-96-8	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Acetophenone	98-86-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Anthracene	120-12-7	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Atrazine	1912-24-9	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Benzaldehyde	100-52-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Benzo[a]anthracene	56-55-3	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Benzo[a]pyrene	50-32-8	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Benzo[b]fluoranthene	205-99-2	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Benzo[g,h,i]perylene	191-24-2	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Benzo[k]fluoranthene	207-08-9	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Biphenyl	92-52-4	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
bis (2-chloroisopropyl) ether	108-60-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Bis(2-chloroethoxy)methane	111-91-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Bis(2-chloroethyl)ether	111-44-4	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Bis(2-ethylhexyl) phthalate	117-81-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Butyl benzyl phthalate	85-68-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Caprolactam	105-60-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Carbazole	86-74-8	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Chrysene	218-01-9	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Dibenz(a,h)anthracene	53-70-3	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Dibenzofuran	132-64-9	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Diethyl phthalate	84-66-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Dimethyl phthalate	131-11-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Di-n-butyl phthalate	84-74-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Di-n-octyl phthalate	117-84-0	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Fluoranthene	206-44-0	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/10/2014		5/23/2014		5/23/2014		5/12/2014		5/18/2014		6/2/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluorene	86-73-7	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Hexachlorobenzene	118-74-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Hexachlorobutadiene	87-68-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Hexachlorocyclopentadiene	77-47-4	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Hexachloroethane	67-72-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Isophorone	78-59-1	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Naphthalene	91-20-3	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Nitrobenzene	98-95-3	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
N-Nitrosodi-n-propylamine	621-64-7	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Pentachlorophenol	87-86-5	SW8270D	25	U	23.6	U	24	U	22.3	U	23.6	U	21.6	U
Phenanthrene	85-01-8	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
Phenol	108-95-2	SW8270D	10	U	9.43	U	9.62	U	8.93	U	9.43	U	8.62	U
Pyrene	129-00-0	SW8270D	2	U	1.89	U	1.92	U	1.79	U	1.89	U	1.72	U
1-Methylnaphthalene	90-12-0	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
2-Methylnaphthalene	91-57-6	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Acenaphthene	83-32-9	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Acenaphthylene	208-96-8	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Anthracene	120-12-7	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Benzo[a]anthracene	56-55-3	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Benzo[a]pyrene	50-32-8	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Benzo[b]fluoranthene	205-99-2	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Benzo[g,h,i]perylene	191-24-2	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Benzo[k]fluoranthene	207-08-9	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Chrysene	218-01-9	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Dibenz(a,h)anthracene	53-70-3	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Fluoranthene	206-44-0	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Fluorene	86-73-7	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Naphthalene	91-20-3	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		
Phenanthrene	85-01-8	SW8270D SIM	0.0971	U	0.0962	U	0.0453	J	0.0962	U	0.098	U		
Pyrene	129-00-0	SW8270D SIM	0.0971	U	0.0962	U	0.098	U	0.0962	U	0.098	U		

Table B24 - Blank Samples
Organic Compounds

		Sample #:	RB-04		RB-05		TB-01		TB-02		TB-03		TB-04	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/19/2014		5/20/2014		4/29/2014		4/29/2014		4/29/2014		4/29/2014	
		Date Analyzed:	5/23/2014		5/23/2014		5/9/2014		5/10/2014		5/10/2014		5/18/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1016	12674-11-2	SW8082												
PCB-1221	11104-28-2	SW8082												
PCB-1232	11141-16-5	SW8082												
PCB-1242	53469-21-9	SW8082												
PCB-1248	12672-29-6	SW8082												
PCB-1254	11097-69-1	SW8082												
PCB-1260	11096-82-5	SW8082												
PCB-1262	37324-23-5	SW8082												
PCB-1268	11100-14-4	SW8082												
1,1,1-Trichloroethane	71-55-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.294	J
1,1,2,2-Tetrachloroethane	79-34-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	UJ	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dioxane	123-91-1	SW8260B	200	U	200	U	200	U	200	U	200	U	200	R
2-Butanone (MEK)	78-93-3	SW8260B	50	U	50	U	50	U	50	U	50	U	50	U
2-Hexanone	591-78-6	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	SW8260B	5	U	5	U	5	U	5	U	5	U	5	R
Benzene	71-43-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	SW8260B	0.518		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	74-97-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorodibromomethane	124-48-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	RB-04		RB-05		TB-01		TB-02		TB-03		TB-04	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/19/2014		5/20/2014		4/29/2014		4/29/2014		4/29/2014		4/29/2014	
		Date Analyzed:	5/23/2014		5/23/2014		5/9/2014		5/10/2014		5/10/2014		5/18/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloroform	67-66-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorobromomethane	75-27-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	SW8260B	1	U	1	U	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9	SW8260B	10	U	10	U	10	U	10	U	10	U	10	U
Methyl tert-butyl ether	1634-04-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	SW8260B	5	U	5	U	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	179601-23-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	95-47-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	SW8260B	0.276	J	0.3	J	0.5	U	0.919		0.854		0.307	J
trans-1,2-Dichloroethene	156-60-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	1330-20-7	SW8260B	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
1,2,4,5-Tetrachlorobenzene	95-94-3	SW8270D	9.8	U	8.62	U								
2,3,4,6-Tetrachlorophenol	58-90-2	SW8270D	9.8	U	8.62	U								
2,4,5-Trichlorophenol	95-95-4	SW8270D	24.5	U	21.6	U								
2,4,6-Trichlorophenol	88-06-2	SW8270D	9.8	U	8.62	U								
2,4-Dichlorophenol	120-83-2	SW8270D	9.8	U	8.62	U								
2,4-Dimethylphenol	105-67-9	SW8270D	9.8	U	8.62	U								
2,4-Dinitrophenol	51-28-5	SW8270D	24.5	U	21.6	U								
2,4-Dinitrotoluene	121-14-2	SW8270D	9.8	U	8.62	U								
2,6-Dinitrotoluene	606-20-2	SW8270D	9.8	U	8.62	U								
2-Chloronaphthalene	91-58-7	SW8270D	9.8	U	8.62	U								
2-Chlorophenol	95-57-8	SW8270D	9.8	U	8.62	U								
2-Methylnaphthalene	91-57-6	SW8270D	1.96	U	1.72	U								
2-Methylphenol	95-48-7	SW8270D	9.8	U	8.62	U								
2-Nitroaniline	88-74-4	SW8270D	24.5	U	21.6	U								

Table B24 - Blank Samples
Organic Compounds

		Sample #:	RB-04		RB-05		TB-01		TB-02		TB-03		TB-04	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/19/2014		5/20/2014		4/29/2014		4/29/2014		4/29/2014		4/29/2014	
		Date Analyzed:	5/23/2014		5/23/2014		5/9/2014		5/10/2014		5/10/2014		5/18/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Nitrophenol	88-75-5	SW8270D	9.8	U	8.62	U								
3 & 4 Methylphenol	MEPH3MEPH4	SW8270D	9.8	U	8.62	U								
3,3-Dichlorobenzidine	91-94-1	SW8270D	9.8	U	8.62	U								
3-Nitroaniline	99-09-2	SW8270D	24.5	U	21.6	U								
4,6-Dinitro-2-methylphenol	534-52-1	SW8270D	24.5	U	21.6	U								
4-Bromophenyl phenyl ether	101-55-3	SW8270D	9.8	U	8.62	U								
4-Chloro-3-methylphenol	59-50-7	SW8270D	9.8	U	8.62	U								
4-Chloroaniline	106-47-8	SW8270D	9.8	U	8.62	U								
4-Chlorophenyl phenyl ether	7005-72-3	SW8270D	9.8	U	8.62	U								
4-Nitroaniline	100-01-6	SW8270D	24.5	U	21.6	U								
4-Nitrophenol	100-02-7	SW8270D	24.5	U	21.6	U								
Acenaphthene	83-32-9	SW8270D	1.96	U	1.72	U								
Acenaphthylene	208-96-8	SW8270D	1.96	U	1.72	U								
Acetophenone	98-86-2	SW8270D	9.8	U	8.62	U								
Anthracene	120-12-7	SW8270D	1.96	U	1.72	U								
Atrazine	1912-24-9	SW8270D	9.8	U	8.62	U								
Benzaldehyde	100-52-7	SW8270D	9.8	U	8.62	U								
Benzo[a]anthracene	56-55-3	SW8270D	1.96	U	1.72	U								
Benzo[a]pyrene	50-32-8	SW8270D	1.96	U	1.72	U								
Benzo[b]fluoranthene	205-99-2	SW8270D	1.96	U	1.72	U								
Benzo[g,h,i]perylene	191-24-2	SW8270D	1.96	U	1.72	U								
Benzo[k]fluoranthene	207-08-9	SW8270D	1.96	U	1.72	U								
Biphenyl	92-52-4	SW8270D	9.8	U	8.62	U								
bis (2-chloroisopropyl) ether	108-60-1	SW8270D	9.8	U	8.62	U								
Bis(2-chloroethoxy)methane	111-91-1	SW8270D	9.8	U	8.62	U								
Bis(2-chloroethyl)ether	111-44-4	SW8270D	9.8	U	8.62	U								
Bis(2-ethylhexyl) phthalate	117-81-7	SW8270D	9.8	U	8.62	U								
Butyl benzyl phthalate	85-68-7	SW8270D	9.8	U	8.62	U								
Caprolactam	105-60-2	SW8270D	9.8	U	8.62	U								
Carbazole	86-74-8	SW8270D	9.8	U	8.62	U								
Chrysene	218-01-9	SW8270D	1.96	U	1.72	U								
Dibenz(a,h)anthracene	53-70-3	SW8270D	1.96	U	1.72	U								
Dibenzofuran	132-64-9	SW8270D	9.8	U	8.62	U								
Diethyl phthalate	84-66-2	SW8270D	9.8	U	8.62	U								
Dimethyl phthalate	131-11-3	SW8270D	9.8	U	8.62	U								
Di-n-butyl phthalate	84-74-2	SW8270D	9.8	U	8.62	U								
Di-n-octyl phthalate	117-84-0	SW8270D	9.8	U	8.62	U								
Fluoranthene	206-44-0	SW8270D	1.96	U	1.72	U								

Table B24 - Blank Samples
Organic Compounds

		Sample #:	RB-04		RB-05		TB-01		TB-02		TB-03		TB-04	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/19/2014		5/20/2014		4/29/2014		4/29/2014		4/29/2014		4/29/2014	
		Date Analyzed:	5/23/2014		5/23/2014		5/9/2014		5/10/2014		5/10/2014		5/18/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluorene	86-73-7	SW8270D	1.96	U	1.72	U								
Hexachlorobenzene	118-74-1	SW8270D	9.8	U	8.62	U								
Hexachlorobutadiene	87-68-3	SW8270D	9.8	U	8.62	U								
Hexachlorocyclopentadiene	77-47-4	SW8270D	9.8	U	8.62	U								
Hexachloroethane	67-72-1	SW8270D	9.8	U	8.62	U								
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D	1.96	U	1.72	U								
Isophorone	78-59-1	SW8270D	9.8	U	8.62	U								
Naphthalene	91-20-3	SW8270D	1.96	U	1.72	U								
Nitrobenzene	98-95-3	SW8270D	9.8	U	8.62	U								
N-Nitrosodi-n-propylamine	621-64-7	SW8270D	9.8	U	8.62	U								
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	SW8270D	9.8	U	8.62	U								
Pentachlorophenol	87-86-5	SW8270D	24.5	U	21.6	U								
Phenanthrene	85-01-8	SW8270D	1.96	U	1.72	U								
Phenol	108-95-2	SW8270D	9.8	U	8.62	U								
Pyrene	129-00-0	SW8270D	1.96	U	1.72	U								
1-Methylnaphthalene	90-12-0	SW8270D SIM	0.0971	U	0.098	U								
2-Methylnaphthalene	91-57-6	SW8270D SIM	0.0971	U	0.098	U								
Acenaphthene	83-32-9	SW8270D SIM	0.0971	U	0.098	U								
Acenaphthylene	208-96-8	SW8270D SIM	0.0971	U	0.098	U								
Anthracene	120-12-7	SW8270D SIM	0.0971	U	0.098	U								
Benzo[a]anthracene	56-55-3	SW8270D SIM	0.0971	U	0.098	U								
Benzo[a]pyrene	50-32-8	SW8270D SIM	0.0971	U	0.098	U								
Benzo[b]fluoranthene	205-99-2	SW8270D SIM	0.0971	U	0.098	U								
Benzo[g,h,i]perylene	191-24-2	SW8270D SIM	0.0971	U	0.098	U								
Benzo[k]fluoranthene	207-08-9	SW8270D SIM	0.0971	U	0.098	U								
Chrysene	218-01-9	SW8270D SIM	0.0971	U	0.098	U								
Dibenz(a,h)anthracene	53-70-3	SW8270D SIM	0.0971	U	0.098	U								
Fluoranthene	206-44-0	SW8270D SIM	0.0971	U	0.098	U								
Fluorene	86-73-7	SW8270D SIM	0.0971	U	0.098	U								
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D SIM	0.0971	U	0.098	U								
Naphthalene	91-20-3	SW8270D SIM	0.0971	U	0.098	U								
Phenanthrene	85-01-8	SW8270D SIM	0.0971	U	0.098	U								
Pyrene	129-00-0	SW8270D SIM	0.0971	U	0.098	U								

Table B24 - Blank Samples
Organic Compounds

		Sample #:	TB-05		TB-06		TB-07		TB-08	
		Sampling Location:	Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water	
		Sample Type:	Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	4/29/2014		4/29/2014		4/29/2014		5/19/2014	
		Date Analyzed:	5/18/2014		5/18/2014		5/20/2014		5/23/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1016	12674-11-2	SW8082								
PCB-1221	11104-28-2	SW8082								
PCB-1232	11141-16-5	SW8082								
PCB-1242	53469-21-9	SW8082								
PCB-1248	12672-29-6	SW8082								
PCB-1254	11097-69-1	SW8082								
PCB-1260	11096-82-5	SW8082								
PCB-1262	37324-23-5	SW8082								
PCB-1268	11100-14-4	SW8082								
1,1,1-Trichloroethane	71-55-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	SW8260B	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	SW8260B	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dioxane	123-91-1	SW8260B	200	R	200	R	200	U	200	U
2-Butanone (MEK)	78-93-3	SW8260B	50	U	50	U	50	U	50	U
2-Hexanone	591-78-6	SW8260B	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	SW8260B	5	U	5	U	5	U	5	U
Acetone	67-64-1	SW8260B	5	R	5	R	5	R	5	U
Benzene	71-43-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	74-97-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Chlorodibromomethane	124-48-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U

Table B24 - Blank Samples
Organic Compounds

		Sample #:	TB-05		TB-06		TB-07		TB-08	
		Sampling Location:	Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water	
		Sample Type:	Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	4/29/2014		4/29/2014		4/29/2014		5/19/2014	
		Date Analyzed:	5/18/2014		5/18/2014		5/20/2014		5/23/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q
Chloroform	67-66-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	SW8260B	1	U	1	U	1	U	1	U
Dichlorobromomethane	75-27-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	SW8260B	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9	SW8260B	10	U	10	U	10	U	10	U
Methyl tert-butyl ether	1634-04-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	SW8260B	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	179601-23-1	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	95-47-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	SW8260B	0.5	U	0.5	U	0.767		0.292	J
trans-1,2-Dichloroethene	156-60-5	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	SW8260B	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	1330-20-7	SW8260B	1.5	U	1.5	U	1.5	U	1.5	U
1,2,4,5-Tetrachlorobenzene	95-94-3	SW8270D								
2,3,4,6-Tetrachlorophenol	58-90-2	SW8270D								
2,4,5-Trichlorophenol	95-95-4	SW8270D								
2,4,6-Trichlorophenol	88-06-2	SW8270D								
2,4-Dichlorophenol	120-83-2	SW8270D								
2,4-Dimethylphenol	105-67-9	SW8270D								
2,4-Dinitrophenol	51-28-5	SW8270D								
2,4-Dinitrotoluene	121-14-2	SW8270D								
2,6-Dinitrotoluene	606-20-2	SW8270D								
2-Chloronaphthalene	91-58-7	SW8270D								
2-Chlorophenol	95-57-8	SW8270D								
2-Methylnaphthalene	91-57-6	SW8270D								
2-Methylphenol	95-48-7	SW8270D								
2-Nitroaniline	88-74-4	SW8270D								

Table B24 - Blank Samples
Organic Compounds

		Sample #:	TB-05		TB-06		TB-07		TB-08	
		Sampling Location:	Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water	
		Sample Type:	Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	4/29/2014		4/29/2014		4/29/2014		5/19/2014	
		Date Analyzed:	5/18/2014		5/18/2014		5/20/2014		5/23/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q
2-Nitrophenol	88-75-5	SW8270D								
3 & 4 Methylphenol	MEPH3MEPH4	SW8270D								
3,3-Dichlorobenzidine	91-94-1	SW8270D								
3-Nitroaniline	99-09-2	SW8270D								
4,6-Dinitro-2-methylphenol	534-52-1	SW8270D								
4-Bromophenyl phenyl ether	101-55-3	SW8270D								
4-Chloro-3-methylphenol	59-50-7	SW8270D								
4-Chloroaniline	106-47-8	SW8270D								
4-Chlorophenyl phenyl ether	7005-72-3	SW8270D								
4-Nitroaniline	100-01-6	SW8270D								
4-Nitrophenol	100-02-7	SW8270D								
Acenaphthene	83-32-9	SW8270D								
Acenaphthylene	208-96-8	SW8270D								
Acetophenone	98-86-2	SW8270D								
Anthracene	120-12-7	SW8270D								
Atrazine	1912-24-9	SW8270D								
Benzaldehyde	100-52-7	SW8270D								
Benzo[a]anthracene	56-55-3	SW8270D								
Benzo[a]pyrene	50-32-8	SW8270D								
Benzo[b]fluoranthene	205-99-2	SW8270D								
Benzo[g,h,i]perylene	191-24-2	SW8270D								
Benzo[k]fluoranthene	207-08-9	SW8270D								
Biphenyl	92-52-4	SW8270D								
bis (2-chloroisopropyl) ether	108-60-1	SW8270D								
Bis(2-chloroethoxy)methane	111-91-1	SW8270D								
Bis(2-chloroethyl)ether	111-44-4	SW8270D								
Bis(2-ethylhexyl) phthalate	117-81-7	SW8270D								
Butyl benzyl phthalate	85-68-7	SW8270D								
Caprolactam	105-60-2	SW8270D								
Carbazole	86-74-8	SW8270D								
Chrysene	218-01-9	SW8270D								
Dibenz(a,h)anthracene	53-70-3	SW8270D								
Dibenzofuran	132-64-9	SW8270D								
Diethyl phthalate	84-66-2	SW8270D								
Dimethyl phthalate	131-11-3	SW8270D								
Di-n-butyl phthalate	84-74-2	SW8270D								
Di-n-octyl phthalate	117-84-0	SW8270D								
Fluoranthene	206-44-0	SW8270D								

Table B24 - Blank Samples
Organic Compounds

		Sample #:	TB-05		TB-06		TB-07		TB-08	
		Sampling Location:	Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water	
		Sample Type:	Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Units:	ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	4/29/2014		4/29/2014		4/29/2014		5/19/2014	
		Date Analyzed:	5/18/2014		5/18/2014		5/20/2014		5/23/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q
Fluorene	86-73-7	SW8270D								
Hexachlorobenzene	118-74-1	SW8270D								
Hexachlorobutadiene	87-68-3	SW8270D								
Hexachlorocyclopentadiene	77-47-4	SW8270D								
Hexachloroethane	67-72-1	SW8270D								
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D								
Isophorone	78-59-1	SW8270D								
Naphthalene	91-20-3	SW8270D								
Nitrobenzene	98-95-3	SW8270D								
N-Nitrosodi-n-propylamine	621-64-7	SW8270D								
n-Nitrosodiphenylamine(as diphenylamine)	86-30-6	SW8270D								
Pentachlorophenol	87-86-5	SW8270D								
Phenanthrene	85-01-8	SW8270D								
Phenol	108-95-2	SW8270D								
Pyrene	129-00-0	SW8270D								
1-Methylnaphthalene	90-12-0	SW8270D SIM								
2-Methylnaphthalene	91-57-6	SW8270D SIM								
Acenaphthene	83-32-9	SW8270D SIM								
Acenaphthylene	208-96-8	SW8270D SIM								
Anthracene	120-12-7	SW8270D SIM								
Benzo[a]anthracene	56-55-3	SW8270D SIM								
Benzo[a]pyrene	50-32-8	SW8270D SIM								
Benzo[b]fluoranthene	205-99-2	SW8270D SIM								
Benzo[g,h,i]perylene	191-24-2	SW8270D SIM								
Benzo[k]fluoranthene	207-08-9	SW8270D SIM								
Chrysene	218-01-9	SW8270D SIM								
Dibenz(a,h)anthracene	53-70-3	SW8270D SIM								
Fluoranthene	206-44-0	SW8270D SIM								
Fluorene	86-73-7	SW8270D SIM								
Indeno[1,2,3-cd]pyrene	193-39-5	SW8270D SIM								
Naphthalene	91-20-3	SW8270D SIM								
Phenanthrene	85-01-8	SW8270D SIM								
Pyrene	129-00-0	SW8270D SIM								

Table B24-A -Blank Samples
Organic Compounds
(Detections Only)

		Sample #:	FB-03		RB-01		RB-04		RB-05		TB-02		TB-03		TB-04		TB-07		TB-08	
		Sampling Location:	Z		Z		Z		Z		Z		Z		Z		Z		Z	
		Sample Type:	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
		Matrix:	Water		Water		Water		Water		Water		Water		Water		Water		Water	
		Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
		Date Sampled:	5/20/2014		5/6/2014		5/19/2014		5/20/2014		4/29/2014		4/29/2014		4/29/2014		4/29/2014		5/19/2014	
		Date Analyzed:	5/23/2014		5/12/2014		5/23/2014		5/23/2014		5/10/2014		5/10/2014		5/18/2014		5/20/2014		5/23/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCB-1248	12672-29-6	SW8082			2.19	J														
1,1,1-Trichloroethane	71-55-6	SW8260B													0.294	J				
Carbon disulfide	75-15-0	SW8260B					0.518													
Toluene	108-88-3	SW8260B	0.269	J			0.276	J	0.3	J	0.919		0.854		0.307	J	0.767		0.292	J
Phenanthrene	85-01-8	SW8270D SIM	0.0453	J																

Table B25 - Blank Samples
Metals

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/13/2014		5/28/2014		5/28/2014		5/15/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	SW6010C	0.1	U										
Antimony	7440-36-0	SW6010C	0.01	U										
Arsenic	7440-38-2	SW6010C	0.01	U										
Barium	7440-39-3	SW6010C	0.01	U										
Beryllium	7440-41-7	SW6010C	0.004	U										
Cadmium	7440-43-9	SW6010C	0.001	U										
Calcium	7440-70-2	SW6010C	1	U										
Chromium	7440-47-3	SW6010C	0.005	U										
Cobalt	7440-48-4	SW6010C	0.01	U										
Copper	7440-50-8	SW6010C	0.0066	U										
Iron	7439-89-6	SW6010C	0.1	U										
Lead	7439-92-1	SW6010C	0.005	U										
Magnesium	7439-95-4	SW6010C	1	U										
Manganese	7439-96-5	SW6010C	0.015	U										
Nickel	7440-02-0	SW6010C	0.01	U										
Potassium	7440-09-7	SW6010C	1	U										
Selenium	7782-49-2	SW6010C	0.01	U										
Silver	7440-22-4	SW6010C	0.005	U										
Sodium	7440-23-5	SW6010C	1	U										
Thallium	7440-28-0	SW6010C	0.01	U										
Vanadium	7440-62-2	SW6010C	0.0111	U										
Zinc	7440-66-6	SW6010C	0.05	U										
Aluminum	7429-90-5	SW6020A			0.02	UJ	0.02	UJ	0.02	U	0.0239		0.02	U
Antimony	7440-36-0	SW6020A			0.002	U	0.002	U	0.000639	U	0.002	U	0.002	U
Arsenic	7440-38-2	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Barium	7440-39-3	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Beryllium	7440-41-7	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Cadmium	7440-43-9	SW6020A			0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Calcium	7440-70-2	SW6020A			1	U	1	U	1	U	0.203	J	1	U
Chromium	7440-47-3	SW6020A			0.002	U	0.002	U	0.002	U	0.0172		0.002	U
Cobalt	7440-48-4	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Copper	7440-50-8	SW6020A			0.002	U	0.002	U	0.002	U	0.00051	J	0.002	U
Iron	7439-89-6	SW6020A			0.025	U	0.025	U	0.025	U	0.811		0.0164	J
Lead	7439-92-1	SW6020A			0.002	U	0.002	U	0.002	U	0.000276	J	0.002	U
Magnesium	7439-95-4	SW6020A			1	U	1	U	1	U	1	U	1	U
Manganese	7439-96-5	SW6020A			0.002	U	0.000871	U	0.002	U	0.00943	J	0.000872	J
Nickel	7440-02-0	SW6020A			0.0006	UJ	0.002	UJ	0.002	U	0.00356	U	0.00196	U
Potassium	7440-09-7	SW6020A			1	U	1	U	1	U	1	U	1	U

Table B25 - Blank Samples
Metals

		Sample #:	FB-01		FB-02		FB-03		RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z		Z		Z		Z	
		Matrix:	Water		Water		Water		Water		Water		Water	
		Sample Type:	Field Blank		Field Blank		Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
		Date Sampled:	5/6/2014		5/19/2014		5/20/2014		5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/13/2014		5/28/2014		5/28/2014		5/15/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Selenium	7782-49-2	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Silver	7440-22-4	SW6020A			0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Sodium	7440-23-5	SW6020A			1	U	1	U	1	U	1	U	1	U
Thallium	7440-28-0	SW6020A			0.002	U	0.002	U	0.00037	J	0.000511	J	0.000567	J
Vanadium	7440-62-2	SW6020A			0.000242	U	0.00117	U	0.00139	U	0.00124	U	0.000185	U
Zinc	7440-66-6	SW6020A			0.025	U	0.025	U	0.025	U	0.0113	J	0.025	U
Mercury	7439-97-6	SW7470A	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U

Table B25 - Blank Samples
Metals

		Sample #:	RB-04		RB-05	
		Sampling Location:	Z		Z	
		Matrix:	Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank	
		Units:	mg/l		mg/l	
		Date Sampled:	5/19/2014		5/20/2014	
		Date Analyzed:	5/28/2014		5/28/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q
Aluminum	7429-90-5	SW6010C				
Antimony	7440-36-0	SW6010C				
Arsenic	7440-38-2	SW6010C				
Barium	7440-39-3	SW6010C				
Beryllium	7440-41-7	SW6010C				
Cadmium	7440-43-9	SW6010C				
Calcium	7440-70-2	SW6010C				
Chromium	7440-47-3	SW6010C				
Cobalt	7440-48-4	SW6010C				
Copper	7440-50-8	SW6010C				
Iron	7439-89-6	SW6010C				
Lead	7439-92-1	SW6010C				
Magnesium	7439-95-4	SW6010C				
Manganese	7439-96-5	SW6010C				
Nickel	7440-02-0	SW6010C				
Potassium	7440-09-7	SW6010C				
Selenium	7782-49-2	SW6010C				
Silver	7440-22-4	SW6010C				
Sodium	7440-23-5	SW6010C				
Thallium	7440-28-0	SW6010C				
Vanadium	7440-62-2	SW6010C				
Zinc	7440-66-6	SW6010C				
Aluminum	7429-90-5	SW6020A	0.00992	J	0.014	J
Antimony	7440-36-0	SW6020A	0.002	U	0.002	U
Arsenic	7440-38-2	SW6020A	0.002	U	0.002	U
Barium	7440-39-3	SW6020A	0.002	U	0.002	U
Beryllium	7440-41-7	SW6020A	0.002	U	0.002	U
Cadmium	7440-43-9	SW6020A	0.001	U	0.001	U
Calcium	7440-70-2	SW6020A	1	U	1	U
Chromium	7440-47-3	SW6020A	0.002	U	0.002	U
Cobalt	7440-48-4	SW6020A	0.002	U	0.002	U
Copper	7440-50-8	SW6020A	0.002	U	0.002	U
Iron	7439-89-6	SW6020A	0.0104	U	0.0108	U
Lead	7439-92-1	SW6020A	0.002	U	0.002	U
Magnesium	7439-95-4	SW6020A	1	U	1	U
Manganese	7439-96-5	SW6020A	0.00108	U	0.000779	U
Nickel	7440-02-0	SW6020A	0.000974	UJ	0.000712	UJ
Potassium	7440-09-7	SW6020A	1	U	1	U

Table B25 - Blank Samples
Metals

		Sample #:	RB-04		RB-05	
		Sampling Location:	Z		Z	
		Matrix:	Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank	
		Units:	mg/l		mg/l	
		Date Sampled:	5/19/2014		5/20/2014	
		Date Analyzed:	5/28/2014		5/28/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q
Selenium	7782-49-2	SW6020A	0.002	U	0.002	U
Silver	7440-22-4	SW6020A	0.002	U	0.002	U
Sodium	7440-23-5	SW6020A	1	U	1	U
Thallium	7440-28-0	SW6020A	0.002	U	0.002	U
Vanadium	7440-62-2	SW6020A	0.0012	U	0.000246	U
Zinc	7440-66-6	SW6020A	0.025	U	0.025	U
Mercury	7439-97-6	SW7470A	0.0002	U	0.0002	U

Table B25-A - Blank Samples
Metals
(Detections Only)

		Sample #:	RB-01		RB-02		RB-03	
		Sampling Location:	Z		Z		Z	
		Matrix:	Water		Water		Water	
		Sample Type:	Rinsate Blank		Rinsate Blank		Rinsate Blank	
		Units:	mg/l		mg/l		mg/l	
		Date Sampled:	5/6/2014		5/14/2014		5/16/2014	
		Date Analyzed:	5/15/2014		5/20/2014		5/20/2014	
Parameter	CAS No.	Analysis	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	SW6020A			0.0239			
Calcium	7440-70-2	SW6020A			0.203	J		
Chromium	7440-47-3	SW6020A			0.0172			
Copper	7440-50-8	SW6020A			0.00051	J		
Iron	7439-89-6	SW6020A			0.811		0.0164	J
Lead	7439-92-1	SW6020A			0.000276	J		
Manganese	7439-96-5	SW6020A			0.00943	J	0.000872	J
Thallium	7440-28-0	SW6020A	0.00037	J	0.000511	J	0.000567	J
Zinc	7440-66-6	SW6020A			0.0113	J		

Appendix C
Geophysical Report

FINAL REPORT
GEOPHYSICAL INVESTIGATION
BEECH BOTTOM PLANT AND INDUSTRIAL SITE
WEST VIRGINIA

Prepared for TechLaw, Inc.
Wheeling, WV

Prepared by GeoView, Inc.
St. Petersburg, FL

June 9, 2014

Mr. Suddha Graves
TechLaw, Inc.
2208 Warwood Avenue
Wheeling, West Virginia 26003

Subject: Transmittal of Final Report for Geophysical Investigation
Beech Bottom Plant and Industrial Site
West Virginia
GeoView Project Number 20918

Dear Mr. Graves,

GeoView, Inc. (GeoView) is pleased to submit the final report that summarizes and presents the results of the geophysical investigation performed at the above referenced site. Time domain electromagnetics, electronic utility locators, and ground penetrating radar were used to help determine the presence of buried metallic debris and underground utilities that may be present within the project site. GeoView appreciates the opportunity to have assisted you on this project. If you have any questions or comments about the report, please contact us.

Sincerely,

GEOVIEW, INC.

Chris Taylor, P.G.
Vice President
Florida Professional Geologist Number 2256

1.0 Introduction

A geophysical investigation was conducted at the former Wheeling Corrugated Company in Beech Bottom, West Virginia. Of concern was the possible presence of buried drums and other buried debris within two areas of the project site and the presence of underground utilities proximate to 30 proposed soil borings and monitoring wells. The geophysical investigation was conducted using time domain electromagnetics (TDEM), electronic utility locators (EULs), and ground penetrating radar (GPR). The investigation was conducted from April 29, 2014 to May 1, 2014.

2.0 Site Description

The area of investigation was comprised of two geophysical survey areas and 30 proposed subsurface intrusions. The two survey areas are shown as Areas A and B on Figure 1. Area A was approximately 2.1 acres in size. Area B is approximately 0.9 acres in size. Ground cover across A was crushed stone, asphalt, dirt and concrete. The majority of Area A was clear and accessible to the geophysical investigation. Ground cover across the southern portion of Area B was crushed stone, asphalt and dirt. The northern portion of Area B was densely wooded. GeoView personnel used machetes and saws to cut paths through areas of dense vegetation to allow for access to the geophysical survey. Drum carcasses and other partially buried metal were observed along the embankment on the northern and northeastern side of Area B during the investigation. Objects of potential magnetic interference, which did influence the EM-61 instrument response, were located within the survey areas. These objects included storm water drains, reinforced concrete, former foundations, rail tracks, manhole covers, cars, and piles of scrap metal.

The 30 proposed subsurface intrusion areas were scattered throughout the 33 acre site. The borings were located both on the exterior and interior of the buildings. The locations of the exterior borings are shown Figure 1. The interior borings are not shown on Figure 1 due to the lack of GPS positioning.

There were periods of rain during the duration of the geophysical investigation. The saturated ground conditions may have somewhat limited the maximum depth of penetration of the GPR signal compared to if the survey was conducted when the soils were dry. However, the extent to which it was limited is not suspected to be significant. The EM-61 data was not affected by the saturated soil conditions. In addition, the EM-61 survey was not performed when

thunderstorms where active in the area. Therefore, the chance that nearby electrical storms affected the EM-61 data is negligible.

3.0 Description of Geophysical Investigation

The survey grids for the geophysical investigation were established along transect lines spaced 5 to 10 feet (ft) apart. A discussion of the limitations of the survey grid is provided in Appendix A2.1.

Within Areas A and B, the TDEM survey was conducted using a Geonics EM61-MK2 Buried Metal Detector (EM-61). The EM-61 survey was conducted by towing the EM-61 throughout accessible areas of the project site. The EM-61 data was collected on transect lines spaced 5 ft apart and data readings were collected every 0.6 ft along each transect line. Within Area B, the transect spacing was modified due to the dense vegetation. The locations of the transect lines were recorded using a Trimble GeoXH Global Positioning System (GPS). A Wide Area Augmentation System (WAAS) was used to augment GPS with additional signals to increase the reliability, integrity, accuracy and availability of the GPS signal. By using WAAS, an accuracy of less than 3 ft in the horizontal dimension can be achieved. The GPS accuracy within the majority of Area A and the area around the proposed borings was within 3 ft. The GPS accuracy within Area B was adversely affected the dense tree canopy and ranged from 2 to 10 ft.

The lateral sensitivity of the EM equipment to surficial metallic debris is usually 4 feet of less. In such areas, it is not possible to discriminate which portion of the instrument response is being caused by the surficial debris and which portion (if any) is being cause by buried metallic debris. Accordingly, it is usually not possible to determine if lesser quantities of buried metallic debris is present within 4 ft of areas where surficial metallic debris is present. A description of the EM-61 technique and the methods employed for buried debris studies is provided in Appendix A2.2.

The GPR survey was conducted across areas of elevated EM-61 response to characterize the EM anomalies and conducted in the area of the proposed borings to demarcate utilities. The GPR data was collected using a GSSI radar system with a 400 megahertz antenna and a Mala radar system with 800 and 500-megahertz antennas. A time range setting of 30 to 60 nano-seconds was used. This time range setting provided information to an estimated depth of 3 to 7 ft below land surface (bls). A description of the GPR technique and the methods employed for buried debris studies is provided in Appendix A2.3.

The electronic utility locate (EUL) equipment was used to help identify any underground utilities proximate to the proposed soil borings. Utilities were identified using the EUL method in both the passive and active mode. The passive mode was used to identify electrical lines. The active mode was used to trace out metallic pipes or pipes that had tracing wires. A description of the EUL method is provided in Appendix A2.4.

4.0 Survey Results

4.1 Geophysical Study within Areas A and B

The results of the geophysical investigation for Areas A and B are presented in Figures 2 and 3, respectively. A color contour map of the EM-61 data for Area A is presented in Figure 9. A color contour map of the EM-61 data for Area B is presented in Figure 10. The geophysical investigation identified 13 anomalous areas within Area A and 14 anomalous areas within Area B. The locations of the anomalies are outlined in blue as Anomalies 1 through 27 on the figures and were marked in the field with marking paint and/or wire pin flags. The majority of the anomalies are suspected to be areas of buried metallic debris. The exceptions are Anomaly 1, which may be a buried vault and Anomaly 6, which appears to be sections of a buried railway spur. The anomaly areas within the northern portion of Area B may be partially due to the presence of partially buried scrap metal within the northern wooded areas. The remaining areas of significantly elevated EM response were attributable to catch basins, utility junctions, reinforced concrete or other visible metallic objects. It is noted that there were additional areas of slightly elevated EM response across the survey areas. However, due to their low levels of response and the lack of any associated GPR anomalies, these areas were not called out as areas of buried debris. The slightly elevated EM responses may be due to small areas of shallow, scattered debris.

Coordinates of the centers of each of the anomaly areas are provided in Table 1. Examples of the GPR data collected at the project site are provided in Appendix 1. A discussion of the limitations of the geophysical methods used in this investigation is provided in Appendix 2.5.

4.2 Utility Locate Survey

The utility locate survey identified several utilities proximate to the proposed soil borings and monitoring wells. The locations of these utilities were marked on the ground surface with marking paint and/or wire pin flags. If a suspected utility was located near a proposed boring, an alternative boring location was marked in the field. The locations of the identified utilities are provided on

Figures 2 through 8. The estimated depths of the underground utilities (in feet below land surface [bls]) are provided. In general the estimated depths of the underground utilities are accurate to within a tolerance of +/- 25 percent. It is noted that the survey was not able to locate the deep sewer lines that were visible entering the wastewater basin in the northern portion of Area A. The depth of these sewer lines was beyond the depth of penetration of the GPR signal.

If determinable, the type of underground utility is also indicated. The location of the underground utilities was also indicated on the ground surface using spray paint and/or wire pin flags. GeoView uses the American Public Works Association (APWA) uniform color codes for temporary marking of underground utilities which is as follows:

The following color designation was used:

- Power (both active and inactive): red
- Telecommunications: orange or red/orange
- Water: blue
- Sanitary: green
- Gas: yellow (shown in black/yellow in figures)
- Unknown: Pink (magenta in figures)

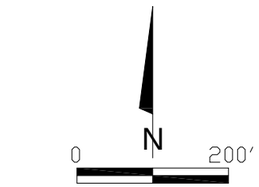
Table 1 – Anomaly Coordinates

Anomaly	Easting	Northing	Approximate Size (square feet)	Comment
1	1645183	627366	40	Possible Vault
2	1644856	627229	2000	Suspected Buried Debris
3	1644764	627109	600	Suspected Buried Debris
4	1644754	627068	150	Suspected Buried Debris
5	1644775	627060	30	Suspected Buried Debris
6	1645051	627241	300 ft in length	Possible Railway Spur
7	1645064	627369	20	Suspected Buried Debris
8	1645129	627340	15	Suspected Buried Debris
9	1644906	627264	30	Suspected Buried Debris
10	1644792	627261	40	Suspected Buried Debris
11	1644805	627162	10	Suspected Buried Debris
12	1644777	627039	15	Suspected Buried Debris
13	1644828	627095	70	Suspected Buried Debris
14	1644904	627553	580	Suspected Buried Debris
15	1644965	627569	50	Suspected Buried Debris
16	1644947	627612	230	Suspected Buried Debris
17	1644998	627616	50	Suspected Buried Debris
18	1645002	627632	110	Suspected Buried Debris
19	1645081	627587	40	Suspected Buried Debris
20	1644903	627626	270	Suspected Buried Debris
21	1644870	627645	160	Suspected Buried Debris
22	1644867	627597	1100	Suspected Buried Debris
23	1644944	627693	5000	Suspected Buried Debris
24	1644973	627705	210	Suspected Buried Debris
25	1644991	627690	160	Suspected Buried Debris
26	1645009	627679	180	Suspected Buried Debris
27	1645071	627648	800	Suspected Buried Debris

U.S. State Plane, NAD1983 (Conus), West Virginia North 4701, Feet

Note: Due to the slope and vegetation, the northern boundaries of Anomalies 23 through 27 were not well defined and therefore the approximate sizes should be considered approximate.

APPENDIX 1
FIGURES AND EXAMPLES OF GPR DATA



SCALE: 1"=200' APPROXIMATE

EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
	BOUNDARY OF GEOPHYSICAL SURVEY AREA
A-2	LOCATION OF GEOPHYSICAL ANOMALY WITH DESIGNATION

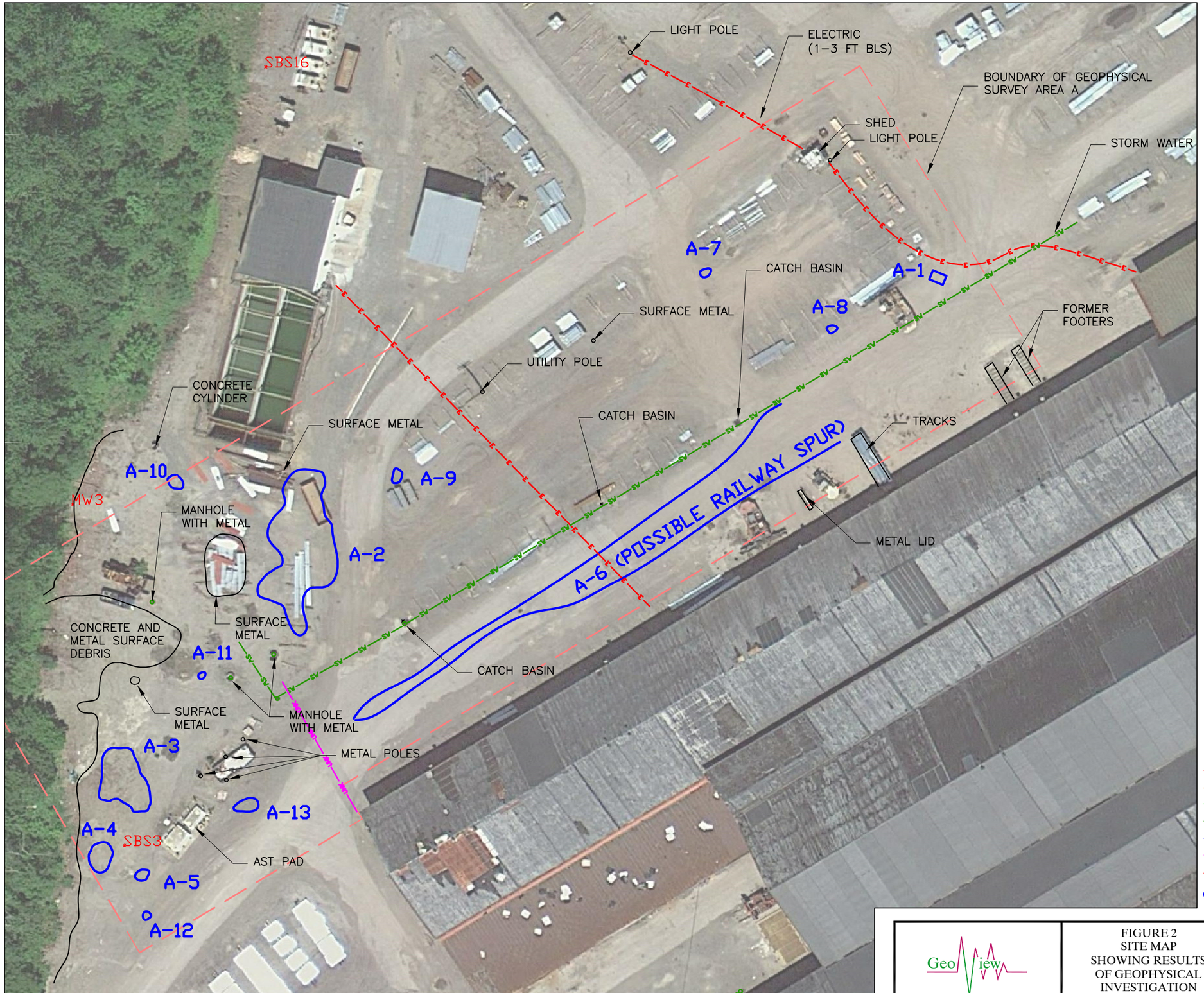
Geo View

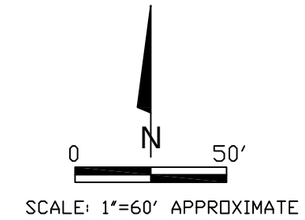
FIGURE 1
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(OVERVIEW)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14





EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
	BOUNDARY OF GEOPHYSICAL SURVEY AREA
A-2	LOCATION OF GEOPHYSICAL ANOMALY WITH DESIGNATION

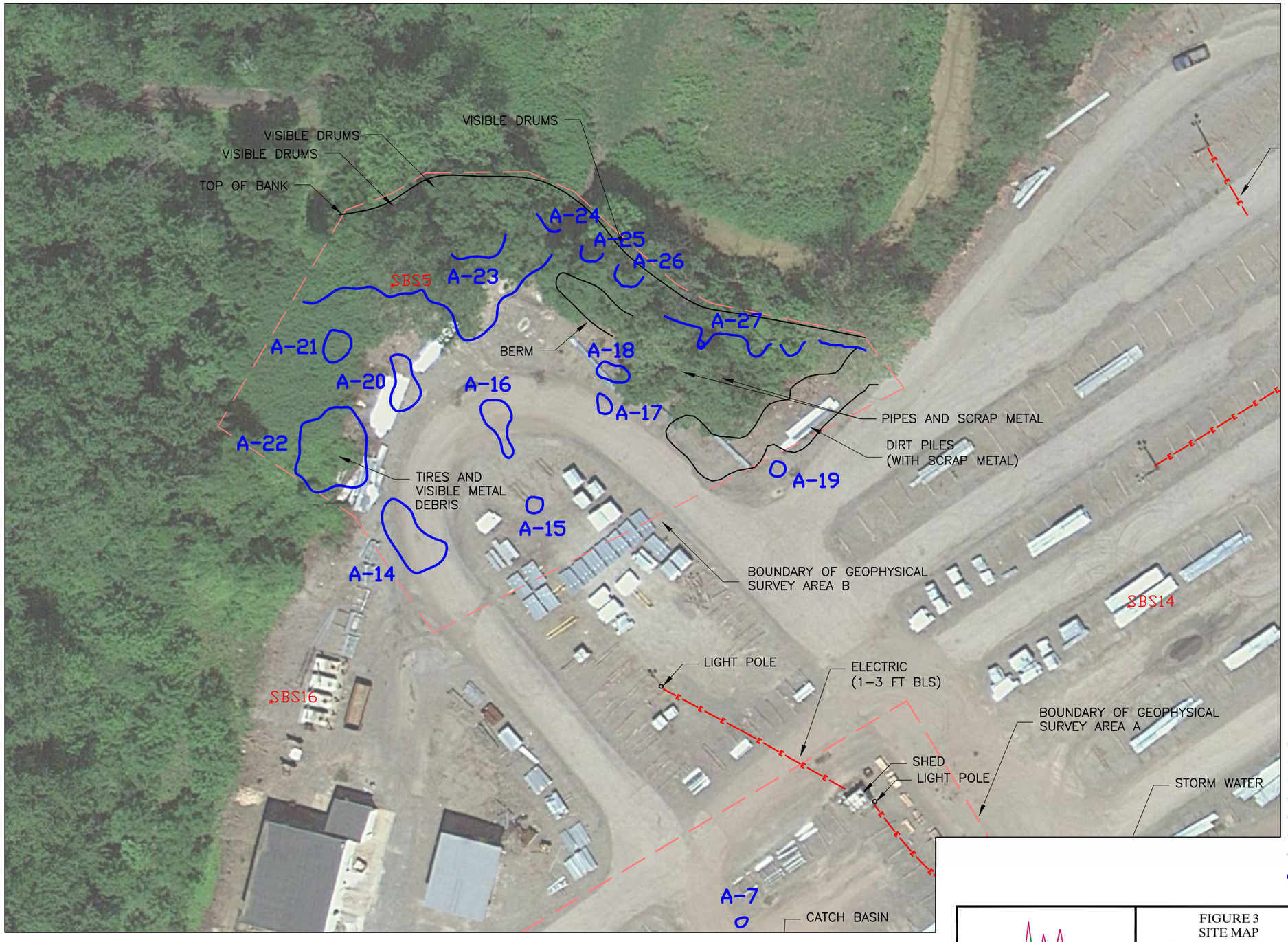
Geo View

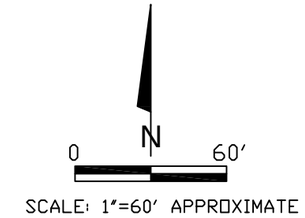
FIGURE 2
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(GEOPHYSICAL AREA A)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14





EXPLANATION

- E — LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
- COM — LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
- S — LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
- SW — LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
- W — LOCATION OF SUSPECTED UNDERGROUND WATER LINE
- UNK — LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
- BOUNDARY OF GEOPHYSICAL SURVEY AREA
- A-2 — LOCATION OF GEOPHYSICAL ANOMALY WITH DESIGNATION

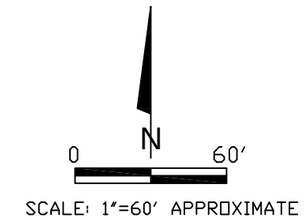
Geo View

FIGURE 3
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(GEOPHYSICAL AREA B)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14



EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
GAS	LOCATION OF SUSPECTED UNDERGROUND GAS LINE
MW6	LOCATION OF PROPOSED MONITORING WELL
SBS11	LOCATION OF PROPOSED SOIL BORING

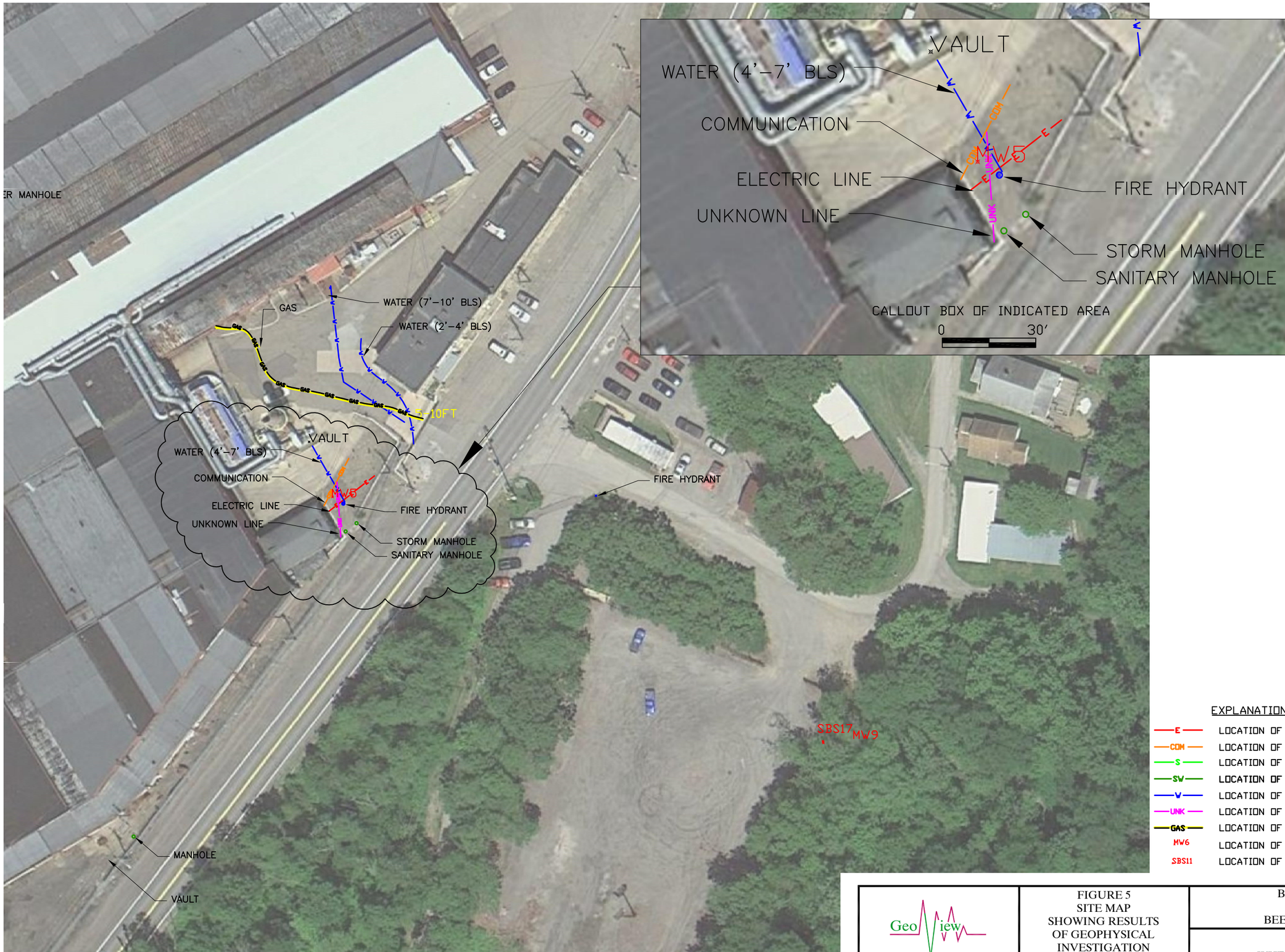
Geo View

FIGURE 4
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(NORTHEASTERN AREA)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14



N

0 60'

SCALE: 1"=60' APPROXIMATE

EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
GAS	LOCATION OF SUSPECTED UNDERGROUND GAS LINE
MW6	LOCATION OF PROPOSED MONITORING WELL
SBS11	LOCATION OF PROPOSED SOIL BORING

Geo View

FIGURE 5
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(EASTERN AREA)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14

N

0 60′

SCALE: 1″=60′ APPROXIMATE

EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SV	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
GAS	LOCATION OF SUSPECTED UNDERGROUND GAS LINE
MW6	LOCATION OF PROPOSED MONITORING WELL
SBS11	LOCATION OF PROPOSED SOIL BORING

Geo View

FIGURE 6
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(SOUTH EASTERN AREA)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14

N

0 60'

SCALE: 1"=60' APPROXIMATE

EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
W	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
GAS	LOCATION OF SUSPECTED UNDERGROUND GAS LINE
MW6	LOCATION OF PROPOSED MONITORING WELL
SBS11	LOCATION OF PROPOSED SOIL BORING

Geo View

FIGURE 7
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(SOUTHERN AREA)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14

N

0 60′

SCALE: 1″=60′ APPROXIMATE

EXPLANATION

E	LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL LINE
COM	LOCATION OF SUSPECTED UNDERGROUND COMMUNICATION LINE
S	LOCATION OF SUSPECTED UNDERGROUND SEWER LINE
SW	LOCATION OF SUSPECTED UNDERGROUND STORM WATER LINE
V	LOCATION OF SUSPECTED UNDERGROUND WATER LINE
UNK	LOCATION OF SUSPECTED UNDERGROUND UNKNOWN LINE
GAS	LOCATION OF SUSPECTED UNDERGROUND GAS LINE
MW6	LOCATION OF PROPOSED MONITORING WELL
SBS11	LOCATION OF PROPOSED SOIL BORING

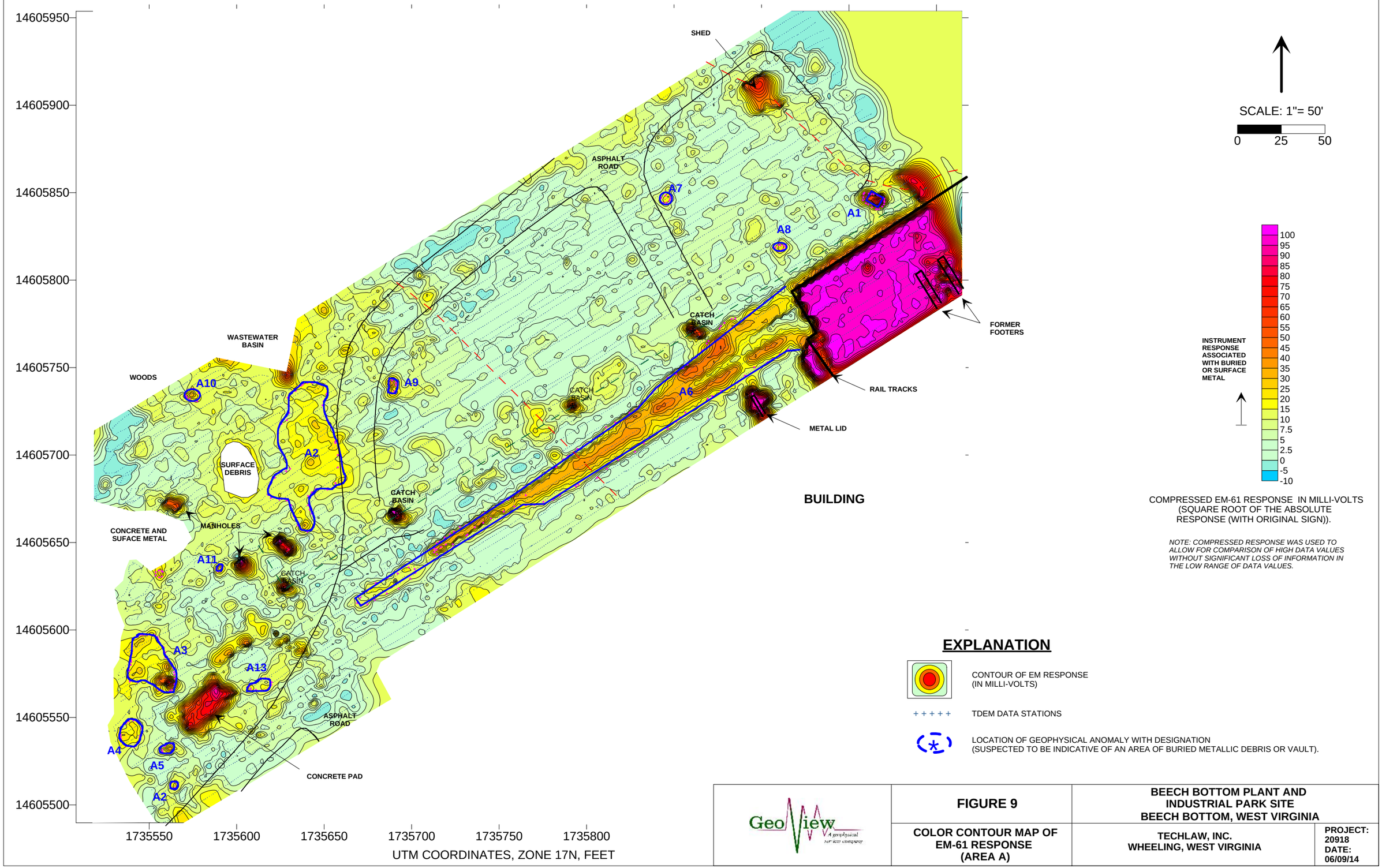
Geo View

FIGURE 8
SITE MAP
SHOWING RESULTS
OF GEOPHYSICAL
INVESTIGATION
(WESTERN AREA)

BEECH BOTTOM PLANT AND
INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14



GeoView

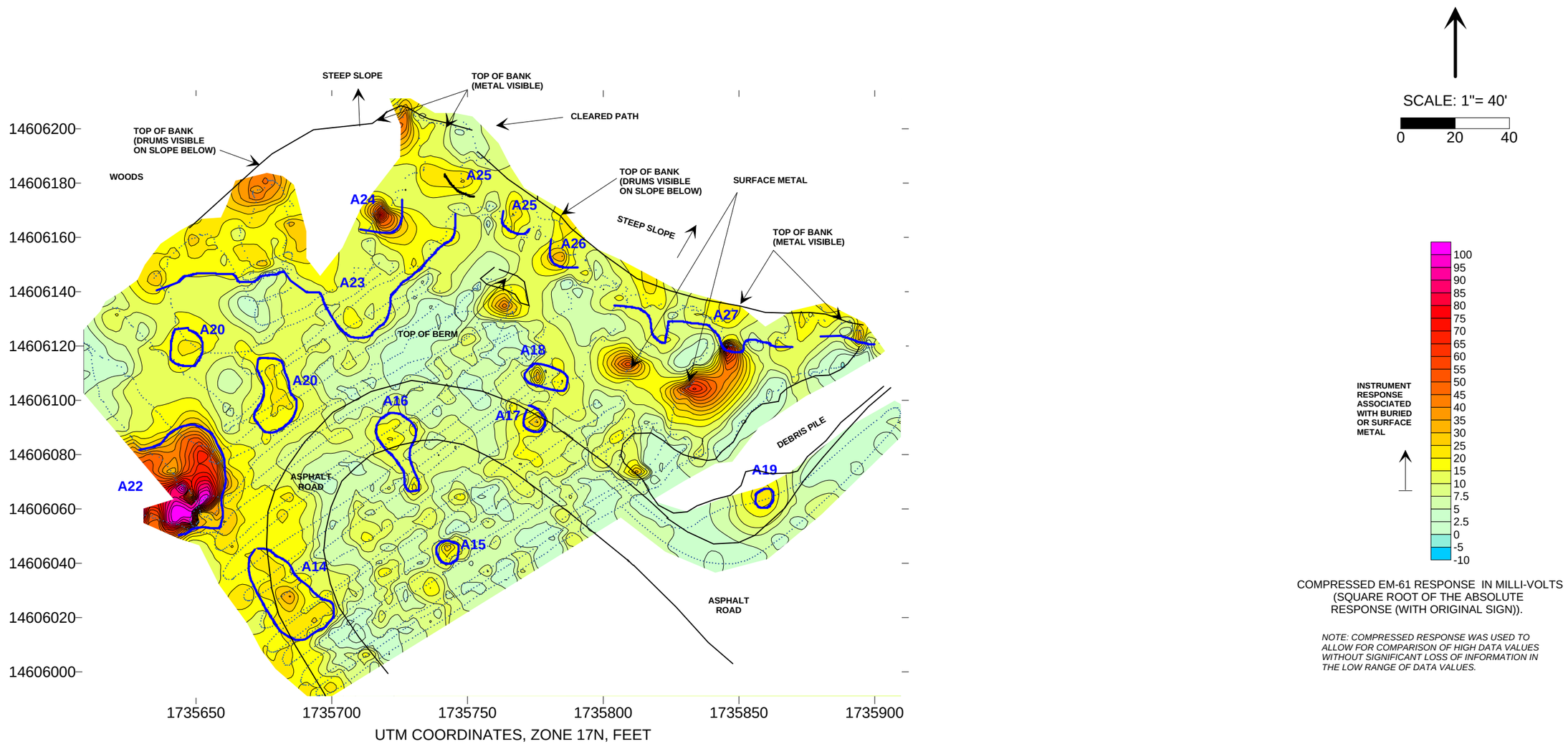
FIGURE 9

COLOR CONTOUR MAP OF EM-61 RESPONSE (AREA A)

BEECH BOTTOM PLANT AND INDUSTRIAL PARK SITE
BEECH BOTTOM, WEST VIRGINIA

TECHLAW, INC.
WHEELING, WEST VIRGINIA

PROJECT: 20918
DATE: 06/09/14



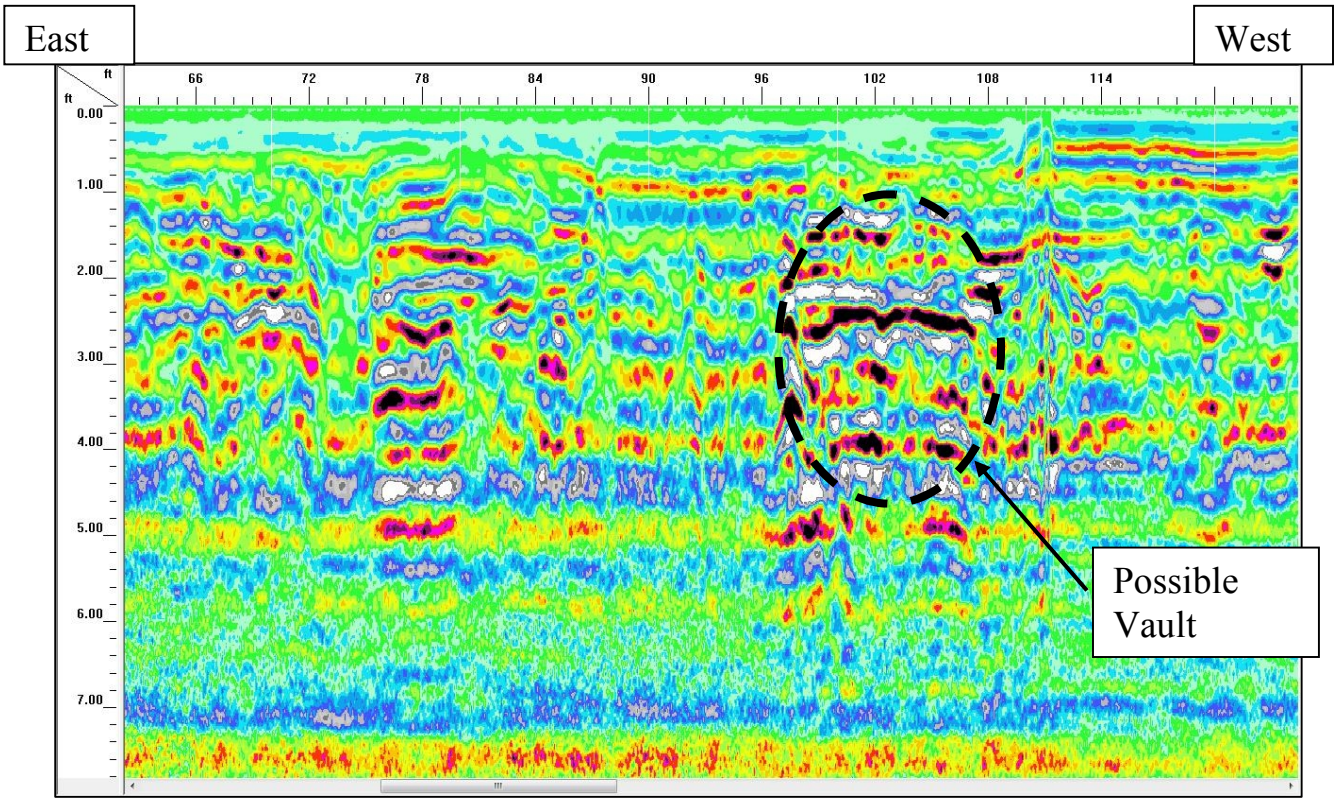
EXPLANATION

CONTOUR OF EM RESPONSE (IN MILLI-VOLTS)

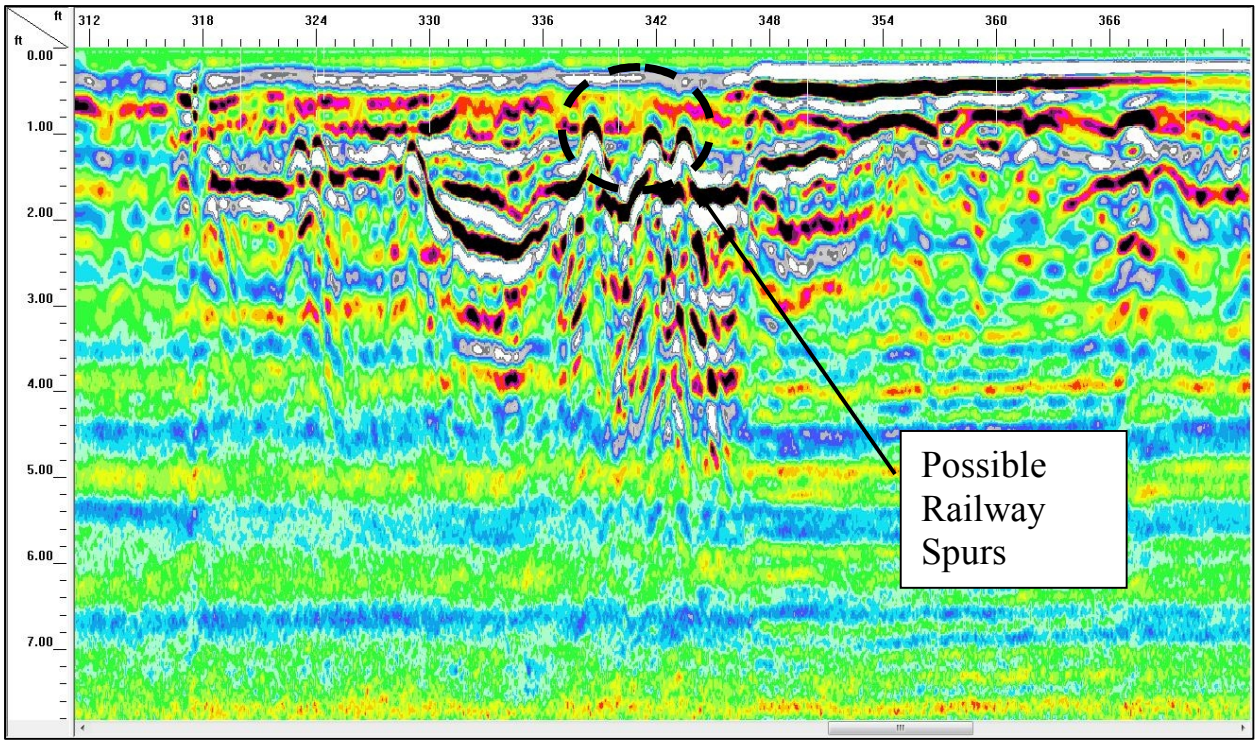
+ + + + + TDEM DATA STATIONS

LOCATION OF GEOPHYSICAL ANOMALY WITH DESIGNATION (SUSPECTED TO BE INDICATIVE OF AN AREA OF BURIED METALLIC DEBRIS).

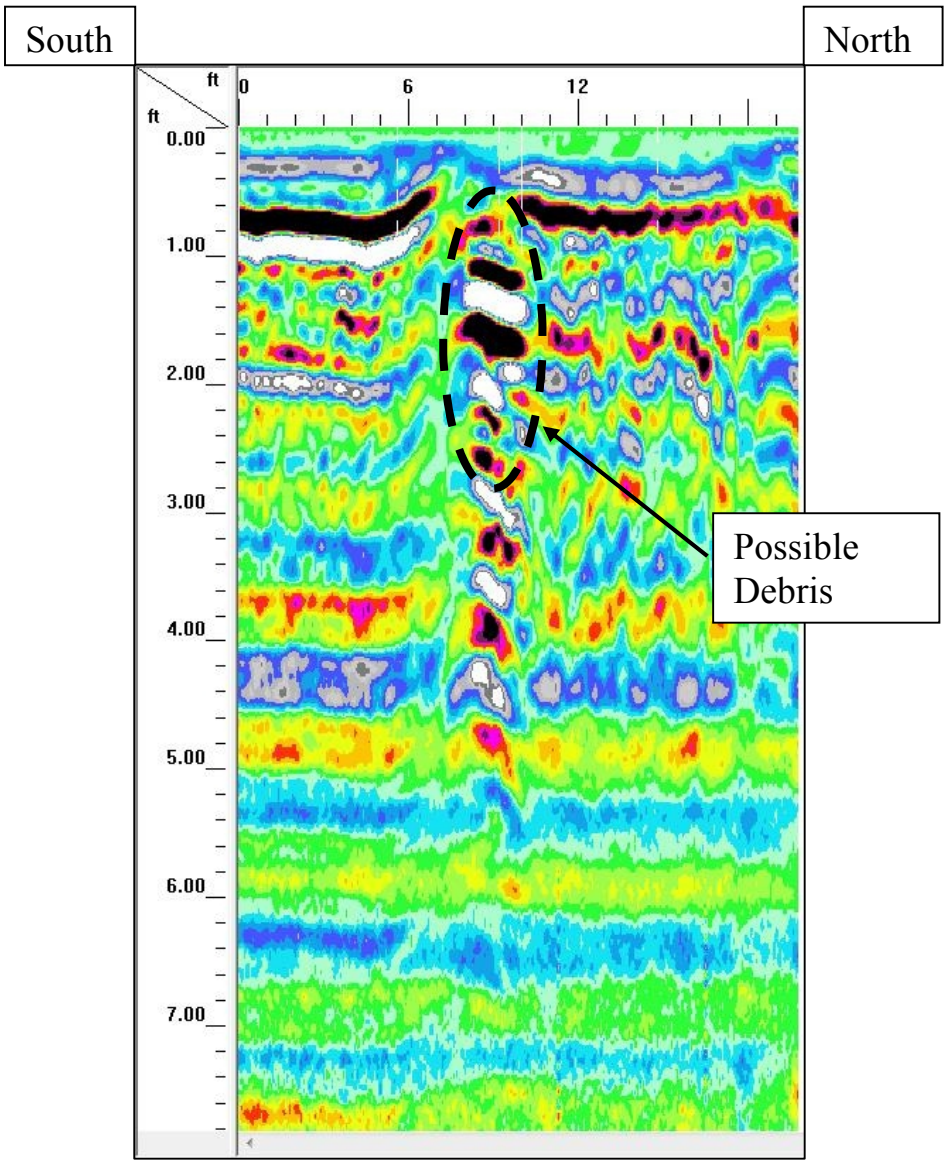
GeoView A geophysical services company	FIGURE 10	BEECH BOTTOM PLANT AND INDUSTRIAL PARK SITE BEECH BOTTOM, WEST VIRGINIA	
	COLOR CONTOUR MAP OF EM-61 RESPONSE (AREA B)	TECHLAW, INC. WHEELING, WEST VIRGINIA	PROJECT: 20918 DATE: 06/09/14



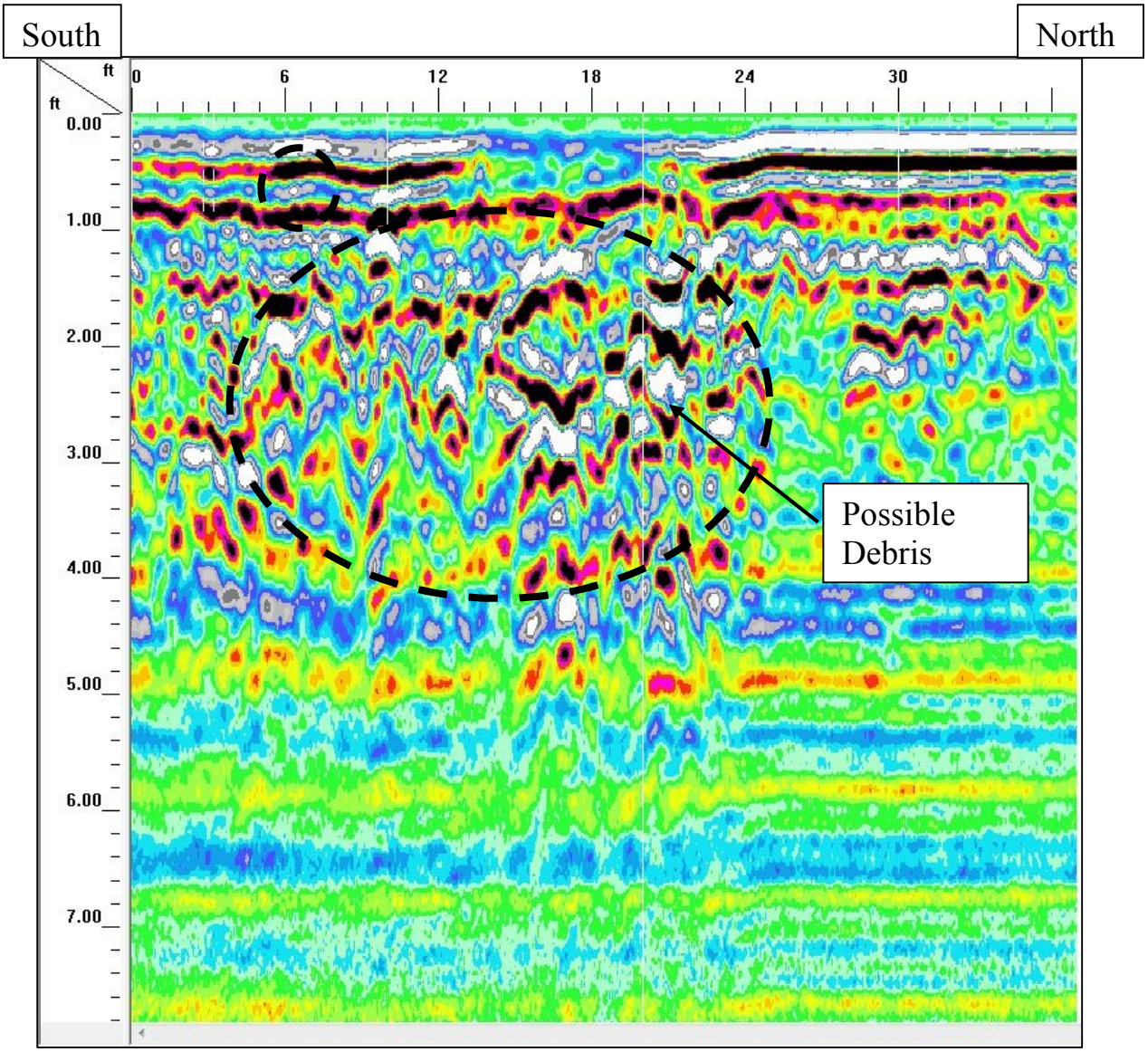
GPR TRANSECT ACROSS ANOMALY 1 (POSSIBLE BURIED VAULT) WITHIN AREA A



GPR TRANSECT ACROSS ANOMALY 6 (POSSIBLE BURIED RAILWAY SPURS) WITHIN AREA A



GPR TRANSECT ACROSS ANOMALY 15 (POSSIBLE BURIED DEBRIS)
WITHIN AREA B



GPR TRANSECT ACROSS ANOMALY 16 (POSSIBLE BURIED DEBRIS)
WITHIN AREA B

APPENDIX 2
DESCRIPTION OF GEOPHYSICAL METHODS, SURVEY METHODOLOGIES AND LIMITATIONS

A2.1 On Site Measurements

The measurements that were collected and used to create the site map were made using a fiberglass measuring tape. Right angles were estimated using the exterior walls of adjacent buildings or other features. The degree of accuracy of such an approach is typically +/- 5% for lengths and +/- 2.5 degrees for angles.

The positions of the transects and anomalies were recorded using a Trimble GeoXH with an external antenna and/or a Novatel Smart V1 antenna. These GPS systems typically have an accuracy of 1 to 3 ft.

A2.2 Time Domain Electromagnetics

The TDEM (EM-61) method evaluates the magnitude of an induced (secondary) electromagnetic (EM) field caused by a primary EM field after that primary field is suddenly shut off.

During a TDEM (EM-61) sounding, an electrical current is caused to flow in a horizontal transmitter coil located near the ground. The current is maintained until a static magnetic field is established. The current in that coil is then rapidly terminated. This produces a strong electromotive force that induces eddy (secondary) currents in the ground. The eddy currents are caused by the presence of subsurface conductors. With increasing time, the strength of the eddy currents diminishes. The eddy currents, when they are still present induce a voltage in the receiver coil that is proportional to eddy current strength. The eddy current strength also depends on the amount of metal in the subsurface. The more metal present, the longer the eddy currents persist. Field measurement consists of reading the output voltage from the receiver coil registered at a particular time after field shut-off. If no metal is present near the coil, then there are no eddy currents at a late time and the reading is near zero. If metal is present near the coil, then the eddy currents persist for a longer time, and the reading is some positive number. By sensing only the response from the buried metal, the method is capable of detecting targets in highly conductive environments. For TDEM surveys the Geonics Ltd. Model EM-61 MKII metal detection (EM-61) system is used. The EM-61 instrument response is recorded on field-portable computerized data logger (Juniper Allegro, Digital Data Logger) for subsequent data processing and contouring. The compressed amplitude response of the EM-61 data was

contoured using Surfer^{tm} contouring software. The compressed amplitude is the square root of the absolute response with the original sign. Since the EM-61 response can be extremely dynamic, the compressed amplitude allows the comparison of high readings without significant loss of information in the low range of data.

The EM-61 survey is performed along predetermined transect lines. The transect lines are typically uni-directional and oriented parallel to the long axis of the site. The spacing between transects ranges from 2 to 20 ft, depending upon the desired size of the target to be identified. Approach is typically +/-5% for both lengths and angles in degrees.

A2.3 Ground Penetrating Radar

Ground Penetrating Radar (GPR) consists of a set of integrated electronic components, which transmits high frequency (200 to 1500 megahertz [MHz]) electromagnetic waves into the ground and records the energy reflected back to the ground surface. The GPR system consists of an antenna, which serves as both a transmitter and receiver, and a profiling recorder that both processes the incoming signal and provides a graphic display of the data. The GPR data can be reviewed as both printed hard copy output or recorded on the profiling recorder's hard drive for later review. GeoView uses a Mala GPR system.

A GPR survey provides a graphic cross-sectional view of subsurface conditions. This cross-sectional view is created from the reflections of repetitive short-duration electromagnetic (EM) waves that are generated as the antenna is pulled across the ground surface. The reflections occur at the subsurface contacts between materials with differing electrical properties. The electrical property contrast that causes the reflections is the dielectric permittivity that is directly related to conductivity of a material. The GPR method is commonly used to identify such targets as underground utilities, underground storage tanks or drums, buried debris, voids, rebar or geological features.

The greater the electrical contrast between the surrounding materials (earth or concrete) and target of interest, the greater the amplitude of the reflected return signal. Unless the buried object is metal, only part of the signal energy will be reflected back to the antenna with the remaining portion of the signal continuing to propagate downward to be reflected by deeper features. If there is little or no electrical contrast between the target interest and surrounding earth materials it will be very difficult if not impossible to identify the object using GPR.

A GPR survey is conducted along survey lines (transects) that are measured paths along which the GPR antenna is moved. An integrated survey wheel electronically records the distance of the GPR system along the transect lines.

Depth estimates to the top of the debris is determined by dividing the time of travel of the GPR signal from the land surface to the top of the GPR signal reflection associated with the debris by the velocity of the GPR signal. The velocity of the GPR signal is usually obtained from published tables of the GPR signal traveling through unsaturated soils (4 to 6 nano-seconds per foot two-way travel time). The accuracy of GPR-derived depths typically ranges from 20 to 40 percent of the total depth.

The analysis and collection of GPR data is both a technical and interpretative skill. The technical aspects of the work are learned from both training and experience. Interpretative skills for debris studies are developed by having the opportunity to compare GPR data collected in numerous settings to the results from confirmatory studies performed at the same locations.

The ability of GPR to collect interpretable information at a project site is limited by the attenuation (absorption) of the GPR signal within subsurface soil materials. Once the GPR signal has been attenuated at a particular depth, information regarding deeper features will not be obtained. GeoView can make no warranties or representations of geological conditions that may be present beyond the depth of investigation or resolving capability of the GPR equipment or in areas that were not accessible to the geophysical investigation.

A2.4 Electronic Utility Locating

A SubSite 95R, Radio Detection RD 4000 and RD8000 Systems are used by GeoView to locate underground utilities using conventional means. The system consists of a dual-function receiver and transmitter. The receiver can be operated in two modes: active and passive. In the passive mode the receiver detects the presence of underground utilities that are energized by a 60 Hertz cycle current. These utilities can either be those actually carrying electrical power or those utilities that are both metallic and sufficiently close to the electrical lines to have an electrical field induced within them.

In the active mode, an electrical current is deliberately induced into the utility by the transmitter. The frequency of this field can be varied from 1 to 80 Hertz. The electrical field is induced using a transmitter which is either directly attached to the utility, placed on or above the utility or attached to an induction

coil which is placed around the utility. Depths of underground utilities can be determined when the EUL equipment is being used in the active mode. Depths are typically accurate to within 10 percent of the total utility depth.

A2.5 Limitations

The ability to collect interpretable information at a project site using the GPR and EUL methods is limited by the physical properties of both the underground soils and the underground utilities. Specific to the GPR, the depth of penetration of the GPR signal limited by the attenuation (absorption) of the GPR signal within subsurface soil materials. Once the GPR signal has been attenuated at a particular depth, information regarding deeper features will not be obtained. The ability of GPR to resolve a particular utility is a function of the contrast in dielectric constants (conductivity) between the particular utility and the surrounding soils. The larger the contrast the more easily the pipe can be resolved by the GPR. For example, the difference in dielectric constants between sand and a PVC or ceramic pipe is relatively small in comparison to the difference between sand and a steel pipe. Accordingly, when using GPR, a PVC pipe is more difficult (and sometimes impossible) to resolve in comparison to a steel pipe.

The ability of GPR to resolve a utility is also controlled by the utilities size and depth. In general, GPR loses 0.5 to 1 inch of resolution per foot of burial. For example, it would not be possible to resolve a 2-inch diameter pipe at a depth greater than 2 to 4 ft.

Utilities can be identified using the EUL method in both the passive and active mode. In the passive mode, the EUL detects underground utilities that are energized by a 60 Hertz current. These utilities can be either actively carrying an electrical current or may be non-electrical metallic utilities that have been energized by a nearby electrical utility. It is because of this energizing that a particular utility may be incorrectly identified as an electrical utility. For the EUL equipment to identify an electrical utility in the passive mode, the utility must be carrying a sufficient amperage (load). If the load on a particular utility is low or zero then it will not be possible to identify the utility in this mode.

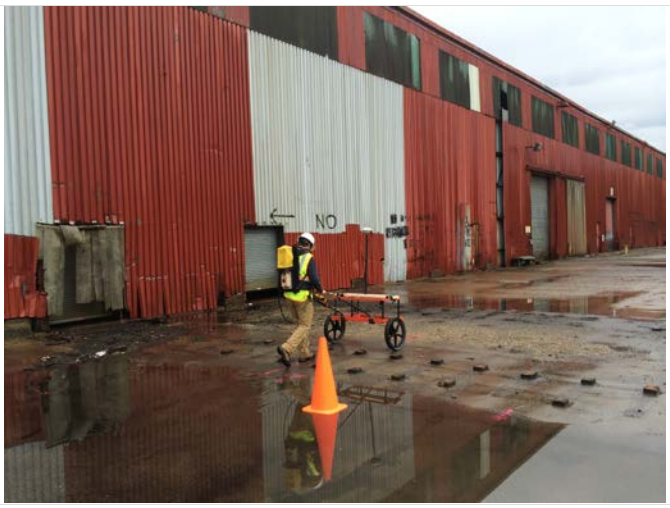
In the active mode, the EUL is directly connected to the particular utility and an energizing current is induced. This method only works when the utility is metallic, if a particular utility changes from a metallic to non-metallic then the EUL will not be able to identify the utility beyond the point of that transition. Some non-metallic pipelines, such as gas pipelines, have metallic trace wires

emplaced along the pipeline. If this wire is broken or corroded then it will not be possible to locate the utility beyond that point.

It is noted that underground utilities at the project site were identified using GPR and EUL methods only. Physical probing or other visual confirmation for the presence and/or identification of the suspected underground utilities was not performed. The identification of the utilities was based solely on above-ground observations; e.g., proximity to water valves and by observations made into manholes and vaults.

The results of the GeoView investigation are limited by the capabilities of the GPR and EUL methods at the project site. GeoView can make no warranties or representations of subsurface conditions beyond the capabilities of the geophysical methods. Results of this investigation should be used only to help anticipate where, what type and approximate depth of the underground utilities that will be encountered during demolition activities at the project site. All standard operating procedures typically employed for utility-removal projects should be followed. GeoView can make no warranties or representations of the conditions that may be present beyond the depth of investigation or resolving capability of geophysical methods or in areas that were either not accessible to the geophysical investigation or where areas of cultural interference were present.

Appendix D
Photographs

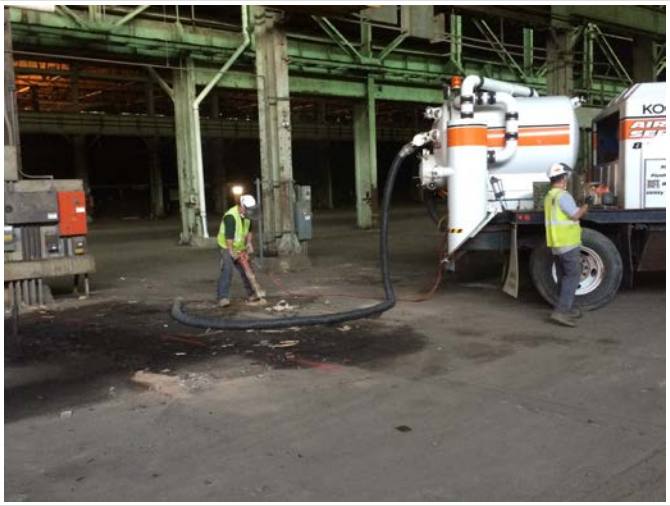


1. IMG_4275. GeoView, Inc. performing the geophysical survey at the Site.

2. IMG_0129. Kodiak constructing monitoring well (MW-9).

3. IMG_4295. TechLaw collecting surface water sample (SW-2) from Mine Run.

4. IMG_4296. TechLaw collecting sediment sample (SD-3) from Mine Run.



5. IMG_4297. Kodiak using jackhammer to break through concrete floor in Bldg 10. Samples SS-7, SBS-7, and SBS-7A were collected here.

6. IMG_4302. View of oily waste material, sample W-1, located within the facility.

7. IMG_0208. View of hardened black waste material, sample W-3, located within the facility.

8. IMG_4303. View of dump area for paint waste located outside the facility. Sample W-4 collected.

9. IMG_4309. Orange flag indicates the location where surface soil sample SS-27 was collected.

10. IMG_4312. Kodiak constructing monitoring well MW-6 near the south gate.

11. IMG_4313. Kodiak constructing monitoring well MW-5 near the main gate.

12. IMG_4335. Kodiak collecting subsurface cores. Samples SS-16, SBS-16-1, and SBS-16-2 collected here.

13. IMG_4336. Kodiak collecting subsurface cores. Samples SS-4, SBS-4-1, and SBS-4-2 collected here.

14. IMG_4337. Kodiak collecting subsurface cores. Samples SS-3, and SBS-3 collected here.

15. IMG_4360. Well pump which supplies the facility with process water. Sample PW-1 was collected here.

Appendix E
Investigation Derived Waste Records

VEOLIA
ENVIRONMENTAL SERVICES

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NONEREQUIRED	1	(877) 818-0087	ZZ 00439573

5. Generator's Name and Mailing Address
US EPA REGION 3
JOSEPH NOWAK
1650 ARCH ST.
PHILADELPHIA, PA 19103
Generator's Phone: 215 814-3303

Generator's Site Address (if different than mailing address)
US EPA REGION 3
BEECH BOTTOM PLANT
2481 RIVER RD.
BEECH BOTTOM, WV 26070

6. Transporter 1 Company Name: VEOLIA ES TECHNICAL SOLUTIONS
U.S. EPA ID Number: NJD080631369

7. Transporter 2 Company Name: VEOLIA ES INDUSTRIAL SERVICES
U.S. EPA ID Number: TXR000025791

8. Designated Facility Name and Site Address
VEOLIA ES TECHNICAL SOLUTIONS, L.L.C.
4301 INFIRMARY ROAD
WEST CARROLLTON, OH 45449
Facility's Phone: 937 859-6101
U.S. EPA ID Number: OHD093945293

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID	21	DM	12600	P	NONE
	2. NON RCRA AND DOT NON REGULATED LIQUID	9	DM	3600	P	NONE
	3.					
	4.					

14. Special Handling Instructions and Additional Information
ER Service Contracted by VESTS -|- 1) W:566660 A:SRRLFSOLID-NH COD REQUIRED
2) W:566648 A:SRRLFLIQ-NH

15. **GENERATOR S/OFFEROR S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JOSEPH NOWAK
Signature: Joseph Nowak AGENT OF EPA
Month 06 Day 26 Year 14

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Shipment
Transporter 1 Printed/Typed Name: Marshal Blough
Signature:
Month 6 Day 26 Year 14
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Shipping Document Tracking Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year
19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

TRANSPORTER 2 OR BROKER COPY

PACKING SUMMARY

Generator Number: 608896
US EPA REGION 3
BEECH BOTTOM PLANT
BEECH BOTTOM, WV 26070
Attn: GENE NANCE
EPA ID: NONEREQUIRED

Manifest Number: ZZ00439573
Field System ID: HO
Work Order Number: 1979436000
Date Shipped: 06/26/2014

Container#: HO-1979436000-001 Waste Area: Manifest Page/Line: 01 / 1

WIP: 566648 DisposalCode: SRRLFLIQ-NH PHY State: L

Date Accumulated: 06/13/2014 Gen Drum ID:

Shipping Name: NON RCRA AND DOT NON REGULATED LIQUID

No. of Commons: 09 Outer Container: 551A2-DM Inner Container:

Primary Waste Codes: NONE PCB Serial #: OOS Date: / /

Total Cmns Wt: 3600 SIC: 8999 Source: G09 Form: W101 System: H141 Cubic Ft.: 7.50

Individual Common Weights: 400, 400, 400, 400, 400, 400, 400, 400, 400 (POUNDS)

Units	Container/Size	Net Weight	Chemical Name	EPA/State Codes
1	55 GAL		ACETONE [10-11B] ARSENIC [0.1-0.2M] BARIUM [1.3-1.4M] CALCIUM [205M] CHROMIUM [0.1-0.2M] IRON [349M] MAGNESIUM [50M] LEAD [0.8-0.9M] MERCURY [0.2-0.3B] POTASSIUM [21M] SODIUM [57-58M] TOLUENE [0.2-0.3B] VANADIUM [0.2M] WATER [99-100%] NICKEL [0.2-0.3M] MANGANESE [17-18M] O- XYLENE [0.2-0.3B] M- XYLENE [0.3-0.4B] P- XYLENE [0.3-0.4B] COBALT [0.1-0.2M] ALUMINUM [109M] COPPER [0.3-0.4M] ZINC [1.7-1.8M] SUSPENDED INERT AND SETTLED SOLIDS [0-1%] BIS (2-ETHYLHYL) PHTHALATE [17-18B]	NONE

Container#: HO-1979436000-002 Waste Area: Manifest Page/Line: 01 / 2

WIP: 566660 DisposalCode: SRRLFSOLID-NH PHY State: S

Date Accumulated: 06/26/2014 Gen Drum ID:

Shipping Name: NON RCRA AND DOT NON REGULATED SOLID

No. of Commons: 21 Outer Container: 551A2-DM Inner Container:

Primary Waste Codes: NONE PCB Serial #: OOS Date: 11-14

Total Cmns Wt: 12600 SIC: 8999 Source: G12 Form: W319 System: H141 Cubic Ft.: 7.50

Individual Common Weights: 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600 (POUNDS)

Units	Container Size	Net Weight	Chemical Name	EPA/State Codes
1	55 GAL		ANTHRACENE [0.1B] BARIUM [0.5M] BENZOANTHRACENE [0.3-0.4B] 3,4- BENZOPYRENE [0.2-0.3B] BENZO(B)FLUORANTHENE [0.4-0.5B] BENZO(K)FLUORANTHENE [0.2-0.3B] CARBON DISULFIDE [0.01-0.02B] CHRYSENE [0.3-0.4B] FLUORANTHENE [0.6-0.7B] INDENOPYRENE [0.1-0.2B] NAPHTHALENE [0.1-0.2B] PHENANTHRENE [0.4-0.5B] PYRENE [0.6-0.7B] 1,12- BENZOPERYLENE [0.2-0.3B] SOIL CUTTINGS [100%] METHYLNAPHTHALENE [0.2-0.3B] PLASTIC LINERS [0-1%]	NONE

Appendix F
Validated Data Reports

DATA VALIDATION REPORT

Report Date: May 30, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52344-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the total metals and mercury by SW-846 Methods 6010C and 7471B from TestAmerica Nashville. This report consists of the validation of 12 soil and sediment samples collected on May 5, 2014 and May 6, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-17	490-52344-1
SS-17	490-52344-2
SS-22	490-52344-3
SS-25	490-52344-4
SS-26	490-52344-5
SBS-5	490-52437-3
SD-1	490-52437-4
SD-1A	490-52437-5
SD-2	490-52437-6
SD-3	490-52437-7
SS-5	490-52437-8
SS-7	490-52437-9

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative incorrectly indicated that calcium was reported in a method blank above the reporting limit. However, the result at 46.88 mg/Kg was less than the reporting limit of 200 mg/Kg.

No laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

It should be noted that a serial dilution analysis and a post digestion spike analysis were not performed for the ICP-AES metals analysis for this data delivery group.

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, the soil and sediment samples collected on May 6, 2014 and received on May 7, 2014 were received at a temperature of 9.3°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory less than 24 hours after sample collection. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, a low-level calibration verification standard required for method 6010C was analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 80-120%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 80-120%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%) with the exception noted below.

The recovery for copper low level standard analyzed on May 14, 2014 at 143% was greater than the QC limits of 70-130%. As a result of the elevated recovery, the following detected result less than two times the reporting limit was qualified as estimated (J+):

- Copper in sample SS-22

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Selenium was detected in the May 13, 2014 method blank and sodium was detected in the May 14, 2014 method blank that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Selenium in samples SBS-17, SS-17, SS-25, and SS-26
- Sodium in samples SBS-5, SD-1, SD-1A, SD-3, SS-5, and SS-7

Calibration Blanks

Beryllium, cadmium, and potassium were detected in the initial or continuing calibration blanks that resulted in sample qualification. The following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Beryllium in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, and SS-7
- Cadmium in samples SD-1, SD-1A, SD-2, SS-5, and SS-7
- Potassium in sample SS-7

No additional action was required for laboratory blank contamination because the sample results were either above the RL or the blank action levels, or non-detected.

Field Blanks

Field blanks were not collected for the metals analyses for this sample delivery group.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample SD-3 as requested on the chain-of-custody form for the May 14, 2014 preparation batch. MS/MSD analyses were not provided for the May 13, 2014 preparation batch that included the samples collected on May 5, 2014. The MS/MSD RPDs were less than 35% with the exception noted below.

The RPD for lead at 37% exceeded 35%. As a result of the exceeded duplicate precision criteria the following detected results were qualified as estimated (J):

- Lead in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, and SS-7

The laboratory flagged the RPD for mercury for exceeding the laboratory limit of 20%. However, the RPD at 24% was less than the soil validation limit of 35% and no data were qualified.

Spike Sample Analysis

MS/MSD analyses were performed on sample SD-3 as requested on the chain-of-custody form for the May 14, 2014 preparation batch. MS/MSD analyses were not provided for the May 13, 2014 preparation batch that included the samples collected on May 5, 2014. Post digestion spike analyses were only provided for the mercury analysis. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

Selenium was not recovered in the MS or MSD resulting in 0% recoveries. Additionally, a post digestion spike was not provided for selenium. As a result of the 0% recoveries, the following detected result was qualified as estimated (J-) and the non-detected results were rejected (R):

- Selenium in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, and SS-7

The MS/MSD recoveries for manganese at 177% and 172% were greater than 125% for and a post digestion spike was not performed. As a result of the elevated MS/MSD recoveries, the following detected results were qualified as estimated (J+):

- Manganese in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, and SS-7

The MS/MSD recoveries for mercury at 56% and 35% were less than 75% but the post digestion spike at 84% was within QC limits. As a result of the low MS/MSD recoveries, the following results were qualified as estimated (J/UJ):

- Mercury in all samples

The matrix spike recovery for lead at 63% was less than the QC limits and the matrix spike duplicate recovery at 262% exceeded the QC limits. As a result bias could not be determined and the following detected results were qualified as estimated (J):

- Lead in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, and SS-7

[Note: Only the samples from the May 14, 2014 preparation batch were considered associated samples and were qualified accordingly.]

ICP Serial Dilution

ICP serial dilutions were not provided with this SDG.

ICP-MS Tune Analysis

An instrument tune was not applicable for these methods.

ICP-MS Internal Standards

ICP-MS was not performed for these samples.

Field Duplicate

One set of field duplicates was collected and submitted with this SDG. Sample set SD-1 and SD-1A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 2x the reporting limit).

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-22	Copper	J+	Low-level standard exceeded QC limits
SBS-17, SS-17, SS-25, SS-26	Selenium	U	Laboratory blank contamination
SBS-5, SD-1, SD-1A, SD-3, SS-5, SS-7	Sodium		
SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-7	Beryllium		
SD-1, SD-1A, SD-2, SS-5, SS-7	Cadmium		
SS-7	Potassium		
SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, SS-7	Lead	J	MS/MSD RPD exceeded 35% and MS/MSD recoveries outside QC limits
SS-5	Selenium	J-	MS/MSD recoveries less than 30% (not recovered)
SBS-5, SD-1, SD-1A, SD-2, SD-3, and SS-7		R	
SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, SS-7	Manganese	J+	MS/MSD recoveries exceeded 125% and post digestion spike not performed
All samples	Mercury	J/UJ	MS/MSD recoveries less than 75% and post digestion spike within QC limits

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: May 30, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52344-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B, semivolatiles by Method 8270D, and PCBs by Method 8082A from TestAmerica Nashville. This report consists of the validation of 12 soil and sediment samples collected on May 5, 2014 and May 6, 2014 and three field QC blanks for the volatile analysis. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-17	490-52344-1
SS-17	490-52344-2
SS-22	490-52344-3
SS-25	490-52344-4
SS-26	490-52344-5
SBS-5	490-52437-3
SD-1	490-52437-4
SD-1A	490-52437-5
SD-2	490-52437-6
SD-3	490-52437-7
SS-5	490-52437-8
SS-7	490-52437-9
TB-01	490-52344-5TB
FB-01	490-52437-1
RB-01	490-52437-2

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records with the following exception.

The trip blank TB-01 was incorrectly reported as Trip Blank throughout the data package and as TB042914 on the electronic data deliverable (EDD).

The case narrative for the volatiles analyses referred to MS/MSD outliers for MS/MSD samples performed on samples from other SDGs. Only the results for the MS/MSD for sample SD-3 were reported in this SDG. The outlier for this MS/MSD was not addressed in the case narrative.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, the samples collected on May 6, 2014 and received on May 7, 2014 were received at a temperature of 9.3°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory less than 24 hours after sample collection. Additionally, the rinsate blank and field blank sample were preserved to a pH less than 2.0. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99 with the exceptions noted below.

The %RSDs for toluene and ethylbenzene exceeded 20% in the initial calibration performed on HP69. As a result, the following sample results were qualified as estimated (J/UJ):

- Toluene and ethylbenzene in samples SBS-17 and SS-26

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PCBs
Percent relative standard deviations (%RSDs) for the calibration peaks used to quantitate the Aroclors were less than or equal to 20% or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% (30 for trace analysis) for all other analytes with the exceptions listed below.

The following sample results were qualified as estimated (J/UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Dichlorodifluoromethane and methyl acetate in samples SS-17 and SS-22
- Dichlorodifluoromethane, bromodichloromethane, trans-1,3-dichloropropene, methyl acetate, 1,2-dichloroethane, and chlorodibromomethane in samples SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, and SS-7
- Methyl acetate, bromoform, toluene, and ethylbenzene in samples SBS-17 and SS-26
- Methyl acetate and bromoform in sample SS-25
- 1,2,4-Trichlorobenzene in samples RB-01 and FB-01

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes.

PCBs
Continuing calibration standards were analyzed at the required frequency. The percent differences (%Ds) were less than or equal to 15% for the opening Aroclor standards bracketing standards with the exceptions noted below.

The following detected sample results were qualified as estimated (J) because the %Ds for one or more of the peaks exceeded criteria in the associated continuing calibration on column RTX -5:

- PCB-1242 in sample SS-17
- PCB-1260 in sample SS-5

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Methylene chloride was detected in the method blanks for QC batched 490-161347 and 490-161031. The following sample results less than the reporting limit (RL) were raised to the RL and qualified as non-detected (U):

- Methylene chloride in samples SBS-17, SS-17, and SS-26

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the semivolatile method blanks.

PCBs
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the PCB method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

A trip blank, rinsate blank, and field blank were collected and analyzed with the volatile sample analyses. The trip blank, rinsate blank, and field blank were not contaminated with target compounds.

One set of field duplicates was collected and submitted for the volatile and semivolatile sample analyses. Sample set SD-1 and SD-1A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 2x the reporting limit) with the exceptions noted below.

The following detected sample results were qualified as estimated (J) because the field duplicate did not meet the criteria for soil sample analysis.

- Anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, and fluoranthene in samples SD-1 and SD-1A

Note: Field QC samples were not collected for the PCB sample analysis.

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PCB analyses. All surrogate recoveries were within the laboratory QC limits with the volatile exceptions noted below.

Volatiles
The recoveries for the surrogate compound 4-bromofluorobenzene in samples SS-25, SS-26, SS-22, and SS-7 and for the surrogate compound toluene-d8 in sample SS-25 exceeded the laboratory QC limits. As a result of the elevated surrogate recoveries, the detected results in the following sample were qualified as estimated (J):

- All detected results in samples SS-22, SS-26, and SS-7
- All detected results reported from instrument HP69 for sample SS-25

Samples SS-25 and SS-26 were reanalyzed at dilution (sample preparation factor) on instrument HP87 because of low internal standard area counts. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. The surrogate recoveries for these analyses were within QC limits and the results reported from these analyses on instrument HP87 were not qualified. Note that no detected results were reported for the analysis of sample SS-26 on instrument HP87.

[Note: Based on professional judgment all detected results in these samples were qualified because the samples were analyzed by SW846 Method 8260 and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable.]

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on sample SD-3 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The matrix spike recovery for methyl acetate at 202% exceeded the laboratory QC limits of 10-200%. No action was required as organic sample results are not usually qualified using only the MS/MSD and this compound was not detected in the associated unspiked parent sample.

Semivolatiles
MS/MSD analyses were performed on sample SD-3 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The compounds 1,2,4,5-tetrachlorobenzene, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, and hexachlorocyclopentadiene were not recovered in the MS and/or MSD resulting in 0% recoveries. As a result of the 0% recoveries, the following non-detected results were rejected (R):

- 1,2,4,5-Tetrachlorobenzene, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, and hexachlorocyclopentadiene in samples SD-3

Note: Based on professional judgment the above results were qualified using the MS/MSD data. However, these qualifiers were only added to the unspiked parent sample as the LCS/LCSD recoveries and calibration data were acceptable for these compounds.

PCBs
MS/MSD analyses were performed on samples SD-3 and SBS-17. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch of the volatile, semivolatile, and PCB analyses. All LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the volatile and semivolatle exceptions noted below.

Volatiles
Elevated recoveries were reported for various compounds in the LCS or LCSD analyses; however, no action was required for the elevated recoveries because the effected compounds were not detected in the associated volatile samples.

Semivolatiles
Elevated recoveries were reported for atrazine in the LCS or LCSD analyses for batch 490-161042; however, no action was required for the elevated recoveries because atrazine was not detected in the associated semivolatile samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard with the exceptions noted below.

Volatiles

The area counts for the internal standards DCB in samples SS-25 and SS-26 and for CBZ in sample SS-25 were less than the QC limit. These two samples were reanalyzed a dilution (decreased sample preparation size) and all internal standard area counts were acceptable. According to the laboratory case narrative, a dilution was required due to sample matrix effects. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. No data were qualified as a result of low internal standard area counts.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

These PCB samples did not require GC/MS Confirmation.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

The internal column RPDs for the PCBs detected results were within method criteria.

Retention times

The decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) retention time shifts were within the specified control limits for PCBs.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SBS-17, SS-26	Toluene Ethylbenzene	J/UJ	Initial calibration %RSD exceeded criteria
SS-17, SS-22	Dichlorodifluoromethane Methyl acetate		Continuing calibration %D exceeded criteria
SBS-5, SD-1, SD-1A, SD-2, SD-3, SS-5, SS-7	Dichlorodifluoromethane Methyl acetate 1,2-Dichloroethane Bromodichloromethane Chlorodibromomethane trans-1,3-Dichloropropene		
SBS-17, SS-26	Methyl acetate Bromoform Toluene Ethylbenzene		
SS-25	Methyl acetate Bromoform		
RB-01, FB-01	1,2,4-Trichlorobenzene		
SBS-17, SS-17, SS-26	Methylene chloride	U	Method blank contamination
SS-22, SS-26, SS-7	All detected results	J	Elevated surrogate recoveries
SS-25	All detected results (except for ethylbenzene, isopropylbenzene, toluene, and xylenes which are reported from the diluted analysis)		

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SD-3	1,2,4,5 Tetrachlorobenzene 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol Hexachlorocyclopentadiene	R	0% MS and/ or MSD recoveries
SD-1, SD-1A	Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Chrysene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene Fluoranthene	J	Field duplicate precision not met

PCBs

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-17	PCB-1242	J	Continuing calibration %Ds exceeded 15%
SS-5	PCB-1260		

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: May 30, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52441-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the total metals and mercury by SW-846 Methods 6010C and 7471B from TestAmerica Nashville. This report consists of the validation of four surface water samples and one field blank collected on May 6, 2014 and May 7, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SW-3	490-52602-1
SW-1	490-52609-1
SW-1A	490-52609-2
SW-2	490-52609-3
FB-01	490-52624-1

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records with the exception of sample FB-01. Sample FB-01 was analyzed by ICP-AES Method 6010C rather than as ICP-MS. All other samples were analyzed by ICP-MS Method 6020A.

The case narrative referred to MS/MSD outliers for the MS/MSD sample performed on a sample from another SDG for the preparation batch associated with the field blank. Only the results for the MS/MSD for sample SW-2 were reported in this SDG and were evaluated.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

It should be noted that a post digestion spike analysis were not performed for the ICP-MS metals analysis for this data delivery group.

Sample reporting limits were adjusted for sample size and dilution.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, samples SW-1, SW-1A, and SW-2 were received at a temperature of 9.3°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory properly preserved with a pH of less than 2 and were received less within 2 days of sample collection. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, a low-level calibration verification standards required for methods 6010C and 6020A were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 80-120%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 80-120%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Copper was detected in the Method 6010C method blank and antimony and vanadium were detected in the Method 6020A method blank that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Copper in sample FB-01
- Antimony in samples SW-1A, SW-2, and SW-3
- Vanadium in samples SW-1, SW-1A, and SW-2

Calibration Blanks

Vanadium was detected in the calibration blanks for Method 6010 analysis that resulted in sample qualification. The following sample result less than the RL was qualified as non-detected (U):

- Vanadium in sample FB-01

No additional action was required for laboratory blank contamination because the sample results were either above the RL or the blank action levels, or non-detected.

Field Blanks

The field blank sample FB-01 only reported detected results for copper and vanadium, both which were ultimately qualified for laboratory blank contamination.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample SW-2 as requested on the chain-of-custody form. The MS/MSD RPDs for all ICP-MS analytes except for zinc exceeded 20%. As a result of the exceeded duplicate precision criteria the following results were qualified as estimated (J/UJ):

- Aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, thallium, vanadium, and sodium in samples SW-1, SW-1A, SW-2, and SW-3

Spike Sample Analysis

MS/MSD analyses were performed on sample SW-2 as requested on the chain-of-custody form. Post digestion spike analyses were not provided. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MS recovery for magnesium at 14% and manganese at 8% were less than 30% and a post digestion spike was not provided. As a result of the recoveries less than 30%, the following detected results were qualified as estimated (J-):

- Magnesium and manganese in samples SW-1, SW-1A, SW-2, and SW-3

The MS recoveries for aluminum, barium, cobalt, copper, iron, nickel, potassium, and sodium were less than 75%, but greater than 30% and a post digestion spike was not performed. As a result of the low MS/MSD recoveries, the following results were qualified as estimated (J-/UJ):

- Aluminum, barium, cobalt, copper, iron, nickel, potassium, and sodium in samples SW-1, SW-1A, SW-2, and SW-3

[Note: The above recoveries were only below QC limits in the matrix spike analysis and all recoveries from the MSD were acceptable. Because of the discrepancy between the MS and MSD results precision was also not demonstrated, see duplicate results. It does not appear that the laboratory addressed the problem with the low matrix spike recoveries or took in corrective action and without any explanation the data were qualified as directed by the Functional Guidelines.]

ICP Serial Dilution

The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10%.

ICP-MS Tune Analysis

Instrument tunes met all method criteria.

ICP-MS Internal Standards

All internal standard recoveries were within 60-125%

Field Duplicate

One set of field duplicates was collected and submitted with this SDG. Sample set SW-1 and SW-1A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit) with the exception noted below.

The following detected sample results were qualified as estimated (J) because the field duplicate RPD at 63% exceeded 50%.

- Aluminum in samples SW-1 and SW-1A

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
FB-01	Copper Vanadium	U	Laboratory blank contamination
SW-1A, SW-2, SW-3	Antimony		
SW-1, SW-1A, SW-2	Vanadium		
SW-1, SW-1A, SW-2, SW-3	Manganese Magnesium	J-	MS/MSD recoveries less than 30%
	Aluminum Barium Cobalt Copper Iron Nickel Potassium Sodium	J-/UJ	MS/MSD recoveries less than 75%.

Sample ID	Elements	Qualifiers	Reason for Qualification
SW-1, SW-1A, SW-2, SW-3	Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel Potassium Selenium Silver Thallium Vanadium Sodium	J/UJ	MS/MSD RPD exceeded 20%
SW-1, SW-1A	Aluminum	J	Field Duplicate RPD exceeded 20%

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: May 30, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52441-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B, semivolatiles by Method 8270D, and PAHs by Method 8270D SIM from TestAmerica Nashville. This report consists of the validation of four surface water samples collected on May 6, 2014 and May 7, 2014. Additionally, two trip blanks were submitted for the volatile analysis and a field blank was submitted for the semivolatile and PAH analyses. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SW-3	490-52602-1
SW-1	490-52441-1, 490-52617-1, 490-52624-2
SW-1A	490-52441-2, 490-52617-2
SW-2	490-52441-3, 490-52609-3
FB-01	490-52624-1FB
TB-02	490-52441-4
TB-03 (As TB042914 on EDD)	490-52602-2TB

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples. (Raw data were not evaluated.) The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

According to the case narrative samples SW-1 and SW-1A were re-extracted and reanalyzed because of the bis(2-ethylhexyl)phthalate blank contamination and the result in these samples was above the RL. The case narrative also indicated that the reanalysis confirmed the initial result and that the reanalyses were performed outside holding times. The reanalyses were not reported by the laboratory and no results were qualified for exceeded holding times. The bis(2-ethylhexyl)phthalate results in these two samples were comparable to the blank values and were qualified as non-detected (U) at the detected value.

The semivolatile case narrative indicated that an LCS recovery and CCV recovery for atrazine exceeded criteria. However, the QC batches listed were not included in this SDG and were not associated with these samples. [Note: An ICV %D for atrazine exceeded criteria, but the ICV was not evaluated or used to qualify sample results per the Functional Guidelines.]

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, volatile samples SW-1, SW-1A, SW-2, and TB-02 and the semivolatile samples SW-2 were received at a temperature of 9.3°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory within two days of sample collection. Additionally, the samples were preserved to a pH less than 2.0. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All reported samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PAH SIM
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for all PAH compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or equal to 20% for all PAH compounds or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% (30 for trace analysis) for all other analytes with the exceptions listed below.

The following sample results were qualified as estimated (J/UJ) because the %Ds exceeded 30% in the associated continuing calibration:

- 1,2,4-Trichlorobenzene in samples SW-3, TB-02, and TB-03

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes.

PAH SIM
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for all compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 25% for all analytes.

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period. No target compounds were detected in the volatile method blanks.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the semivolatile method blanks.

Bis(2-ethylhexyl)phthalate was detected in both method blanks at a concentration below the reporting limit (RL). The following sample results were less than the RL or less than 10 times the blank concentration and were qualified as non-detected (U). Result less than the RL were raised to the RL:

- Bis(2-ethylhexyl)phthalate in samples SW-1, SW-1A, SW-2, SW-3, and FB-01

PAH SIM
Method blanks were r eported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the SIM method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

Two trip blanks were collected and analyzed with the volatile sample analyses. Additionally, a field blank was collected and with the semivolatiles and SIM PAH analyses.

The trip blanks both reported a low concentration of toluene. However, no action was required as toluene was not detected in the volatile samples.

The field blanks were not contaminated with target compounds or the analyte (bis(2-ethylhexyl)phthalate) was qualified for laboratory contamination.

One set of field duplicates was collected and submitted for the volatile, semivolatile, and PAH SIM sample analyses. Sample set SW-1 and SW-1A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit).

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PAH SIM analyses. All surrogate recoveries were within the laboratory QC limits.

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on sample SW-2 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

Semivolatiles
MS/MSD analyses were performed on sample SW-2 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

PAH SIM
MS/MSD analyses were performed on sample SW-2 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The MS/MSD recoveries for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were below the laboratory QC limits. Based on professional judgment, following compounds were qualified as estimated (J) in the unspiked parent sample

- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene in sample SW-2

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch of the volatile, semivolatile, and PAH SIM analyses. All LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the volatile exception noted below.

Volatiles
Elevated recoveries were reported for 1,2,4-trichlorobenzene in the LCS and LCSD analyses; however, no action was required for the elevated recoveries because this compound was not detected in the associated volatile samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PAH SIM analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

PCB GC/MS confirmation is not applicable to these methods.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size and dilution.

Retention times

Not applicable to these methods and raw data were not evaluated.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SW-3, TB-02, TB-03	1,2,4-Trichlorobenzene	UJ	Continuing calibration %D exceeded criteria

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SW-1, SW-1A, SW-2, SW-3, FB-01	Bis(2-ethylhexyl)phthalate	U	Laboratory blank contamination

PAH SIM

Sample ID	Elements	Qualifiers	Reason for Qualification
SW-2	Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene	UJ	Low matrix spike and matrix spike duplicate recoveries

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52565-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of total metals and mercury by SW-846 Methods 6010C, 6020A, 7470A, and 7471B and hexavalent chromium by SW-846 Method 7196A from TestAmerica Nashville. This report consists of the validation of eleven soil and sediment samples collected on May 5, 2014 and May 7, 2014 and one rinsate blank collected on May 6, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SD-4	490-52565-1
SS-23	490-52565-2, 490-52765-4
SS-27	490-52565-3
SS-28	490-52565-4
SS-29	490-52565-5
SS-30	490-52565-6
RB-01	490-52626-1
SBS-17	490-52765-1
SS-17	490-52765-2
SS-22	490-52765-3
SS-25	490-52765-5
SS-26	490-52765-6

(Samples SD-4, SS-23, SS-27, SS-28, SS-29, and SS-30 were analyzed for metals and samples SBS-17, SS-17, SS-22, SS-23, SS-25, and SS-26 were analyzed for hexavalent chromium.)

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative referred to MS/MSD outliers for the MS/MSD sample performed on a sample from another SDG for the preparation batch associated with the rinsate blank. Only the results for the MS/MSD for sample SS-23 were reported in this SDG and were evaluated.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

The chain-of-custody records were only provided for the hexavalent chromium analyses. Chain-of-custody records were located in the other data packages or provided by Techlaw Inc.

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection. Hexavalent chromium was extracted within 30 days of collection and analyzed within seven days of extraction for the solid samples.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6010C, 6020A, 7470A, and 7471B were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Antimony and vanadium were detected in the aqueous method blank that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Antimony and vanadium in sample RB-01

No action was required for manganese soil method blank contamination because all associated sample results were greater than the blank action level.

Calibration Blanks

No action was required for laboratory calibration blank contamination because the sample results were either above the RL or the blank action levels, or non-detected.

Field Blanks

The rinsate blank, sample RB-01 collected on May 6, 2014 was not associated with the samples in this SDG but with the sediment samples collected on May 6, 2014 and submitted in SDG 490-52344-1. RB-01 reported a detected result for thallium at a concentration below the reporting limit. However, no action was required as the results for thallium in the associated sediment samples collected on May 6, 2014 were either above the RL or the blank action levels, or non-detected.

All other results in rinsate blank were qualified as not detected due to laboratory blank contamination.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample SS-23 as requested on the chain-of-custody form. The MS/MSD RPDs were less than 35%.

The laboratory flagged the RPD for arsenic for exceeding the laboratory limit of 20%. However, the RPD at 24% was less than the soil validation limit of 35% and no data were qualified.

Spike Sample Analysis

MS/MSD analyses were performed on sample SS-23 as requested on the chain-of-custody. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MS recovery for arsenic (134%) and the MS/MSD recoveries for copper (155%/128%) were greater than 125% but the post digestion spike recoveries at 92% and 91%, respectively were within QC limits. As a result of the elevated MS/MSD recoveries, the following detected results were qualified as estimated (J):

- Arsenic in samples SD-4, SS-23, SS-27, and SS-29
- Copper in samples SD-4, SS-23, SS-27, SS-29, and SS-30

The MS/MSD recoveries for mercury at 58% and 71% were less than 75% and the post digestion spike at 67% was below QC limits. As a result of the low MS/MSD and post digestion spike recoveries, the following results were qualified as estimated with low bias (J-/UJ):

- Mercury in samples SD-4, SS-23, SS-27, SS-28, SS-29, and SS-30

The case narrative indicated several additional MS/MSD outliers; however, the sample results were greater than four times the spike value and the recoveries were not applicable.

ICP Serial Dilution

An ICP serial dilution was performed on sample SS-23 for the solid sample analyses for Method 6010C. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10% with the exceptions noted below.

The serial dilution %Ds for zinc (49%) and vanadium (17%) exceeded 10%. As a result, the following results were qualified as estimated (J/UJ):

- Vanadium and zinc in samples SD-4, SS-23, SS-27, SS-28, SS-29, and SS-30

ICP-MS Tune Analysis

Instrument tunes met all method criteria.

ICP-MS Internal Standards

All internal standard recoveries were within 60-125%

Field Duplicate

Field duplicates were not collected with these sample analyses.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
RB-01	Antimony Vanadium	U	Laboratory blank contamination
SD-4, SS-23, SS-27, SS-29	Arsenic	J	MS/MSD recoveries exceeded 125% but post digestion spike within QC limits
SD-4, SS-23, SS-27, SS-29, SS-30	Copper		
SD-4, SS-23, SS-27, SS-28, SS-29, SS-30	Mercury	J-/UJ	MS/MSD recoveries less than 75% and post digestion spike below QC limits
	Vanadium Zinc	J/UJ	Serial dilution %D exceeded 10%.

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52565-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B, semivolatiles by SW-846 Method 8270D, and PAHs by SW-846 Method 8270D SIM and PCBs by SW-846 Method 8082A from TestAmerica Nashville. This report consists of the validation of six soil and sediment samples collected on May 7, 2014 and May 8, 2014 and one rinsate blank which was collected on May 6, 2014 for the PAH SIM and PCB analyses. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SD-4	490-52565-1
SS-23	490-52565-2
SS-27	490-52565-3
SS-28	490-52565-4
SS-29	490-52565-5
SS-30	490-52565-6
RB-01	490-52626-1RB
SS-7	490-52626-2

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative for the PAHs and PCB analyses referred to MS/MSD outliers for MS/MSD samples performed on samples from other SDGs. Only the results for the MS/MSD for soil samples SS-23 and SS-7 were reported in this SDG and were evaluated.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

The chain-of-custody records were only provided for the hexavalent chromium analyses. Chain-of-custody records were located in the other data packages or provided by Techlaw Inc.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PAH SIM
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for all PAH compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or equal to 20% for all PAH compounds or the correlation coefficient (r^2) was greater than 0.99.

PCBs
Percent relative standard deviations (%RSDs) for the calibration peaks used to quantitate the Aroclors were less than or equal to 20% or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% (30% for trace analysis) for all other analytes with the exceptions listed below.

The following sample results were qualified as estimated (UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Dichlorodifluoromethane and methyl acetate in samples SD-4 and SS-23

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes.

PAH SIM
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for all compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 25% for all analytes.

PCBs
Continuing calibration standards were analyzed at the required frequency. The percent differences (%Ds) were less than or equal to 15% for the opening Aroclor standards bracketing standards with the exceptions noted below.

The following sample results were qualified as estimated (J/UJ) because the %Ds for one or more of the peaks exceeded criteria in the associated continuing calibration on both columns:

- PCB-1016, PCB-1248, and PCB-1260 in sample RB-01

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Methylene chloride was detected in the method blanks for QC batched 490-161031 at a concentration below the reporting limit (RL). However, no action was required as this compound was not detected in the associated sample.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. Bis(2-ethylhexyl)phthalate was detected in aqueous method blank at a concentration below the reporting limit (RL). However, no action was required as this compound was not detected in the associated sample.

PAH SIM
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the SIM method blanks.

PCBs
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the PCB method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

A rinsate blank was collected and analyzed with the PAH-SIM and PCB sample analyses. The rinsate blank, sample RB-01, was contaminated with PCB-1248. However, no action was required as this compound was not detected in the associated samples collected on May 6, 2014 and included in SDG 490-52344-1.

The trip blank TB-03 (see SDG 490-52441-1) associated with the two volatile samples was contaminated with a low concentration of toluene. No action was required as the detected result in sample SS-23 was greater than the reporting limit and the blank action level.

Field duplicates were not collected with these sample analyses.

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PCB analyses. All surrogate recoveries were within the laboratory QC limits with the volatile exceptions noted below.

Volatiles
The recoveries for the surrogate compound 4-bromofluorobenzene in samples SS-23, SS-23MS and SS-23MSD and for the surrogate compound toluene-d8 in reanalysis of sample SS-23 exceeded the laboratory QC limits. As a result of the elevated surrogate recoveries, the detected results in the following sample were qualified as estimated (J):

- All detected results in samples SS-23

Sample SS-23 was reanalyzed at dilution (sample preparation factor) on instrument HP87 because of low internal standard area count. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. Note that no detected results were reported for the analysis of sample SS-23 on instrument HP87.

[Note: Based on professional judgment all detected results in this sample were qualified because the samples were analyzed by SW846 Method 8260 and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable. No qualifiers were added to the MSD/MSD samples.]

Semivolatiles
The recovery for the surrogate compound nitrobenzene-d5 in sample SS-23MS was less than the laboratory QC limits. No action was taken on this QC sample and all recoveries for the associated sample were within QC limits.

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on sample SS-23 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The MS/MSD recoveries for 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, chlorobenzene, isopropylbenzene, and styrene were below the laboratory QC limits. Based on professional judgment, following compounds were qualified as estimated (J/UJ) in the unspiked parent sample

- 1,2,3-Trichlorobenzene, 1,2,4-trichlorobenzene, chlorobenzene, isopropylbenzene, and styrene in sample SS-23

Semivolatiles
MS/MSD analyses were performed on sample SS-23 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The compounds 1,2,4,5-tetrachlorobenzene, 3,3’dichlorobenzidine, 3-nitroanaline, 4-nitroanaline, dimethyl phthalate, and hexachlorocyclopentadiene were not recovered in the MS and/or MSD resulting in 0% recoveries.

As a result of the 0% recoveries, the following non-detected results were rejected (R):

- 1,2,4,5-Tetrachlorobenzene, 3,3'dichlorobenzidine, 3-nitroanaline, 4-nitroanaline, dimethyl phthalate, and hexachlorocyclopentadiene in samples SS-23

Additionally, MS and/or MSD recoveries for 4-chloroaniline, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene were below the laboratory QC limits. As a result of the low recoveries, following compounds were qualified as estimated (J/UJ) in the unspiked parent sample

- 4-Chloroaniline, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene in sample SS-23

Note: Based on professional judgment the above results were qualified using the MS/MSD data. However, these qualifiers were only added to the unspiked parent sample as the LCS/LCSD recoveries and calibration data were acceptable for these compounds.

PAH SIM
MS/MSD analyses were not include or required for the PAH-SIM analysis. The only sample analyzed for this method was the rinsate blank.

PCBs
MS/MSD analyses were performed on sample SS-7. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch and analyses. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard with the exceptions noted below.

Volatiles

The area counts for the internal standard DCB in samples SS-23, SS-23MS and SS-23MSD were less than the QC limit. Sample SS-23 was reanalyzed a dilution (decreased sample preparation size) and all internal standard area counts were acceptable. According to the laboratory case narrative, a dilution was required due to sample matrix effects. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. No data were qualified as a result of low internal standard area counts.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

These PCB samples did not require GC/MS Confirmation.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

The internal column RPDs for the PCBs detected results were within method criteria.

Retention times

The decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) retention time shifts were within the specified control limits for PCBs.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SD-4, SS-23	Dichlorodifluoromethane Methyl acetate	UJ	Continuing calibration %D exceeded criteria
SS-23	All detected results	J	Elevated surrogate recoveries
SS-23	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Chlorobenzene Isopropylbenzene, Styrene	J/UJ	Low MS/MSD recoveries

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-23	1,2,4,5 Tetrachlorobenzene 3,3'Dichlorobenzidine 3-Nitroanaline 4-Nitroanaline Dimethyl phthalate Hexachlorocyclopentadiene	R	0% MS and/ or MSD recoveries
	4-Chloroaniline Benzo(g,h,i)perylene Benzo(k)fluoranthene Indeno(1,2,3-cd)pyrene	J/UJ	Low MS/MSD recoveries

PCBs

Sample ID	Elements	Qualifiers	Reason for Qualification
RB-01	PCB-1248 PCB-1016 PCB-1260	J/UJ	Continuing calibration %Ds exceeded 15%
	PCB-1248	J	Intercolumn %D exceeded 25%

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52615-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of total metals and mercury by SW-846 Methods 6010C and 7471B (4 samples) and hexavalent chromium (1 sample) by SW-846 Method 7196A from TestAmerica Nashville. This report consists of the validation of four waste samples collected on May 7, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
W-1	490-52615-5
W-2	490-52615-6
W-3	490-52615-7
W-4	490-52615-8

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection. Hexavalent chromium was extracted within 30 days of collection and analyzed within seven days of extraction for the solid samples.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6010C and 7471B were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

No target analytes were detected.

Calibration Blanks

No target analytes were detected.

Field Blanks

Field blanks were not associated with these samples.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample W-4. The MS/MSD RPDs were less than 35%.

The laboratory flagged the RPD for aluminum for exceeding the laboratory limit of 20%. However, the RPD at 28% was less than the soil validation limit of 35% and no data were qualified.

Spike Sample Analysis

MS/MSD analyses were performed on sample W-4. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MS/MSD recoveries for zinc (50%/64%) were less than 75% and the post digestion spike recovery was within QC limits. As a result of the low MS/MSD and post digestion spike recoveries within criteria, the following detected results were qualified as estimated (J):

- Zinc in samples W-1, W-2, W-3, and W-4

The MS/MSD recoveries for chromium (259%/167%) were greater than 125% and the post digestion spike recovery was within QC limits. As a result of the elevated MS/MSD recoveries, the following detected results were qualified as estimated (J):

- Chromium in samples W-1, W-2, and W-4

The MS recovery for aluminum was elevated at 153% and the MSD recovery was low at 19% and the post digestion spike recovery was within QC limits. As a result, the following results were qualified as estimated (J/UJ):

- Aluminum in samples W-1, W-2, W-3, and W-4

The case narrative indicated several additional MS/MSD outliers; however, the sample results were greater than four times the spike value and the recoveries were not applicable.

ICP Serial Dilution

An ICP serial dilution was performed on sample W-4. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10%.

ICP-MS Tune Analysis

Instrument tunes were not applicable to these analyses.

ICP-MS Internal Standards

Internal standard recoveries were not applicable to these analyses.

Field Duplicate

Field duplicates were not collected with these sample analyses.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
W-1, W-2, W-3, W-4	Zinc	J	MS/MSD recoveries less than 75% and post digestion spike within QC limits
W-1, W-2, W-4	Chromium		MS/MSD recoveries exceeded 125% and post digestion spike within QC limits
W-1, W-2, W-3, W-4	Aluminum	J/UJ	MS recovery high, MSD recovery low, and post digestion spike within QC limits

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-52615-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B and semivolatiles by SW-846 Method 8270D from TestAmerica Nashville. This report consists of the validation of four waste samples collected on May 7, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
W-1	490-52615-5
W-2	490-52615-6
W-3	490-52615-7
W-4	490-52615-8

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Compound Quantitation and Reported RLs
- Overall Assessment

Validated By: Lisa Tyson, TLI Solutions, Inc. Reviewed By: Bill Fear, TLI Solutions, Inc.

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles

Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane). The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane). The percent differences (%Ds) were less than or equal 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 25% (30% for trace analysis) for all other analytes.

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes with the exceptions listed below.

The following sample results were qualified as estimated (UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Atrazine in samples W-1, W-2, W-3, and W-4
- Caprolactam in samples W-3 and W-4

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period. No target compounds were detected.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

A trip blank TB-03 (see SDG 490-52441-1) associated with the volatile samples was contaminated with a low concentration of toluene. No action was required because toluene was not detected in W-1, W-2, W-3, or W-4.

Field duplicates were not collected with these sample analyses.

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks. All surrogate recoveries were within the laboratory QC limits with the exceptions noted below.

Semivolatiles
The recoveries for the surrogate compound terphenyl-d14 were elevated in samples W-1 and W-2; however, no qualification was necessary because detected results were not reported in those samples and only one base/neutral surrogate was outside criteria. Additionally, the surrogates in samples W-3 and W-4 were reported as diluted below the calibration range and no qualification was necessary.

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on sample W-4. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exceptions noted below.

The RPDs for acetone and dichlorodifluoromethane exceeded criteria. Based on professional judgment, the following compounds were qualified as estimated (UJ) in the unspiked parent sample:

- Acetone and dichlorodifluoromethane in sample W-4

The MS and/or MSD recoveries for chloroethane, isopropylbenzene, xylenes total, and o-xylene were below the laboratory QC limits. Based on professional judgment, the following compounds were qualified as estimated (J/UJ) in the unspiked parent sample:

- Chloroethane, isopropylbenzene, xylenes total, and o-xylene in sample W-4

Semivolatiles
According to the case narrative, insufficient sample volume was available to perform matrix spike/matrix spike duplicate analyses for semivolatiles.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for volatiles and a laboratory control sample for semivolatiles. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the following exceptions.

Volatiles
The LCS/LCSD recoveries for chloroethane and the LCSD recovery for trichlorofluoromethane were below laboratory QC limits. The following compounds were qualified as estimated (UJ):

- Chloroethane and trichlorofluoromethane in samples W-1, W-2, W-3, and W-4

The LCSD percent recovery for 1,4-dioxane exceeded criteria; however, the compound was not detected in the associated samples and no qualification was necessary.

Semivolatiles
The LCS percent recovery for atrazine exceeded laboratory QC limits; however, no qualification was necessary because the compound was not detected in the associated samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
W-4	Acetone Dichlorodifluoromethane	J/UJ	Elevated MS/MSD RPD
	Chloroethane Isopropylbenzene Xylenes total o-Xylene	J/UJ	Low MS/MSD recoveries
W-1, W-2, W-3, W-4	Chloroethane Trichlorofluoromethane	UJ	Low LCS recoveries

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
W-1, W-2, W-3, W-4	Atrazine	UJ	Continuing calibration %D exceeded criteria
W-3, W-4	Caprolactam		

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53182-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the total metals and mercury by SW-846 Methods 6010C and 7471B from TestAmerica Nashville. This report consists of the validation of five soil samples collected on May 15, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-1	490-53182-1
SBS-11	490-53182-2
SBS-7	490-53182-3
SBS-7A	490-53182-4
SBS-8	490-53182-5

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

No laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice and within the temperature range of 4 ± 2 °C or just below 2 °C, but not frozen. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, a low-level calibration verification standard required for these methods was analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

No target analytes were detected.

Calibration Blanks

No target analytes were detected.

Field Blanks

The rinsate blank (RB-03) associated with these samples was provided in SDG 490-53188-1. Iron and thallium were detected in the rinsate blank at concentrations below the reporting limit. No action was required as these analytes were either non-detected or well above the reporting limit.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on samples SBS-1 and SBS-8 as requested on the chain-of-custody form. Both sets of QC samples and all samples were analyzed in one QC batch. The MS/MSD RPDs were less than 35% with the exception noted below.

The RPD for aluminum at 39% exceeded 35% for sample SBS-1. As a result of the exceeded duplicate precision criteria the following detected results were qualified as estimated (J):

- Aluminum in all samples

The laboratory also flagged the RPDs for potassium in both sample duplicates and for mercury and aluminum in sample SBS-8 for exceeding the laboratory limit of 20%. However, these RPDs were less than the soil validation limit of 35%.

Spike Sample Analysis

MS/MSD analyses were performed on samples SBS-1 and SBS-8 as requested on the chain-of-custody form. Both sets of QC samples and all samples were analyzed in one QC batch. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MS or MSD recoveries for magnesium (127%), manganese (128%), and potassium (167%) were greater than 125% and the post digestion spike recoveries were less than 125% for sample SBS-1. Additionally, the matrix spike duplicate recovery for sample SBS-8 at 73% was less than 75%. As a result of these MS/MSD recovery outliers, the following detected results were qualified as estimated (J) without bias or undetermined bias:

- Magnesium, manganese, and potassium in all samples

The MS/MSD recoveries for mercury at 58% and 61% were less than 75% for sample SBS-1. However, the matrix spike recovery for sample SBS-8 at 132% was greater than the QC limits. (Post digestion spikes were not provided for the mercury analysis.) As a result of these recovery outliers, the following detected results were qualified as estimated (J): (Bias was not determined as both elevated and low recoveries were noted for mercury.)

- Mercury in all samples

The case narrative also indicated that aluminum and iron recoveries failed recovery criteria. However, the sample results were greater than four times the spike value and the recoveries were not applicable.

ICP Serial Dilution

An ICP serial dilution was performed on sample SBS-1. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10%.

ICP-MS Tune Analysis

An instrument tune was not applicable for these methods.

ICP-MS Internal Standards

ICP-MS was not performed for these samples.

Field Duplicate

One set of field duplicates was collected and submitted with this SDG. Sample set SBS-7 and SBS-7A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 2x the reporting limit).

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
All samples	Aluminum	J	MS/MSD RPD exceeded 35%
	Magnesium Manganese Potassium		MS/MSD recoveries outside QC limits (undetermined bias)
	Mercury		

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53182-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B and semivolatiles by SW-846 Method 8270D from TestAmerica Nashville. This report consists of the validation of five soil samples collected on May 15, 2014. Additionally, one trip blank was submitted for the volatile analysis. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-1	490-53182-1
SBS-11	490-53182-2
SBS-7	490-53182-3
SBS-7A	490-53182-4
SBS-8	490-53182-5
TB-06	490-53182-6TB

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Compound Quantitation and Reported RLs
- Overall Assessment

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative for the trace volatiles analyses associated with the trip blank referred to MS/MSD outliers for MS/MSD samples performed on a sample from another SDG. Only the results for the MS/MSD for samples SBS-1 and SBS-8 were reported in this SDG and evaluated.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

The summary form for the LCS/LCSD for QC batch 162941 was incomplete (LCS recoveries were not provided). This LCS was evaluated using additional forms provided.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice and within the temperature range of 4 ± 2 °C or just below 2 °C, but not frozen. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times. [Note: Although a collection date of 4/29/2014 was listed on the chain-of-custody for the trip blank, the collection date of the other samples and the date shipped (5/15/2014) was used for the trip blank.]

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exception noted below. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99 with the exceptions noted below.

The average RRF for acetone from the May 6, 2014 initial calibration on instrument HP48 was less than 0.01. As a result of the low RRF, the following non-detected result was rejected (R):

- Acetone in sample TB-06

The %RSDs for toluene and ethylbenzene exceeded 20% in the initial calibration performed on instrument HP69. As a result, the following sample results were qualified as estimated (J/UJ):

- Toluene and ethylbenzene in all soil samples

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exceptions noted below. The percent differences (%Ds) were less than or equal 40% for the poor responders (50% for 1,4-dioxane) and

less than or equal to 25% (30% for trace analysis) for all other analytes with the exceptions noted below.

The RRFs for acetone (0.008) and 1,4-dioxane (0.0009) from the May 18, 2014 continuing calibration on instrument HP48 were below the data validation QC limits. As a result of the low RRFs, the following non-detected results were rejected (R):

- Acetone and 1,4-dioxane in sample TB-06

The following sample results were qualified as estimated (J/UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Bromomethane, toluene, and methyl acetate in samples SBS-1 and SBS-7
- Bromomethane, ethylbenzene, toluene, and methyl acetate in samples SBS-11 and SBS-7A
- Toluene and ethylbenzene in sample SBS-8

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes with the exception listed below.

The following sample results were qualified as estimated (UJ) because the %D exceeded criteria in the associated continuing calibration:

- Atrazine in all soil samples

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Methylene chloride was detected in the method blanks for QC batches 490-164322 and 490-163609. Chlorobenzene and 1,2,3-trichlorobenzene were also detected in the method blanks associated with the trip blank. However, no action was required as these compounds were not detected in the associated samples.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

A trip blank was collected and analyzed with the volatile sample analyses. Additionally, a rinsate blank (RB-03, submitted in SDG 490-53188-1) was collected and analyzed for the volatile and semivolatile analyses. The trip blank and rinsate blank were not contaminated with target compounds.

One set of field duplicates was collected and submitted for the volatile and semivolatile sample analyses. Sample set SBS-7 and SBS-7A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 2x the reporting limit).

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PCB analyses. All surrogate recoveries were within the laboratory QC limits.

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on samples SBS-1 and SBS-8. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exceptions noted below.

The RPD for styrene (63%) exceeded the QC limit of 50% for the MS/MSD of sample SBS-8. Based on professional judgment, the following compound was qualified as estimated (UJ) in the unspiked parent sample:

- Styrene in sample SBS-8

The recoveries for styrene were below the laboratory QC limits for the MS/MSD of sample SBS-1. Based on professional judgment, the following compound was qualified as estimated (UJ) in the unspiked parent sample:

- Styrene in sample SBS-1

The recoveries for dichlorodifluoromethane and vinyl chloride were greater than the laboratory QC limits for the MSD of sample SBS-1. No action was taken on the elevated recoveries because these compounds were not detected in the associated sample.

Semivolatiles
MS/MSD analyses were performed on samples SBS-1 and SBS-8. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exceptions noted below.

The compounds 1,2,4,5-tetrachlorobenzene and dimethyl phthalate were not recovered in the MSD of sample SBS-1 and the compound benzaldehyde was not recovered in the MS for sample SBS-8 resulting in 0% recoveries. As a result of the 0% recoveries, the following non-detected results were rejected (R):

- 1,2,4,5-Tetrachlorobenzene and dimethyl phthalate in sample SBS-1
- Benzaldehyde in sample SBS-8

Note: Based on professional judgment the above results were qualified using the MS/MSD data. However, these qualifiers were only added to the unspiked parent samples as the LCS/LCSD recoveries and calibration data were acceptable for these compounds.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for volatiles and a laboratory control sample for semivolatiles. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the following exceptions.

Volatiles
Elevated recoveries were reported for various compounds in the LCS or LCSD analyses; however, no action was required for the elevated recoveries because the effected compounds were not detected in the associated volatile samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

The laboratory case narrative indicated that internal standard responses were outside QC limits for sample SBS-8. However, it appears that this was from an analysis of the sample not reported and at that this sample was reanalyzed on May 22, 2014. All results for this sample were reported from the May 22, 2014 analysis, which met all internal standard criteria and no data were qualified for internal standards.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
TB-06	Acetone 1,4-Dioxane	R	Initial and / or continuing calibration RRFs below QC limits
SBS-1, SBS-7, SBS-7A, SBS-8, SBS-11	Toluene Ethylbenzene	J/UJ	Initial calibration %RSD exceeded criteria
SBS-1, SBS-7	Bromomethane Toluene Methyl acetate		Continuing calibration %D exceeded criteria
SBS-7A, SBS-11	Bromomethane Ethylbenzene Toluene Methyl acetate		
SBS-8	Toluene Ethylbenzene		
	Styrene	UJ	Elevated MS/MSD RPD
SBS-1			Low MS/MSD recoveries

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SBS-1, SBS-7, SBS-7A, SBS-8, SBS-11	Atrazine	UJ	Continuing calibration %D exceeded criteria
SBS-1	1,2,4,5-Tetrachlorobenzene Dimethyl phthalate	R	0% Matrix spike recoveries
SBS-8	Benzaldehyde		

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53479-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the total metals and mercury by SW-846 Methods 6020A and 7470A and hexavalent chromium by Method 218.7 from TestAmerica Nashville. This report consists of the validation of eleven groundwater samples, two field blanks, and two rinsate blanks collected between May 19, 2014 and May 21, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
FB-02	490-53623-1, 490-53479-4
FB-03	490-53623-2, 490-53509-1
MW-1	490-53623-3, 490-53509-2
MW-2	490-53623-4, 490-53509-3
MW-3	490-53623-5, 490-53509-4
MW-3-A (Listed as MW-3-A on COC, but reported as MW-3-1 by laboratory for hexavalent chromium)	490-53623-6, 490-53509-5
MW-4	490-53623-7, 490-53479-1
MW-5	490-53623-8, 490-53509-6
MW-6	490-53623-9, 490-53509-7
MW-7	490-53623-10
MW-8	490-53623-11
MW-9	490-53623-12, 490-53479-2
PW-1 (Reported as PW-01 by laboratory)	490-53623-13
RB-04	490-53623-14, 490-53479-3RB
RB-05	490-53623-15, 490-53509-8

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody (COC) records with the exceptions listed below.

The laboratory incorrectly reported sample PW-1 as PW-01 throughout the data package and on the electronic data deliverable (EDD).

The field duplicate sample MW-3-A was listed as MW-3-A on the COCs, but was reported by the laboratory as MW-3-1 for hexavalent chromium and as MW-3A for all other analyses.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

The chain-of-custody records were not provided for the hexavalent chromium samples collected on May 20, 2014. These chain-of-custody records were provided by Techlaw Inc.

Sample reporting limits were adjusted for sample size and dilution.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice and within the temperature range of 4 ± 2 °C or just below 2 °C, but not frozen. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection. Hexavalent chromium was analyzed within 14 days of collection for these water samples analyzed by Method 218.7.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6020A and 7470A were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Chromium, iron, nickel and vanadium were detected in the method blank that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Chromium in samples MW-1, MW-2, MW-3, MW-3-A, MW-4, MW-5, MW-7, and MW-8
- Iron in samples RB-04 and RB-05
- Nickel in samples FB-02, MW-5, MW-9, PW-1, RB-04, and RB-05
- Vanadium in sample FB-02, FB-03, MW-1, MW-2, MW-3, MW-3-A, MW-4, MW-5, MW-7, MW-9, PW-1, RB-04, and RB-05

Calibration Blanks

Manganese was detected in the calibration blanks that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Manganese in samples FB-03, RB-04 and RB-05

No action was required for additional laboratory calibration blank contamination because the sample results were either above the RL or the blank action levels, or non-detected.

Field Blanks

The rinsate blanks, samples RB-04 and RB-05 reported detected results for aluminum at concentrations below the reporting limit. However, no action was required as the results for aluminum in the associated samples were either above the RL or the blank action levels, or non-detected.

All other results in the field or rinsate blanks were qualified as not detected due to laboratory blank contamination.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample MW-4 as requested on the chain-of-custody form. All MS/MSD RPDs were less than 20%.

Spike Sample Analysis

MS/MSD analyses were performed on sample MW-4 as requested on the chain-of-custody form. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exception noted below:

The MS/MSD recoveries for hexavalent chromium (33%/ 33%) were less than 75%, but greater than 30% and a post digestion spike was not performed. As a result of the low MS/MSD recoveries, the following results were qualified as estimated (J-/UJ):

- Hexavalent chromium in all samples

The case narrative indicated that manganese recoveries failed recovery criteria. However, the sample result was greater than four times the spike value and the recoveries were not applicable.

ICP Serial Dilution

An ICP serial dilution was performed on sample MW-4. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10% with the exceptions noted below.

The serial dilution %Ds for aluminum (11%) and nickel (19%) exceeded 10%. As a result, the following results were qualified as estimated (J/UJ):

- Aluminum and nickel in all samples

ICP-MS Tune Analysis

Instrument tunes met all method criteria.

ICP-MS Internal Standards

All internal standard recoveries were within 60-125%

Field Duplicate

One set of field duplicates was collected and submitted with this SDG. Sample set MW-3 and MW-3-A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit).

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
MW-1, MW-2, MW-3, MW-3-A, MW-4, MW-5, MW-7, MW-8	Chromium	U	Laboratory blank contamination
RB-04, RB-05	Iron		
FB-02, MW-5, MW-9, PW-1, RB-4, RB-05	Nickel		
FB-02, FB-03, MW-1, MW-2, MW-3, MW-3A, MW-4, MW-5, MW-7, MW-9, PW-1, RB-04, RB-05	Vanadium		
FB-03, RB-04, RB-05	Manganese		
All samples	Hexavalent chromium	J-/UJ	MS/MSD recoveries less than 75%, but greater than 30% and no post digestion spike
	Aluminum Nickel	J/UJ	Serial dilution %D exceeded 10%.

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 6, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53479-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B, semivolatiles by Method 8270D, and PAHs by Method 8270D SIM from TestAmerica Nashville. This report consists of the validation of eleven groundwater samples, two field blanks, and two rinsate blanks collected between May 19, 2014 and May 21, 2014. Additionally, one trip blank was submitted for the volatile analysis. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
MW-1	490-53623-3
MW-2	490-53623-4
MW-3	490-53623-5
MW-3-A	490-53623-6
MW-4	490-53623-7, 490-53479-1
MW-5	490-53623-8
MW-6	490-53623-9
MW-7	490-53623-10
MW-8	490-53623-11
MW-9	490-53623-12, 490-53479-2
PW-1 (Reported as PW-01 by laboratory)	490-53623-13
FB-02	490-53623-1FB, 490-53479-4
FB-03	490-53623-2FB
RB-04	490-53623-14RB, 490-53479-3RB
RB-05	490-53623-15RB
TB-08	490-53623-16TB

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples. (Raw data were not evaluated.) The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody (COC) records with the exceptions listed below.

The laboratory incorrectly reported sample PW-1 as PW-01 throughout the data package and on the electronic data deliverable (EDD).

According to the case narrative, the semivolatile samples MW-3-A and MW-7 were re-extracted and reanalyzed because of low surrogate recoveries. The case narrative also indicated that the reanalysis had acceptable recoveries, but the reanalyses were performed outside holding times. The reanalyses were not reported by the laboratory and no results were qualified for exceeded holding times. Non-detected results in sample MW-7 were rejected for a low surrogate recovery.

The semivolatile case narrative indicated that LCS recoveries for atrazine and benzaldehyde were outside QC limits for batch 165608. However, this QC batch listed was not included in this SDG and was not associated with these samples.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, semivolatile sample MW-1 and PAH SIM samples MW-1, MW-2, MW-4, MW-5, MW-9 RB-04, RB-05, and FB-03 were received at a temperature of 7.5°C or 9.2°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory within two days of sample collection and sample integrity did not appear compromised.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All reported samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane). The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PAH SIM
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for all PAH compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or equal to 20% for all PAH compounds or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane). The percent differences (%Ds) were less than or equal 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 25% (30% for trace analysis) for all other analytes.

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes.

PAH SIM
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for all compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 25% for all analytes with the exception of one surrogate compound in two of the continuing calibrations. No action was taken based on the elevated %Ds for nitrobenzene-d5.

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Chloroform was detected in the method blanks for QC batched 490-164764 at a concentration below the reporting limit (RL). However, no action was required as this compound was not detected in the associated sample.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the semivolatile method blanks.

PAH SIM
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the SIM method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

One trip blank was collected and analyzed with the volatile sample analyses. Additionally, two field blanks and two rinsate blanks were collected and analyzed with the volatile, semivolatiles, and SIM PAH analyses.

The trip blank TB-08 reported a low concentration of toluene. However, no action was required as toluene was not detected in the volatile samples.

The field blank FB-03 and both rinsate blanks (RB-04 and RB-05) reported low concentrations for toluene. Additionally, RB-04 reported a low concentration for carbon disulfide. However, no action was required as toluene and carbon disulfide were not detected in the associated volatile samples.

The field blank FB-03 also reported a low concentration for the PAH SIM compound phenanthrene. However, no action was required as phenanthrene was not detected in the associated PAH SIM samples collected on May 20, 2014.

One set of field duplicates was collected and submitted for the volatile, semivolatile, and PAH SIM sample analyses. Sample set MW-3 and MW-3-A is a field duplicate pair. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit).

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PAH SIM analyses. All surrogate recoveries were within the laboratory QC limits with the exceptions noted below.

Semivolatiles
The recovery for the surrogate compound 2-fluorphenol in sample MW-7 at 7% was less than the laboratory QC limits and less than 10%. As a result of the surrogate recovery being less than 10%, the following non-detected results were qualified as rejected (R):

- All acid fraction compounds (phenols) in sample MW-7

The recovery for the surrogate compound 2-fluorobiphenyl at 21% was less than the laboratory QC limits, but greater than 10%. No action was taken as only one surrogate recovery was outside QC limits.

[Note: Based on professional judgment all acid fraction compounds in s sample MW-7 were qualified because the samples were analyzed by SW846 Method 8270D and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable. Qualification for these semivolatile samples was based on the October 1999 Functional Guidelines which are more applicable to this method.]

PAH SIM
The recovery for the surrogate compound nitrobenzene-d5 in the LCS for QC batch 164782 was greater than the laboratory QC limits. No action was taken on this QC sample as all LCS spike recoveries were acceptable and all surrogate recoveries for the associated samples were within QC limits.

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on sample MW-4 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

Semivolatiles
MS/MSD analyses were performed on sample MW-4 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

PAH SIM
MS/MSD analyses were performed on sample MW-4 as requested on the chain-of-custody. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exception noted below.

The MS and/ or MSD recoveries for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were below the laboratory QC limits. Based on professional judgment, the following compounds were qualified as estimated (J/UJ) in the unspiked parent sample

- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, , benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene in sample MW-4

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch of the volatile, semivolatile, and PAH SIM analyses. All LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the exceptions noted below.

Volatiles
Elevated recoveries were reported for 1,4-dioxane in the LCS and LCSD analyses for QC batch 164529; however, no action was required for the elevated recoveries because this compound was not detected in the associated volatile samples.

Semivolatiles
An elevated recovery was reported for atrazine in the LCS analysis for QC batch 164642; however, no action was required for the elevated recovery because this compound was not detected in the associated semivolatile samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile, semivolatile, and PAH SIM analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

PCB GC/MS confirmation is not applicable to these methods.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size and dilution.

Retention times

Not applicable to these methods and raw data were not evaluated.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
None	None	None	None

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
MW-7	All acid fraction compounds (phenols)	R	Surrogate recovery less than QC limits and 10%

PAH SIM

Sample ID	Elements	Qualifiers	Reason for Qualification
MW-4	Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene	UJ	Low matrix spike and /or matrix spike duplicate recoveries

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53123-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of total metals and mercury by SW-846 Methods 6010C and 7471B from TestAmerica Nashville. This report consists of the validation of twenty-two soil and sediment samples collected on May 14, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-10	490-53123-2
SBS-13	490-53123-3
SBS-15	490-53123-4
SBS-2-2	490-53123-5
SBS-3	490-53123-6
SBS-4-1	490-53123-7
SBS-6	490-53123-8
SS-15	490-53123-9
SS-19	490-53123-10
SS-2	490-53123-11
SS-6	490-53123-12
SBS-12	490-53134-1
SBS-12-A	490-53134-2
SBS-14	490-53134-3
SBS-16-1	490-53134-4
SBS-16-2	490-53134-5
SBS-19	490-53134-6
SBS-2-1	490-53134-7
SBS-4-2	490-53134-8
SS-13	490-53134-9
SS-3	490-53134-10
SS-6-A	490-53134-11

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

No laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

The chain-of-custody records were not provided for the metals samples SBS-15, SBS-4-1, SS13, and SS-19. Chain-of-custody records were provided by Techlaw Inc.

Sample reporting limits were adjusted for sample size, dilution, and percent solids. The majority of samples were initially analyzed at a 5x or 10 X dilution and sample SS-6 was analyzed a t a 100X dilution for Method 6010C. Undiluted analyses were not included. Non-detected results in these samples are therefore reported at elevated reporting limits. The case narrative only indicated that these samples required dilution prior to analysis.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, several samples were received at a temperature of 8.0°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory within one day of sample collection. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6010C and 7471B were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%) for the CRIs associated with reported analytes.

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Calcium was detected in the method blank for QC batch 490-163471. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Calcium in samples SBS-2-2, SBS-3, SBS-6, SBS-14, SBS-16-2, SBS-19, and SBS-4-2

Calibration Blanks

No target analytes were detected.

Field Blanks

The rinsate blank, sample RB-02 collected on May 14, 2014 and associated with these samples was submitted in SDG 490-53188-1. However, no action was required for rinsate blank contamination (aluminum, chromium, copper, lead, manganese, thallium, and zinc) because the sample results were either above the RL or the blank action levels, or non-detected.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample SBS-4-2 as requested on the chain-of-custody form. An Additional MS/MSD was performed on sample SS-3 as these 22 samples required two preparation batches. The MS/MSD RPDs were less than 35%.

Spike Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on sample SBS-4-2 as requested on the chain-of-custody form. An additional MS/MSD was performed on sample SS-3 as the 22 samples required two preparation batches. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MS/MSD recoveries for arsenic (126%/131%) and the MSD recovery for manganese (128%) for sample SS-3 for QC batch 490-163504 were greater than 125%, but the post digestion spike recoveries at 94% and 100%, respectively were within QC limits. As a result of the elevated MS and/or MSD recoveries, the following detected results were qualified as estimated (J):

- Arsenic and manganese in samples SS-3 and SS-6-A

(Only samples SS-3 and SS-6-A were in QC batch 490-163504. All other samples were prepared with QC batch 490-163471 and all recoveries for sample SBS-4-2 were within the QC limits or the sample amount was greater than four times the spike value.)

The case narrative indicated several additional MS/MSD outliers (aluminum, iron, and lead); however, the sample results were greater than four times the spike value and the recoveries were not applicable.

ICP Serial Dilution

An ICP serial dilution was performed on samples SBS-4-2 and SS-3. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10%.

ICP-MS Tune Analysis

Instrument tunes were not applicable to these analyses.

ICP-MS Internal Standards

Internal standard recoveries were not applicable to these analyses.

Field Duplicate

Two sets of field duplicates was collected and submitted with this SDG. Sample set SBS-12 and SBS-12-A and sample set SS-6 and SS-6-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit) with the exception noted below.

The following detected sample results were qualified as estimated (J) because the field duplicate RPDs exceeded 50%.

- Chromium, lead, and mercury in samples SBS-12 and SBS-12-A
- Antimony, cadmium, copper, lead, manganese, zinc, and mercury in samples SS-6 and SS-6-A

Note: Several analytes were detected in sample SS-6-A analyzed at a 2X dilution, but were reported as non-detected in sample SS-6 at elevated detection limits due to the 100X dilution performed on sample SS-6. N action was taken on these compounds.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
SBS-2-2, SBS-3, SBS-6, SBS-14, SBS-16-2, SBS-19, SBS-4-2	Calcium	U	Laboratory blank contamination
SS-3, SS-6-A	Arsenic Manganese	J	MS/MSD recoveries exceeded 125%, but post digestion spike within QC limits
SBS-12, SBS-12-A	Chromium Lead Mercury		Field duplicate RPDs exceeded 50%
SS-6, SS-6-A	Antimony Cadmium Copper Lead Manganese Zinc Mercury		

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53123-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B and semivolatiles by SW-846 Method 8270D from TestAmerica Nashville. This report consists of the validation of twenty-two soil and sediment samples collected and one rinsate blank on May 14, 2014. Additionally, two trip blanks were submitted for the volatile analysis. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-10	490-53123-2
SBS-13	490-53123-3
SBS-15	490-53123-4
SBS-2-2	490-53123-5
SBS-3	490-53123-6
SBS-4-1	490-53123-7
SBS-6	490-53123-8
SS-15	490-53123-9
SS-19	490-53123-10
SS-2	490-53123-11
SS-6	490-53123-12
SBS-12	490-53134-1
SBS-12-A	490-53134-2
SBS-14	490-53134-3
SBS-16-1	490-53134-4
SBS-16-2	490-53134-5
SBS-19	490-53134-6
SBS-2-1	490-53134-7
SBS-4-2	490-53134-8
SS-13	490-53134-9
SS-3	490-53134-10
SS-6-A	490-53134-11
RB-02	490-53123-1RB
TB-04	490-53123-13TB
TB-05	490-53134-12TB

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Compound Quantitation and Reported RLs
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative for the volatile and semivolatile analyses referred to MS/MSD surrogate and spike outliers for MS/MSD samples performed on a samples from other SDGs that were not provided in this SDG. Only the results for the MS/MSD for samples SS-6 and SBS-4-2 were reported in this SDG and evaluated.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Benzene was initially not reported for sample SS-6. Benzene required a dilution and the laboratory omitted this result. A new data package and electronic data deliverable (EDD) were submitted.

The chain-of-custody records were not provided for the semivolatile samples SBS-15, SBS-4-1, SS13, and SS-19. Chain-of-custody records were provided by Techlaw Inc.

The summary form for the LCS/LCSD for QC batch 490-162941 was incomplete (LCS recoveries were not provided). This LCS was evaluated using additional forms provided.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, several samples were received at a temperature of 8.0°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory within one day of sample collection. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times. [Note: Although a collection date of 4/29/2014 was listed on the chain-of-custody for the trip blanks, the collection date of the other samples and the date shipped (5/14/2014) was used for the trip blanks.]

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exception noted below. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99 with the exceptions noted below.

The average RRF for acetone from the May 6, 2014 initial calibration on instrument HP48 was less than 0.01. As a result of the low RRF, the following non-detected results were rejected (R):

- Acetone in samples TB-04, TB05, and RB-02

The %RSDs for toluene and ethylbenzene exceeded 20% in the initial calibration performed on instrument HP69. As a result, the following sample results were qualified as estimated (J/UJ):

- Toluene and ethylbenzene in soil samples SBS-10, SBS 2-2, SBS-3, SBS-6, SBS-13, SS-15, SS-19, SS-2, SS-6, SBS-4-1

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exceptions noted below. The percent differences (%Ds) were less than or equal 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 25% (30% for trace analysis) for all other analytes with the exceptions noted below.

The RRFs for acetone (0.008) and 1,4-dioxane (0.0009) from the May 18, 2014 continuing calibration on instrument HP48 were below the data validation QC limits. As a result of the low RRFs, the following non-detected results were rejected (R):

- Acetone and 1,4-dioxane in samples TB-04, TB05, and RB-02

The following sample results were qualified as estimated (J/UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Bromomethane, toluene, and methyl acetate in samples SBS-10, SBS 2-2, SBS-3, and SBS-6
- Bromomethane, ethylbenzene, toluene, and methyl acetate in samples SBS-13, SS-15, SS-19, SS-2, and SS-6
- Bromomethane and methyl acetate in sample SBS-15
- Bromomethane, ethylbenzene, toluene, methyl acetate, and 2-hexanone in sample SBS-4-1
- Methyl acetate in samples SBS-12, SBS-12-A, SBS-14, SBS-16-2, SBS-19, SBS-2-1, SBS-4-2, SS-3, and SS-6-A
- Bromomethane, 1,2-dichloroethane, and methyl acetate in samples SBS-16-1 and SS-13

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes with the exceptions listed below.

The following sample results were qualified as estimated (UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Atrazine and benzaldehyde in samples SS-6-A and SS-3

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Methylene chloride was detected in the method blanks for the soil QC batches 490-163192, 490-163666, and 490-164194. Chlorobenzene was detected in the aqueous method blank for QC batch 490-163297.

As a result of the method blank contamination, the following detected result less than the reporting limit was raised to the reporting limit and qualified as not detected (U):

- Methylene chloride in sample SBS-4-1

No additional action was required for method blank contamination as these associated sample results were non-detects.

It should be noted that methylene chloride was detected in several other samples at concentrations less than the reporting limit. However, no results were qualified as methylene chloride was not detected in the associated method blanks.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

Two trip blanks was collected and analyzed with the volatile sample analyses. Additionally, a rinsate blank (RB-02) was collected and analyzed for the volatile and semivolatile analyses. The semivolatile analysis for RB-02 was submitted in SDG 490-53188-1. The trip blank TB-04 and rinsate blank were not contaminated with target compounds.

The trip blank, TB-05, was contaminated with toluene and 1,1,1-trichloroethane at concentrations below the reporting limits. As a result of the trip blank contamination, the following associated detected results less than the reporting limit were raised to the reporting limit and qualified as not detected (U):

- Toluene in samples SS-15 and SS-19

Two sets of field duplicates was collected and submitted with this SDG. Sample set SBS-12 and SBS-12-A and sample set SS-6 and SS-6-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit) with the exception noted below.

The following detected sample results were qualified as estimated (J/UJ) because the field duplicate RPDs exceeded 50%.

- Benzene, tetrachloroethene, toluene, and xylenes total in samples SS-6 and SS-6-A
- Anthracene and pyrene in samples SS-6 and SS-6-A

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. All surrogate recoveries were within the laboratory QC limits with the exceptions noted below.

Volatiles
The recoveries for the surrogate compound 4-bromofluorobenzene in samples SBS-13, SBS-15, SS-15, SBS-12-A, and SS-13 and for the surrogate compound toluene-d8 in samples SBS-15 and SS-15 exceeded the laboratory QC limits. As a result of the elevated surrogate recoveries, the detected results in the following samples were qualified as estimated (J):

- All detected results in samples SBS-13, SS-15, SBS-12-A, and SS-13
- All detected results reported from instrument HP69 for sample SBS-15

Samples SBS-13, SBS-15, and SS-15, were reanalyzed at dilution (sample preparation factor) on instrument HP68 because of low internal standard area counts. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. The surrogate recoveries for these analyses were within QC limits and the results reported from these analyses on instrument HP68 were not qualified. Note that no detected results were reported for the analyses of sample SBS-

13 and SS-15 on instrument HP68.

[Note: Based on professional judgment all detected results in these samples were qualified because the samples were analyzed by SW846 Method 8260 and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable.]

The MS/MSD analyses for sample SS-6 reported surrogate recoveries below the QC limits. No action was taken on the QC samples and all recoveries for the unspiked parent sample were acceptable.

Semivolatiles
The surrogate compounds 2-fluorphenol and 2,4,6-tribromophenol were not recovered in sample SBS-2-1 resulting in 0% recoveries. Additionally, the recoveries for 2-fluorphenol and 2,4,6-tribromophenol in samples SBS-10 and for phenol-d5 in sample SS-3 were less than the laboratory QC limits and less than 10%. As a result of the surrogate recoveries being less than 10%, the following non-detected results were qualified as rejected (R) and detected results as estimated (J):

- All acid fraction compounds (phenols) in samples SBS-10, SBS-2-1, and SS-3

The recovery for the surrogate compound nitrobenzene-d5 at 25% was less than the laboratory QC limits, but greater than 10% for sample SS-3. No action was taken as only one “base/neutral” surrogate recovery was outside QC limits.

[Note: Based on professional judgment all acid fraction compounds in samples SBS-10, SBS-2-1, and SS-3 were qualified because the samples were analyzed by SW846 Method 8270D and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable. Qualification for these semivolatile samples was based on the October 1999 Functional Guidelines which are more applicable to this method.]

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

Volatiles
MS/MSD analyses were performed on samples SS-6 and SBS-4-2. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exceptions noted below.

The RPDs for 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and bromomethane exceeded the QC limit of 50% for the MS/MSD of sample SBS-4-2. Based on professional judgment, the following compounds were qualified as estimated (UJ) in the unspiked parent sample:

- 1,2,3-Trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and bromomethane in sample SBS-4-2

The recovery for dichlorodifluoromethane was greater than the laboratory QC limits for the MS of sample SBS-4-2. No action was taken on the elevated recovery because this compound was not detected in the associated unspiked parent sample.

Semivolatiles
MS/MSD analyses were performed on sample SBS-4-2. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits with the exceptions noted below.

The compound 2,4-dinitrophenol was not recovered in the MSD analysis resulting in a 0% recovery. As a result of the 0% recovery, the following non-detected result was rejected (R):

- 2,4-Dinitrophenol in sample SBS-4-2

The MS/MSD recoveries for 4,6-dinitro-2-methylphenol were below the laboratory QC limits. As a result of the low recoveries, the following non-detected result was qualified as estimated (UJ) in the unspiked parent sample

- 4,6-dinitro-2-methylphenol in sample SBS-4-2

Note: Based on professional judgment the above results were qualified using the MS/MSD data. However, these qualifiers were only added to the unspiked parent sample as the LCS/LCSD recoveries and calibration data were acceptable for these compounds.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and/ or laboratory control sample duplicate for volatiles and semivolatiles. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the following exceptions.

Volatiles
The LCS/LCSD RPD for dichlorodifluoromethane at 55% exceeded the laboratory QC limit of 50% for QC batch 490-163666. As a result, the following non-detected result was qualified as estimated (UJ):

- Dichlorodifluoromethane in sample SBS-4-1

The LCS/LCSD for QC batch 490-163451 reported low recoveries for bromomethane and chloromethane and elevated RPDs for chloroethane and chloromethane. However, no action was required as these three compounds were not reported from the associated analyses of samples SBS-13, SBS-15, SS-15, SS-19, and SS-2 for QC batch 490-163451. (Analyses from this QC batch were for compounds associated with the internal standards 1,4-dichlorobenzene-d4 (DCB) and chlorobenzene-d5 (CBZ).

The LCS/LCSD for QC batch 490-164194 reported low recoveries for bromomethane and chloroethane. However, no action was required as compounds were not reported from the associated analysis of sample SBS-4-1 for QC batch 490-164194. (Only the non-detected result for methyl acetate was reported for this analysis).

Elevated recoveries were reported for methyl acetate in several LCS or LCSD analyses; however, no action was required for the elevated recoveries because this compound was not detected in the associated volatile samples.

Semivolatiles
The LCS/LCSD RPD for 2,4-dinitrophenol at 58% exceeded the laboratory QC limit of 50% for QC batch 490-163580. As a result, the following non-detected results were qualified as estimated (UJ):

- 2,4-Dinitrophenol in samples SS-6-A and SS-3

[Note: 2,4-Dinitrophenol was rejected in sample SS-3 due to low surrogate recoveries.]

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard with the exceptions noted below.

Volatiles

The area counts for the internal standards DCB in samples SBS-13, SBS-15, SS-15, SS-19, SS-2, and SS-6 and for CBZ in sample SBS-15 were less than the QC limits. These six samples were reanalyzed at dilution (decreased sample preparation size) and all internal standard area counts were acceptable. According to the laboratory case narrative, a dilution was required due to sample matrix effects. Only the compounds that are associated and quantitated by the effected internal standard were reported from the second analysis. No data were qualified as a result of low internal standard area counts.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
TB-04, TB05, RB-02	Acetone 1,4-Dioxane	R	Initial and / or continuing calibration RRFs below QC limits
SBS-10, SBS 2-2, SBS-3, SBS-6, SBS-13, SS-15, SS-19, SS-2, SS-6, SBS-4-1	Toluene Ethylbenzene	J/UJ	Initial calibration %RSD exceeded criteria
SBS-10, SBS 2-2, SBS-3, SBS-6	Bromomethane Toluene Methyl acetate		Continuing calibration %D exceeded criteria
SBS-13, SS-15, SS-19, SS-2, SS-6	Bromomethane Ethylbenzene Toluene Methyl acetate		
SBS-15	Bromomethane Methyl acetate		

Sample ID	Elements	Qualifiers	Reason for Qualification
SBS-4-1	Bromomethane Ethylbenzene Toluene Methyl acetate 2-Hexanone	J/UJ	Continuing calibration %D exceeded criteria
SBS-12, SBS-12-A, SBS-14, SBS-16-2, SBS-19, SBS-2-1, SBS-4-2, SS-3, SS-6-A	Methyl acetate		
SBS-16-1, SS-13	Bromomethane 1,2-Dichloroethane Methyl acetate		
SBS-4-1	Methylene chloride	U	Method blank contamination
SS-15, SS-19	Toluene		Trip blank contamination
SBS-13, SS-15, SBS-12-A, SS-13	All detected results	J	Elevated surrogate recoveries
SBS-15	All detected results (except for ethylbenzene, isopropylbenzene, toluene, and xylenes which are reported from the diluted analysis)		
SBS-4-2	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Bromomethane	UJ	Elevated MS/MSD RPDs
SBS-4-1	Dichlorodifluoromethane		Elevated LCS/LCSD RPD
SS-6, SS-6-A	Benzene Tetrachloroethene Toluene Xylenes, total	J	Field Duplicate RPDs exceeded 50%

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-6-A, SS-3	Atrazine Benzaldehyde	UJ	Continuing calibration %D exceeded criteria
SBS-10, SBS-2-1, SS-3	All acid fraction compounds (phenols)	J/R	Surrogate recoveries less than QC limits and 10%
SBS-4-2	2,4-Dinitrophenol	R	0% Matrix spike duplicate recovery
	4,6-Dinitro-2-methylphenol	UJ	Low MS/MSD recoveries
SS-6-A, SS-3	2,4-Dinitrophenol		LCS/LCSD RPD exceeded QC limits
SS-6, SS-6-A	Anthracene Pyrene	J	Field Duplicate RPDs exceeded 50%

[Note: 2,4-Dinitrophenol was ultimately rejected in sample SS-3 due to low surrogate recoveries.]

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53188-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of total metals and mercury by SW-846 Methods 6010C, 6020A, 7470A, and 7471B and hexavalent chromium by SW-846 Method 7196A from TestAmerica Nashville. This report consists of the validation of ten soil and sediment samples collected on May 14, 2014 and May 15, 2014 and two rinsate blanks collected on May 14, 2014 and May 16, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-18	490-53188-1
SBS-18-A	490-53188-2
SBS-9	490-53188-3
SS-1	490-53188-4
SS-11	490-53188-5
SS-11-A	490-53188-6
SS-18	490-53188-7
SS-9	490-53188-8
RB-02	490-53291-1
RB-03	490-53364-1
SS-4	490-53364-5
SBS-6	490-53364-3

(Sample SBS-6 was only analyzed for hexavalent chromium.)

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative referred to MS/MSD outliers for the MS/MSD for the QC batch associated with the soil samples and the mercury analysis for the water samples. This MS/MSD and the serial dilution for the soil sample analyses performed on a sample from another SDG was not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision for the soil samples.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Sample reporting limits were adjusted for sample size, dilution, and percent solids. The soil samples were initially analyzed at 2X dilution. Undiluted analyses were not included. Non-detected results in these samples are therefore reported at elevated reporting limits. The case narrative only indicated that these samples required dilution prior to analysis.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection. Hexavalent chromium was extracted within 30 days of collection and analyzed within seven days of extraction for the solid samples.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6010C, 6020A, 7470A, and 7471B were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%).

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Nickel and vanadium were detected in the aqueous method blank that resulted in sample qualification. As a result, the following sample results less than the RL or less than five times the blank value (whichever is greater) were qualified as non-detected (U):

- Nickel and vanadium in samples RB-02 and RB-03

No action was required for manganese soil method blank contamination because all associated sample results were greater than the blank action level.

Calibration Blanks

No target analytes were detected.

Field Blanks

Two rinsate blanks, RB-02 collected on May 14, 2014 and RB-03 collected on May 16, 2014, were submitted in this SDG. No action was required for rinsate blank contamination (aluminum, chromium, copper, lead, manganese, thallium, and zinc) because the sample results were either above the RL or the blank action levels, or non-detected.

All other results in rinsate blank were qualified as not detected due to laboratory blank contamination.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

Matrix spike/matrix spike duplicate analyses (MS/MSD) were performed on the aqueous sample RB-02 for the ICP metals. The MS/MSD RPDs were less than 20%.

A MS/MSD was not provided or evaluated for the soil samples.

Spike Sample Analysis

MS/MSD analyses were performed on the aqueous sample RB-02 for the ICP metals. All MS/MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value:

A MS/MSD was not provided or evaluated for the soil samples.

ICP Serial Dilution

An ICP serial dilution was performed on sample RB-02 for the aqueous sample analyses for Method 6020A. The ICP serial dilution %Ds for results greater than 50 times the MDL were less than 10% with the exception noted below.

The serial dilution %D for manganese (12%) exceeded 10%. As a result, the following results were qualified as estimated (J/UJ):

- Manganese in samples RB-02 and RB-03

A serial dilution was not provided or evaluated for the soil samples for Method 6010C.

ICP-MS Tune Analysis

Instrument tunes met all method criteria.

ICP-MS Internal Standards

All internal standard recoveries were within 60-125%.

Field Duplicate

Two sets of field duplicates was collected and submitted with this SDG. Sample set SBS-18 and SBS-18-A and sample set SS-11 and SS-11-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit) with the exception noted below.

The following detected sample results were qualified as estimated (J) because the field duplicate RPDs exceeded 50%.

- Calcium and magnesium in samples SS-11 and SS-11-A

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
RB-02, RB-03	Nickel Vanadium	U	Laboratory blank contamination
RB-02, RB-03	Manganese	J/UJ	Serial dilution %D exceeded 10%.
SS-11, SS-11-A	Calcium Magnesium	J	Field duplicate RPDs exceed 50%

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53188-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the volatiles by SW-846 Method 8260B, semivolatiles by SW-846 Method 8270D, PAHs by SW-846 Method 8270D SIM, and PCBs by SW-846 Method 8082A from TestAmerica Nashville. This report consists of the validation of ten soil and sediment samples collected on May 14, 2014 and May 15, 2014 and two rinsate blanks collected on May 14, 2014 and May 16, 2014. Additionally, one trip blank was submitted for the volatile analysis. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SBS-18	490-53188-1
SBS-18-A	490-53188-2
SBS-9	490-53188-3
SS-1	490-53188-4
SS-11	490-53188-5
SS-11-A	490-53188-6
SS-18	490-53188-7
SS-9	490-53188-8
RB-02	490-53291-1
RB-03	490-53364-1
SS-21	490-53364-4
SS-4	490-53364-5
TB-07	490-53188-9TB

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative referred to MS/MSD outliers for volatile, semivolatile, and PAH SIM analyses. The MS/MSDs were performed on samples from other SDG were not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision for the soil samples.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Volatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exception noted below. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 20% (30% for trace analysis) for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

The average RRF for acetone from the May 6, 2014 initial calibration on instrument HP48 was less than 0.01. As a result of the low RRF, the following non-detected results were rejected (R):

- Acetone in samples TB-07 and RB-03

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PAH SIM
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for all PAH compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or equal to 20% for all PAH compounds or the correlation coefficient (r^2) was greater than 0.99.

PCBs
Percent relative standard deviations (%RSDs) for the calibration peaks used to quantitate the Aroclors were less than or equal to 20% or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Volatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05 (0.001 for 1,4-dioxane) with the exception noted below. The percent differences (%Ds) were less than or equal 40% for the poor responders (50% for 1,4-dioxane) and less than or equal to 25% (30% for trace analysis) for all other analytes.

The RRF for 1,4-dioxane (0.0009) from the May 22, 2014 continuing calibration on instrument HP48 was below the data validation QC limits. As a result of the low RRF, the following non-detected result was rejected (R):

- 1,4-Dioxane in sample RB-03

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes.

PAH SIM
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for all compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 25% for all analytes.

The %Ds for two surrogate compounds exceeded 25%. No action was required.

PCBs
Continuing calibration standards were analyzed at the required frequency. The percent differences (%Ds) were less than or equal to 15% for the opening Aroclor standards bracketing standards with the exceptions noted below.

The following sample result was qualified as estimated (UJ) because the %Ds for one or more of the peaks exceeded criteria in the associated continuing calibration on both columns:

- PCB-1260 in sample RB-03

Laboratory Blanks

Volatiles
Method blank analyses were performed for each matrix, after the continuing calibration standards and once for every 12-hour time period.

Methylene chloride, 1,2,3-trichlorobenzene, and 1,4-dioxane were detected in the method blanks at a concentration below the reporting limit (RL) for the aqueous QC batches. However, no action was required as these compounds were not detected in the associated field blank samples.

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. Bis(2-ethylhexyl)phthalate was detected in aqueous method blank at a concentration below the reporting limit (RL).

As a result of the method blank contamination, the following detected result less than the reporting limit was raised to the reporting limit and qualified as not detected (U):

- Bis(2-ethylhexyl)phthalate in sample RB-02

PAH SIM
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the SIM method blanks.

PCBs
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the PCB method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

One trip blank was collected and analyzed with the volatile sample analyses. Additionally, two rinsate blanks, RB-02 collected on May 14, 2014 and RB-03 collected on May 16, 2014, were submitted in this SDG. The volatile analysis for RB-02 was submitted in SDG 490-53123-1. The rinsate blanks were not contaminated with target compounds. [Note: The bis(2-ethylhexyl)phthalate result in RB-02 was considered laboratory contamination and was qualified accordingly.]

The trip blank, TB-07, was contaminated with toluene; however, no action was required as this compound was not detected in the associated samples.

Two sets of field duplicates was collected and submitted with this SDG. Sample set SBS-18 and SBS-18-A and sample set SS-11 and SS-11-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit) with the exception noted below.

The following detected sample results were qualified as estimated (J) because the field duplicate RPDs exceeded 50%.

- Benzo(a)pyrene, benzo(b)fluoranthene, and pyrene in samples SS-11 and SS-11-A

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the volatile, semivolatile, PAH SIM, and PCB analyses. All surrogate recoveries were within the laboratory QC limits with the semivolatile exceptions noted below.

Semivolatiles
The recoveries for the surrogate compounds 2-fluorophenol and 2,4,6-tribromophenol were less than the laboratory QC limits and less than 10% for sample SS-9. As a result of the surrogate recoveries being less than 10%, the following non-detected results were qualified as rejected (R):

- All acid fraction compounds (phenols) in sample SS-9

[Note: Based on professional judgment all acid fraction compounds in sample SS-9 were qualified because the samples were analyzed by SW846 Method 8270D and did not include the full suite of deuterated monitoring compounds. Therefore associated compounds as listed in the Functional Guidelines were not applicable. Qualification for these semivolatile samples was based on the October 1999 Functional Guidelines which are more applicable to this method.]

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

This MS/MSD for the volatile and semivolatile analyses performed on samples from other SDGs were not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision

MS/MSD analyses were not include or required for the PAH-SIM analysis. The only sample analyzed for this method was the rinsate blank.

PCBs
MS/MSD analyses were performed on sample SS-21. All MS/MSD percent recoveries and relative percent differences (RPDs) were within the laboratory QC limits.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch and analyses. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the following exceptions.

Volatiles
Elevated recoveries were reported for a few several compounds in the LCS and/ or LCSD analyses for QC batches 490-162967, 490-163609, and 490-164246; however, no action was required for the elevated LCS recoveries because the compound was not detected in the associated volatile samples.

Semivolatiles
The LCS recovery for benzaldehyde exceeded the laboratory QC limit for aqueous QC batch 490-163630. However, no action was required for the elevated LCS recovery because the compound was not detected in the associated samples.

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

According to the laboratory case narrative, the semivolatile sample SS-11-A had internal standards outside QC limits and was reanalyzed. Only one analysis of this sample was reported and all internal standard responses were acceptable.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

These PCB samples did not require GC/MS Confirmation.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Retention times

The decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) retention time shifts were within the specified control limits for PCBs.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Volatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
TB-07, RB-03	Acetone	R	Initial calibration RRF below QC limits
RB-03	1,4-Dioxane		Continuing calibration RRR below QC limits

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-9	All acid fraction compounds (phenols)	R	Surrogate recoveries less than QC limits and 10%
RB-02	Bis(2-ethylhexyl)phthalate	U	Method blank contamination

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-11, SS-11-A	Benzo(a)pyrene Benzo(b)fluoranthene Pyrene	J	Field Duplicate RPDs exceeded 50%

PCBs

Sample ID	Elements	Qualifiers	Reason for Qualification
RB-03	PCB-1260	UJ	Continuing calibration %Ds exceeded 15%

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53394-1

This data validation report presents the results of the metals data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of total metals and mercury by SW-846 Methods 6010C, 7471B, and hexavalent chromium by SW-846 Method 7196A from TestAmerica Nashville. This report consists of the validation of nine soil and sediment samples collected on May 14, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SS-10	490-53394-7
SS-12	490-53394-8
SS-14	490-53394-9
SS-16	490-53394-10
SBS-4-1	490-53394-3
SBS-4-2	490-53394-4
SS-4	490-53394-13
SS-6	490-53394-14
SS-6-A	490-53394-15

(Samples SS-10, SS-12, SS-14, and SS-16 were analyzed for metals and samples SBS-4-1, SBS-4-2, SS-4, SS-4, and SS-6-A were analyzed for hexavalent chromium.)

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (January 2010), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- Calibrations
- Blanks
- Interference check samples
- Laboratory Control Samples (LCS)
- Duplicate Sample Analysis
- Spike Sample Analysis
- ICP Serial Dilution
- ICP-MS Tune Analysis
- ICP-MS Internal Standards
- Field Duplicates
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative referred to MS/MSD outliers for the MS/MSD for the QC batch associated with the soil samples. This MS/MSD and the serial dilution for the soil sample analyses performed on a sample from another SDG were not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision for the soil samples.

No laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Sample reporting limits were adjusted for sample size, dilution, and percent solids. The samples were initially analyzed at a 2X or 10X dilutions for Method 6010C. Undiluted analyses were not included. Non-detected results in these samples are therefore reported at elevated reporting limits. The case narrative only indicated that these samples required dilution prior to analysis.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved and on ice. However, several samples were received at a temperature of 8.0°C, which exceeded the temperature range of 4 ± 2 °C. No action was taken on the elevated receipt temperature as the samples were received by the laboratory within one day of sample collection. No other shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. Mercury was analyzed within 28 days of sample collection and all other metals were analyzed within 180 days of sample collection. Hexavalent chromium was extracted within 30 days of collection and analyzed within seven days of extraction for the solid samples.

Calibrations

The instruments were calibrated at the required frequency. An initial calibration verification standard (ICV) analysis was performed after the initial calibration and Continuing calibrations (CCVs) were analyzed every ten samples. Additionally, low-level calibration verification standards required for Methods 6010C and 7471B were analyzed at the beginning of each analytical sequence with a true value at the reporting limits. All correlation coefficients were greater than 0.99.

Initial Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Continuing Calibration Verification

The percent recoveries of mercury were within 85-115%. All other analytes were within 90-110%.

Low-level Calibration Verification

The low-level calibration verification standard recoveries were within QC limits (70-130%) for the CRIs associated with reported analytes.

Blanks

The method/preparation blanks and calibration blanks were analyzed at the required frequency.

Preparation Blank

Manganese was detected in the method blank for QC batch 490-164154. However, all sample results for manganese were greater than the blank action level.

Calibration Blanks

No target analytes were detected.

Field Blanks

The rinsate blank, sample RB-02 collected on May 14, 2014 and associated with these samples was submitted in SDG 490-53188-1. The rinsate blank was contaminated with aluminum, chromium, copper, lead, manganese, thallium, and zinc. As a result, the

following sample results less than the reporting limit were qualified as non-detected (U):

- Thallium in samples SS-12, SS-14, and SS-16

No action was necessary for the other detected analytes in the rinsate blank because the associated sample results were either above the blank action level or non-detect.

Interference Check Samples

All interference check sample percent recoveries were within 80-120%, were within 2x the reporting limit (RL), or the sample results for aluminum, calcium, iron, and magnesium were at concentrations below the interfering levels in the ICS solution.

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for all analyses and for each analytical batch. All LCS recoveries were within the QC limits of 80-120% and all RPDs were less than 20%.

Duplicate Sample Analysis

A matrix duplicate analyses was performed on sample SBS-4-2 as requested on the chain-of-custody form for hexavalent chromium. A matrix spike/matrix spike duplicate analyses (MS/MSD) was performed on sample SS-14 for mercury. The MS/MSD RPDs were less than 35%.

A MS/MSD or duplicate was not provided or evaluated for the soil samples for Method 6010C. A QC sample was not selected for the samples from this SDG.

Spike Sample Analysis

A matrix spike was performed on sample SBS-4-2 as requested on the chain-of-custody form for hexavalent chromium. An additional MS/MSD was performed on sample SS-14 for mercury. All MS and/or MSD percent recoveries were within the QC limits of 75-125% or the sample amount was greater than four times the spike value with the exceptions noted below:

The MSD recovery for mercury (137%) for sample SS-14 for QC batch 490-164980 was greater than 125% and a post digestion spike was not provided. As a result of the elevated MSD recovery, the following detected results were qualified as estimated with positive bias (J+):

- Mercury in samples SS-14 and SS-16

ICP Serial Dilution

An ICP serial dilution was not performed on a sample from this SDG and no data were provided.

ICP-MS Tune Analysis

Instrument tunes were not applicable to these analyses.

ICP-MS Internal Standards

Internal standard recoveries were not applicable to these analyses.

Field Duplicate

One set of field duplicates was collected and submitted with this SDG for hexavalent chromium. Sample set SS-6 and SS-6-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit).

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-12, SS-14, SS-16	Thallium	U	Rinsate blank contamination
SS-14, SS-16	Mercury	J+	MS/MSD recoveries exceeded 125% and no post digestion

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Inorganics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximated concentration of the analyte in the sample.
B	The result is presumed a blank contaminant. This qualifier is used only for drinking water samples.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

DATA VALIDATION REPORT

Report Date: June 13, 2014
Project/Site: Beech Bottom Plant and Industrial Park
Laboratory No: 490-53394-1

This data validation report presents the results of the organics data validation for the data obtained during the field activities for the above referenced work assignment. The purpose of this review is to provide a technical validation of the semivolatiles by SW-846 Method 8270D and PCBs by SW-846 Method 8082A from TestAmerica Nashville. This report consists of the validation of ten soil and sediment samples collected on May 14, 2014 and May 15, 2014. The field sample numbers and corresponding laboratory numbers are presented below:

Field Sample Number	Laboratory Sample Number
SS-10	490-53394-7
SS-12	490-53394-8
SS-14	490-53394-9
SS-16	490-53394-10
SBS-20	490-53394-1
SBS-21	490-53394-2
SBS-7	490-53394-5
SBS-8	490-53394-6
SS-20	490-53394-11
SS-20-A	490-53394-12

(Samples SS-10, SS-12, SS-14, and SS-16 were analyzed for semivolatiles and samples SBS-20, SBS-21, SBS-7, SBS-8, SS-20, and SS-20-A were analyzed for PCBs.)

Data validation was conducted in accordance with the U.S. EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), modified for the methods used (Test Methods for Evaluating Solid Wastes, SW-846).

Validated By: Bill Fear, TLI Solutions, Inc. Reviewed By: Lisa Tyson, TLI Solutions, Inc.

A Level 3 validation was performed on the samples (raw data were not evaluated). The data were evaluated based on the following parameters:

- Sample Documentation
- Data Completeness Check
- Preservation/Holding Time
- GC/MS or GC/ECD Instrument Performance Check/tuning
- Initial Calibration
- Continuing Calibration Verification
- Laboratory Blanks
- Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)
- Deuterated Monitoring Compound or Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (%R, RPD)
- Laboratory Control Samples (LCS)
- Internal Standards
- Pesticide Cleanup Checks
- PCB GC/MS Confirmation
- Compound Quantitation and Reported RLs
- Retention times
- Overall Assessment

Sample Documentation

The chain-of-custody form was properly filled out including signatures, date and time of sampling, sampling identification, analyses requested, and custody transfers between different parties were signed and dated.

The samples collected were appropriately identified and analyzed as per the chain-of-custody records.

The case narrative referred to MS/MSD outliers for the semivolatile analysis. The MS/MSDs were performed on samples from other SDG were not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision for the soil samples.

No other laboratory documentation problems were noted.

Data Completeness Check

All necessary data were provided to complete a Level III data validation.

Preservation/Holding Time

The samples were received at the laboratory in good condition, properly preserved, on ice and within the temperature range of 4 ± 2 °C. No shipping or receiving problems were noted.

Analytical holding times were assessed to determine whether the holding time requirements were met by the laboratory. All samples were prepared and/or analyzed within the method specific holding times.

GC/MS or GC/ECD Instrument Performance Check/tuning

Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data for all associated tunes.

Initial Calibration

Semivolatiles
Initial calibration standards containing both target compounds and the surrogate compounds were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) of the RRFs were less than or 40% for the poor responders and less than or equal to 20% for all other analytes or the correlation coefficient (r^2) was greater than 0.99.

PCBs
Percent relative standard deviations (%RSDs) for the calibration peaks used to quantitate the Aroclors were less than or equal to 20% or the correlation coefficient (r^2) was greater than 0.99.

Continuing Calibration Verification

Semivolatiles
Continuing calibration standards containing both target compounds and the surrogates were analyzed at the beginning of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 and the RRFs for all other target compounds were greater than or equal to 0.05. The percent differences (%Ds) were less than or equal 40% for the poor responders and less than or equal to 25% for all other analytes with the exceptions noted below.

The following sample results were qualified as estimated (UJ) because the %Ds exceeded criteria in the associated continuing calibration:

- Atrazine and benzaldehyde in samples SS-12, SS-14, and SS-16

PCBs
Continuing calibration standards were analyzed at the required frequency. The percent differences (%Ds) were less than or equal to 15% for the opening Aroclor standards bracketing standards with the exceptions noted below.

%Ds for several peaks exceeded 15% for the June 2, 2014 (1403) continuing calibration on column RTX-5. No action was taken as all %Ds from the RTX-50 column were less than 15% and no detected results were reported in the associated samples.

Laboratory Blanks

Semivolatiles
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the semivolatile method blank.

PCBs
Method blanks were reported per matrix, per concentration level, and for each extraction batch. No target compounds were detected in the PCB method blanks.

Field QC samples (trip and field blanks, equipment rinsate, field duplicates, etc.)

The rinsate blanks, RB-02 collected on May 14, 2014 and RB-03 collected on May 16, 2014 and submitted in another SDG, were associated with these samples. The rinsate blanks were not contaminated with target compounds. [Note: The bis(2-ethylhexyl)phthalate result in RB-02 was considered laboratory contamination and was qualified accordingly.]

One set of field duplicates was collected and submitted with this SDG for the PCB analysis. Sample set SS-20 and SS-20-A are field duplicate pairs. Field sample duplicate criteria were met (i.e., for results greater than 5x the reporting limit, RPDs were less than 50% and for results less than 5x the reporting limit, the difference between the duplicate and the original results was less than 1x the reporting limit).

Deuterated Monitoring Compound or Surrogate Recoveries

Surrogate compounds were added to all samples, QC samples, and blanks for the semivolatile and PCB analyses. All surrogate recoveries were within the laboratory QC limits with the exceptions noted below.

Semivolatiles
The recovery for the surrogate compound 2,4,6-tribromophenol (8%) was less than the laboratory QC limits and less than 10% for sample SS-10. As a result of the surrogate recovery less than 10%, the following non-detected results were qualified as rejected (R):

- All acid fraction compounds (phenols) in sample SS-10

The recovery for the surrogate compounds nitrobenzene-d5 (24%) and 2-fluorbiphenyl (25%) was less than the laboratory QC limits but greater than 10% for sample SS-10. As a result of the low surrogate recoveries, the following results were qualified as estimated (J/UJ):

- All base/neutral compounds in sample SS-10

The recovery for the surrogate compound nitrobenzene-d5 at 23% was less than the laboratory QC limits, but greater than 10% for sample SS-14. No action was taken as only one "base/neutral" surrogate recovery was outside QC limits.

[Note: Based on professional judgment the results were qualified as indicated above because the samples were analyzed by SW-846 Method 8270D and did not include the full suite of deuterated monitoring compounds. Therefore, associated compounds as listed in the Functional Guidelines were not applicable. Qualification for these semivolatile samples was based on the October 1999 Functional Guidelines, which are more applicable to this method.]

Matrix Spike/Matrix Spike Duplicate (%R, RPD)

This MS/MSD for the semivolatile and PCB analyses performed on samples from other SDGs were not provided or evaluated. A QC sample was not selected for the samples from this SDG. LCS/LCSD analyses were used to evaluate for accuracy and precision

Laboratory Control Samples (LCS)

The laboratory analyzed a laboratory control sample and laboratory control sample duplicate for each analytical batch and analyses. The LCS recoveries and LCS/LCSD RPDs were within the laboratory QC limits with the following exceptions.

Semivolatiles
The LCS/LCSD RPD for 2,4-dinitrophenol at 58% exceeded the laboratory QC limit of 50% for QC batch 490-163580. As a result, the following non-detected results were qualified as estimated (UJ):

- 2,4-Dinitrophenol in samples SS-12, SS-14, SS-16

Internal Standards

Internal standards were added to all samples, QC samples, and blanks for the volatile and semivolatile analyses. The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Internal standard area counts did not vary by more than a factor of two from the associated 12-hour calibration standard.

Pesticide Cleanup Checks

Gel permeation chromatography (GPC) checks and florisil cartridge performance checks were not applicable to these methods.

PCB GC/MS Confirmation

These PCB samples did not require GC/MS Confirmation.

Compound Quantitation and Reported RLs

Sample reporting limits were adjusted for sample size, dilution, and percent solids.

Retention times

The decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) retention time shifts were within the specified control limits for PCBs.

Overall Assessment and Summary

The following table lists the data qualifiers added to the sample analyses as described in the sections above.

Semivolatiles

Sample ID	Elements	Qualifiers	Reason for Qualification
SS-12, SS-14, SS-16	Atrazine Benzaldehyde	UJ	Continuing calibration %Ds greater than 40%
SS-10	All acid fraction compounds (phenols)	R	Surrogate recoveries less than QC limits and 10%
	All base/neutral compounds (non-phenols)	J/UJ	Surrogate recoveries less than QC limits but greater than 10%
SS-12, SS-14, SS-16	2,4-Dinitrophenol	UJ	LCS/LCSD RPD exceeded QC limits

PCBs

Sample ID	Elements	Qualifiers	Reason for Qualification
None	None	None	None

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

Validation Qualifiers or Flags (Organics)

US EPA Flags	Definition
U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted RL for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the RL.
B	The result is presumed a blank contamination artifact.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted RL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The result is unuseable. The sample result is rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Appendix G

Unvalidated Data Reports

(On CD)

Appendix H
Monitoring Well Construction Logs

State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0001-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0001-14
Grid Location:
a. Latitude: 40 12 47 .0
b. Longitude: 80 39 39 .0
c. Method Used: Survey

Company/Project Well No.:
MW-1

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

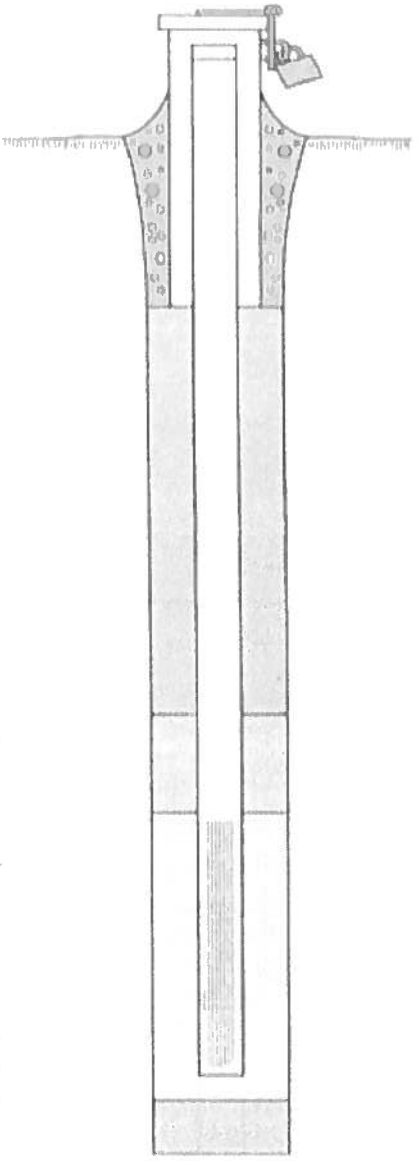
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/08/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 8.5 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: gravity pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 5 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 200 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 7 ft.
15.Depth to Top of Screen: 9 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: gravity pour
18.Well Depth: 19 ft.
19.Bottom of Filter Pack: 19 ft.
20.Bottom of Borehole: 19 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: pressure wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0002-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0002-14
Grid Location:
a. Latitude: 40 12 54 .0
b. Longitude: 80 39 36 .0
c. Method Used: Survey

Company/Project Well No.:
MW-2

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

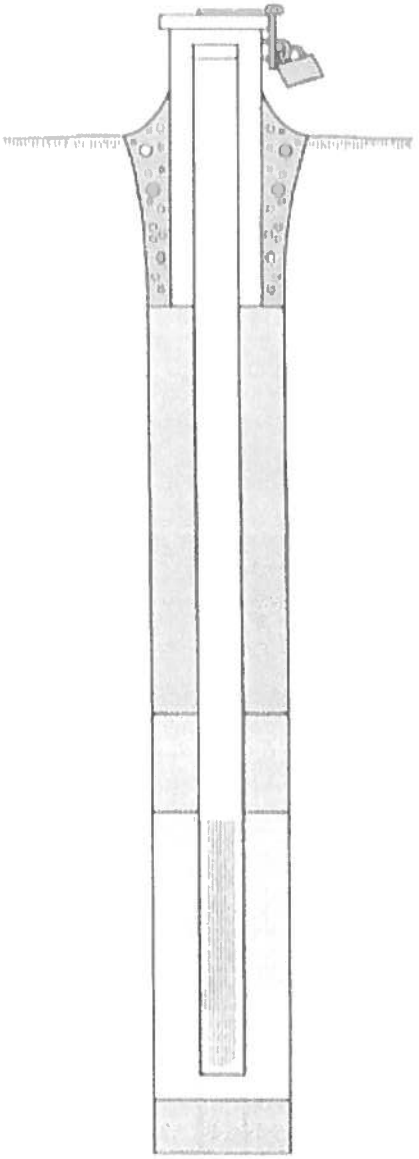
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/07/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 8.5 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 12.7 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 200 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 15 ft.
15.Depth to Top of Screen: 17 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 27 ft.
19.Bottom of Filter Pack: 27 ft.
20.Bottom of Borehole: 27 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0003-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0003-14
Grid Location:
a. Latitude: 40 12 59 .0
b. Longitude: 80 39 34 .0
c. Method Used: Survey

Company/Project Well No.:
MW-3

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

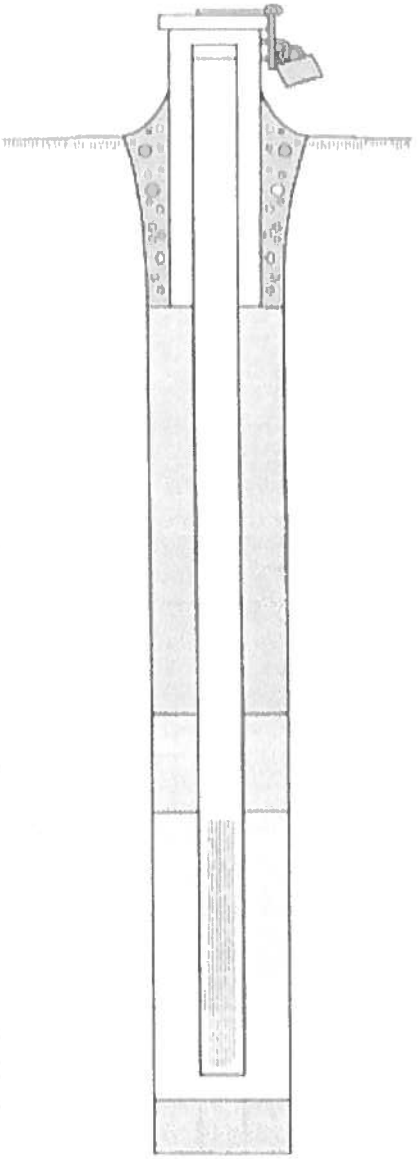
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/07/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 8.5 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 14.6 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 210 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 16.7 ft.
15.Depth to Top of Screen: 19 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 29 ft.
19.Bottom of Filter Pack: 29 ft.
20.Bottom of Borehole: 29 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0004-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0004-14
Grid Location:
a. Latitude: 40 13 3 .0
b. Longitude: 80 39 21 .0
c. Method Used: Survey

Company/Project Well No.:
MW-4

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

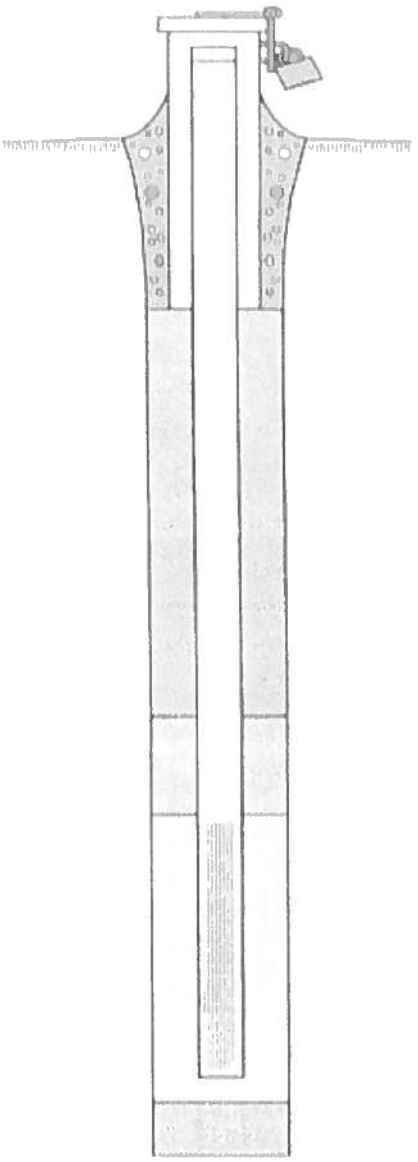
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/06/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 8.5 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 25.3 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 270 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 28 ft.
15.Depth to Top of Screen: 29.6 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 39.6 ft.
19.Bottom of Filter Pack: 39.6 ft.
20.Bottom of Borehole: 39.6 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0005-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0005-14
Grid Location:
a. Latitude: 40 12 54 .0
b. Longitude: 80 39 25 .0
c. Method Used: Survey

Company/Project Well No.:
MW-5

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

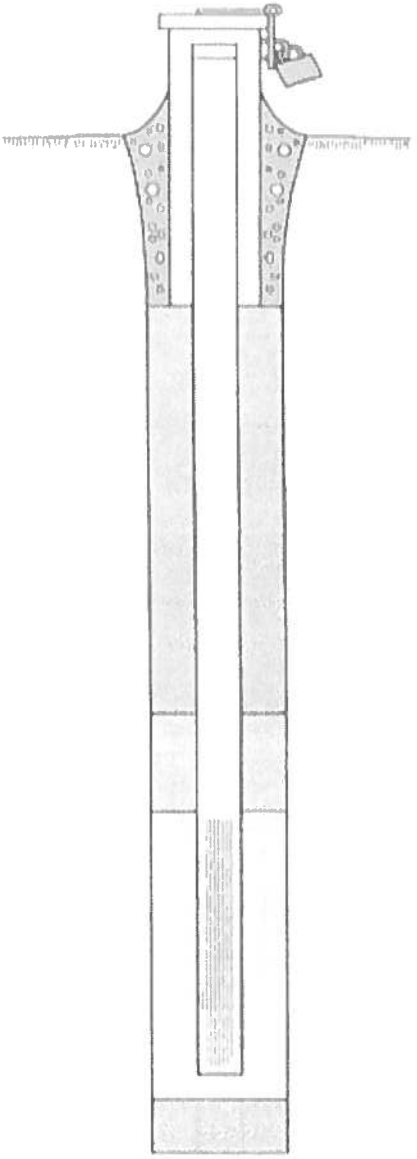
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/09/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 2 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 14.1 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 240 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 16.5 ft.
15.Depth to Top of Screen: 19 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: gravity pour
18.Well Depth: 29 ft.
19.Bottom of Filter Pack: 29 ft.
20.Bottom of Borehole: 29 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0006-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0006-14
Grid Location:
a. Latitude: 40 12 48 .0
b. Longitude: 80 39 31 .0
c. Method Used: Survey

Company/Project Well No.:
MW-6

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

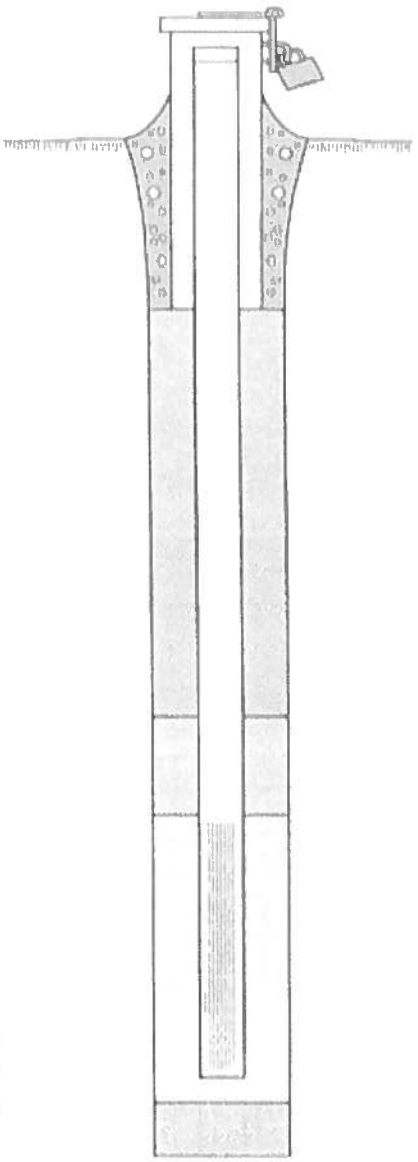
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/08/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 2 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 24.7 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 230 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 27 ft.
15.Depth to Top of Screen: 29 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 39 ft.
19.Bottom of Filter Pack: 39 ft.
20.Bottom of Borehole: 39 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0007-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0007-14
Grid Location:
a. Latitude: 40 12 50 .0
b. Longitude: 80 39 35 .0
c. Method Used: Survey

Company/Project Well No.:
MW-7

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

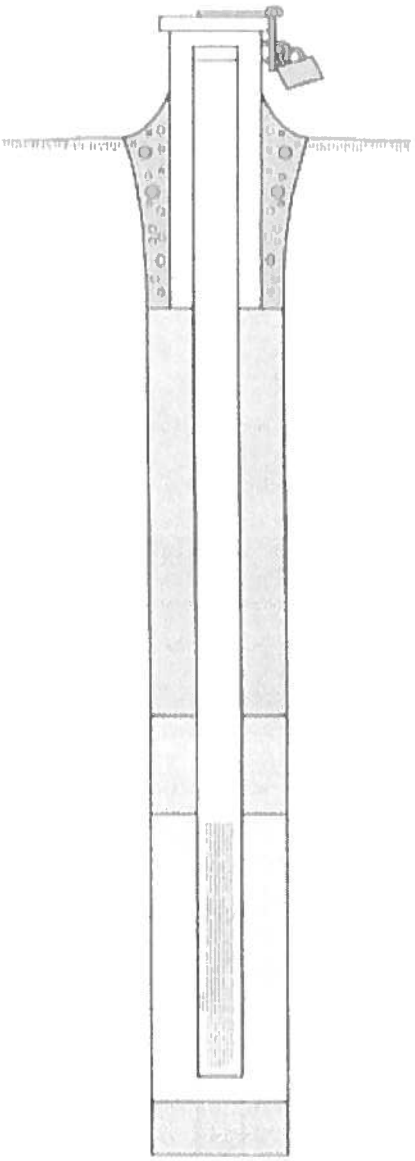
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/12/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 8.5 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 12.7 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 220 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 14.9 ft.
15.Depth to Top of Screen: 17 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 27 ft.
19.Bottom of Filter Pack: 27 ft.
20.Bottom of Borehole: 27 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0008-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0008-14
Grid Location:
a. Latitude: 40 12 56 .0
b. Longitude: 80 39 30 .0
c. Method Used: Survey

Company/Project Well No.:
MW-8

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

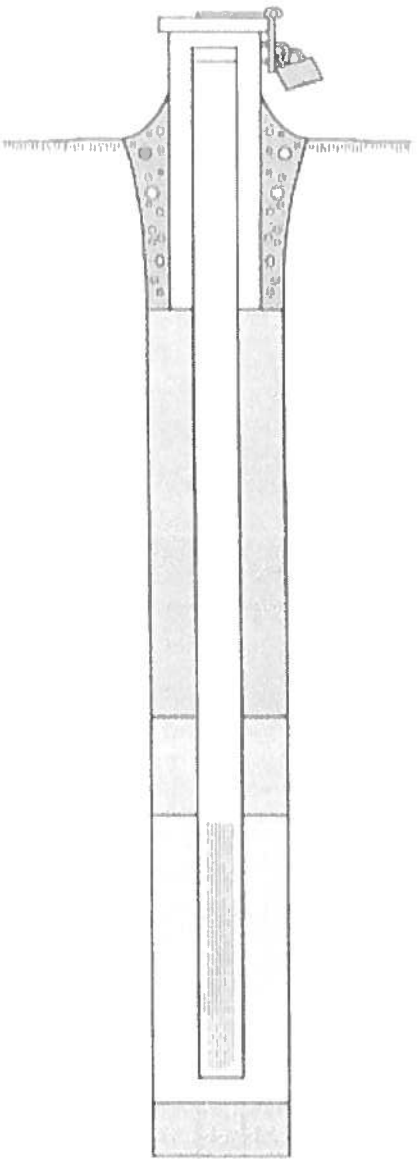
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/12/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 2 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 14.6 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 230 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 16.9 ft.
15.Depth to Top of Screen: 19 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 29 ft.
19.Bottom of Filter Pack: 29 ft.
20.Bottom of Borehole: 29 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938



State of West Virginia
Department of Environmental Protection

Monitoring Well Construction
Well Number: WV00533-0009-14

Site Name/Physical Address:
Site: Beech Bottom Industrial Site
Line 1: 2481 River Road
Line 2:
City: Wellsburg
State: WV
Zip: 26070-
County: Brooke

Well Registration No. WV00533-0009-14
Grid Location:
a. Latitude: 40 12 53 .0
b. Longitude: 80 39 21 .0
c. Method Used: Survey

Company/Project Well No.:
MW-9

Purpose of Monitoring Well:
Environmental Monitoring

Well Owner (Name, Firm, Address):
Owner: US EPA
Line 1: 1650 Arch Street
Line 2:
City: Philadelphia
State: PA
Zip: 19102-
Phone: 215-814-5000

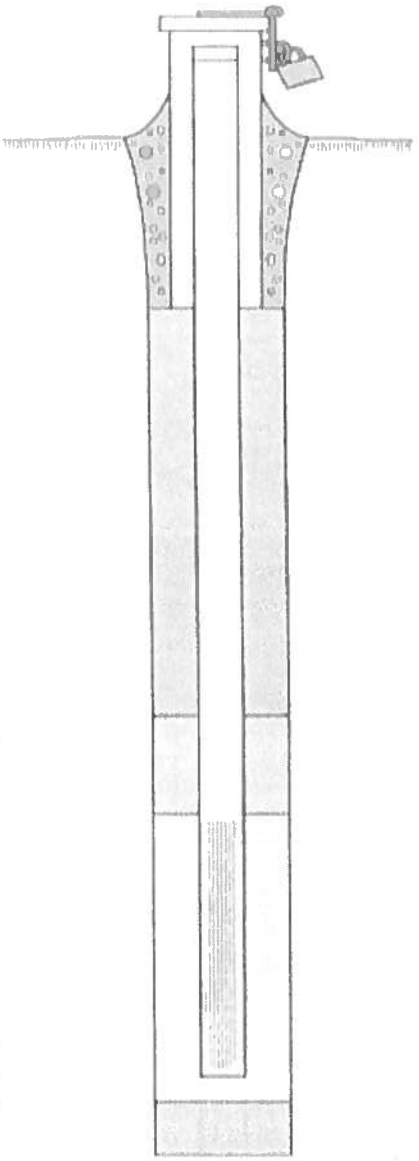
Installed By (Name, Firm, Address):
Installer: Toby Boozer
Line 1: Kodiak Field Services
Line 2: 678 Georgetown Road
City: Hadley
State: PA
Zip: 16130-
Phone: 724-253-2411

Date Well Installed:
05/05/2014

Driller's WV Cert No.
WV00533

Section B: (all number fields must be in decimal format)

1.Cap and Lock: YES
2.Protective Cover: Protective Cover Pipe
3.Monitoring Well Reference Point: 0 ft.
4.Borehole Diameter: 2 inches.
5.Ground Surface Seal:
a.Material: concrete
b.Installation Procedure: Gravity Pour
6.Surface Seal Bottom/Annular Space Top: 1 ft.
7.Well Riser: a.OD Well Riser: 2.5 inches. b.ID Well Riser: 2 inches.
c.Material: PVC
d.Installation Procedure: Hand
8.Annular Space Seal:
a.Material: cement grout -
b.Installation Procedure: tremie pipe-pumped
9.Well Development Procedure: surge/purge -
10.Drilling Method Used: hollow stem auger -
11.Annular Space Seal Bottom/Filter Seal Top: 34.3 ft.
12.Drilling Fluid Used: No Source:
13.Filter Pack Seal:
a.Material: bentonite chip
b.Installation Procedure: Gravity Fed
c.Volume Added: 250 pounds
14.Bottom of Bentonite Seal/Filter Pack Top: 36.8 ft.
15.Depth to Top of Screen: 39.5 ft.
16.Screen:
a.Material: PVC
b.Installation Procedure: Hand
c.Slot Size: 0.01 inches. d.Screen Length: 10 ft.
17.Filter Pack:
a.Material: medium sand
b.Installation Procedure: Gravity Pour
18.Well Depth: 49.5 ft.
19.Bottom of Filter Pack: 49.5 ft.
20.Bottom of Borehole: 49.5 ft.
21.Backfill Material (below filter pack): Soil
22.Decontamination Procedures: Pressure Wash
23.Special Circumstances and Exceptions: No Variance Number:
24.WV Contractor License No. WV044938

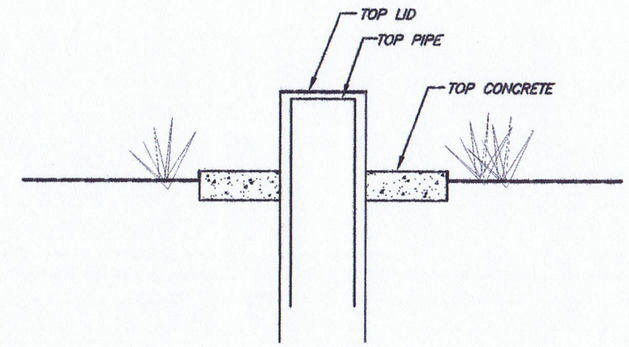


Appendix I
Monitoring Well Locations and Elevations

NORTH

MW-3
TOP CONCRETE 666.696
TOP LID 669.777
TOP PIPE 669.507
N: 627242.979
E: 1644734.853

MW-4
TOP CONCRETE 665.799
TOP LID 668.659
TOP PIPE 668.399
N: 627650.111
E: 1645753.468



X = 1645000.00
Y = 627000.00

X = 1646000.00
Y = 627000.00

MW-8
TOP CONCRETE 667.068
TOP LID 669.735
TOP PIPE 669.525
N: 626969.680
E: 1645010.891

MW-5
TOP CONCRETE 672.958
TOP LID 675.721
TOP PIPE 675.511
N: 626797.582
E: 1645377.661

MW-2
TOP CONCRETE 662.563
TOP LID 665.454
TOP PIPE 665.114
N: 626717.019
E: 1644519.383

MW-9
TOP CONCRETE 699.598
TOP LID 702.693
TOP PIPE 702.473
N: 626624.727
E: 1645676.524

MW-7
TOP CONCRETE 664.280
TOP LID 666.717
TOP PIPE 666.497
N: 626333.071
E: 1644613.830

MW-1
TOP CONCRETE 654.121
TOP LID 657.073
TOP PIPE 656.823
N: 626023.622
E: 1644288.437

MW-6
TOP CONCRETE 667.605
TOP LID 670.416
TOP PIPE 670.086
N: 626148.133
E: 1644893.732

X = 1645000.00
Y = 626000.00

X = 1646000.00
Y = 626000.00

0 200 400 600
SCALE FEET

NOTES:

HORIZONTAL CONTROL: WEST VIRGINIA STATE PLANE NORTH, NAD 83.
VERTICAL CONTROL: NAVD 88

INSTRUMENT: TRIMBLE R-8 GPS UNIT / NIKON NPL-362.

I, CHARLES P. CARLISLE, A REGISTERED SURVEYOR OF THE STATE OF WEST VIRGINIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECTLY REPRESENTS THE MONITORING WELLS AS SURVEYED AND PLOTTED UNDER MY SUPERVISION FOR THE OWNERS OR AGENTS.

6-11-14 Charles P. Carlisle
DATE REGISTRATION NO. 454

CHARLES P. CARLISLE LICENSED No. 454 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

REFERENCES

REV.	REVISION DESCRIPTION	DATE	BY	CHKD	APPR

REVISIONS

REV.	REVISION DESCRIPTION	DATE	BY	CHKD	APPR
1	REVISED WELL NUMBERS.	6/10/14	BJE	PJN	PJN

PEDERSEN & PEDERSEN
Civil and Environmental Engineering/Surveying
441 Mars-Valencia Road, Suite 200
Valencia, PA. 16059
724-898-3300
FAX 724-625-1329

CLIENT
TechLaw, INC.
2208 WARWOOD AVENUE, WHEELING, WEST VIRGINIA 26003

PROJECT
BEECH BOTTOM PLANT AND INDUSTRIAL SITE
BEECH BOTTOM, BROOKE COUNTY, WEST VIRGINIA

SHEET TITLE
WELL LOCATIONS AND ELEVATIONS
May 19, 2014

DRAWN BJE
CHECKED PJN
APPROVED CPC
DATE 06/05/14

ISSUE DATE 06/10/14
REV. # 1
PROJECT # WV-438
SCALE 1"=200'
DWG # ES-1
SHEET 1 OF 1

Appendix J
Subsurface Soil Core Logs

Project: Beech Bottom	Date: 5-5-14	Boring No. #1	Time Start/Finish: 1318 / 1455
Address, City, State	Location ID: SS-17		Groundwater Depth:

Logged By: Matt Gadd	Driller	Company: Kodiak Field Services	Location Description: near fence in the North east corner of the gravel parking lot located across the street from the industrial building complex
Core Depth Range: 0-5 feet		Operator:	
Core Recovery: 4.1 feet		Rig Type: Geoprobe	
Total Depth of Boring: 42 feet		Drilling Method: Hollow-Stem Augers	Auger/Tube Size: 5ft tube 1.25" / PID Used: Multi Rae

Comments: Sampee SS-17 was taken at this location there encores were taken between 0.0 and 1.5 feet and the homogenized SVOA : TM sample was taken from 0.0 to 2.0 feet

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS-17	VOC SVOC T/M	photo 0121	0.0 to 0.1 - organic material - leaves, leaf litter, grass, sticks	dry	Not	
1.0	0.0				0.1 to 0.8 - clay with black carbon like substance which looks like fine ground coal - brown color	moist	low Plasticity	
1.5	0.0				0.8 to 4.1 - clay - brown in color, low moisture	~~Moderate~~ Moderate	Moderate	
2.0	0.0							
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							

TechLaw,Inc

Boring Log: Sheet 1 of 1

Project: Beech Bottom	Date: 5/14/14	Boring No. #3 SS14	Time Start/Finish: 0810/0815
Address, City, State	Location ID: SS14		Groundwater Depth:
Logged By: Matt Gadd	Company: Kodiak Field Services		Location Description: gravel storage area in rear of building on north end of site
Core Depth Range: 0-5	Operator: Jason		
Core Recovery: 3.7	Rig Type: Geoprobe		
Total Depth of Boring: 10 ft	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used: MultiRae

Driller

Comments: large area of like a black stage SS-14 sample was taken between 0.5 to 1.5 for homogenized sample

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
					0.0 to 0.2 - silt with gravel pieces - dark brown	Mod	NONE	
0.5	0.1	0830 SS14			0.02 to 0.3 - fine gravel with med sized stone - dark grey in color	Low	NONE	
1.0	0.0			0135	0.3 to 0.5 - gravel - grey in color	low	NONE	
1.5	0.0				0.5 to 1.3 - silty gravel with fine stone pieces - dark grey/black in color	low	NONE	
					1.3 to 1.5 - fine gravel - grey in color	low	NONE	
2.0	0.0				1.5 to 1.7 - gravel - crushed red brick fragments - red in color	low	NONE	
2.5	0.0				1.7 to 2.5 - silty gravel - greyish brown in color	Mod	NONE	
MG ~~3.0~~								
MG 3.5								

TechLaw, Inc

Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. #3 SS-14	Time Start/Finish: 0810 / 0818
Address, City, State	Location ID: SS-14		Groundwater Depth:
Logged By: Matt Gadd	Company: Hochall	Location Description: gravel storage area in rear of building on North end of site	
Core Depth Range: 5 - 10	Operator: Jason		
Core Recovery: mg ~~1ft~~ 1.2ft	Rig Type: geoprobe		
Total Depth of Boring: 10ft	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25	PID Used: Multi Rae

Driller

Comments: The total area of recover was homogenized for SBS-14 sample - sample time 0840 - in cores were taken prior to homogenizing

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SBS 14	0840	~~0137~~ ~~0138~~ 0134	0.0 - 1.0 - ~~silty~~ gravel with small angular rock pieces - dark brown/black in color	mod	NONE	
1.0	0.0				1.0 - 1.2 - silty gravel - dark brown	mod	NONE	

TechLaw, Inc

Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 4	Time Start/Finish:
Address, City, State	Location ID: SS15		Groundwater Depth:
Logged By: Matt Gadd	Company: Kochek	Location Description:	
Core Depth Range: 0 to 5	Operator: Jason		
Core Recovery: 2.8 ft	Rig Type: geoprobe		
Total Depth of Boring: 10 ft	Drilling Method: hollow core	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Driller

Comments:
SS-15 0905 - encore - 0.5 to 1.8
- homogenized - 0.5 to

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
				~~0.38~~ 0.37	0.0-0.3 - silt/clay/gravel - brown	mod	low	
0.5	0.0				0.3-0.5 - gravel - grey	NONE	NONE	
					0.5 to 1.1 - silty gravel with fine stone - black	low	NONE	
1.0	0.0	SS15			1.1 - copper wire fragments			
					1.1 to 1.8 fine gravel with silt - dark brown	low	NONE	
2.0	0.0				1.8 to 2.3 - clay with coarse sand/rock - light brown	low	low	
					2.3 to 2.4 - silty sand with med rock fragments	low	mod	
2.5	0.0				- reddish brown with black spots			
					2.4-2.5 - clayey sand - yellow color	low	Mod	
					2.5 - gravel - with fine silt - red in color	low	NONE	
					2.5-2.8 - greenish brown - clayey silt with rock fragments	mod	low	

TechLaw, Inc

Boring Log: Sheet 1 of 2

Project: Beech bottom	Date: 5/14/14	Boring No. 4	Time Start/Finish:
Address, City, State	Location ID: SS-15		Groundwater Depth:

Logged By: Matt Gadd / Gene Nance	Company: Kodiak	Location Description:	
Core Depth Range: 5 - 10	Operator: Jason		
Core Recovery: 1.8	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used: Mini Rae

Driller

Comments: PID hit of 1.5 ppm at 1½ foot of depth
SBS-15-

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.0	0.0	SBS 15		0/3	0.0 - 0.3 - silty loam with small rock fragments - black with yellow strips	low	NONE	
0.5	0.0				0.3 to 0.6 - sandy silt with rock - brown with yellow streaks	dry	NONE	
1.0	0.0				0.6 to 1.6 - silty clay loam with rock fragments - dark brown in color with lighter streaks	mod	low	
1.5	1.5				1.6 to 1.8 - gravel with fine silt/clay mixed in - medium brown in color	mod	low	

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Boring Log: Sheet 2 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 5	Time Start/Finish:
Address, City, State	Location ID: SS-13		Groundwater Depth:
Logged By: Matt Gadd / Gene Nance	Company: Kodiak	Location Description:	
Core Depth Range: 0-5	Operator: Jesse		
Core Recovery: 3.3 ft	Rig Type: geoprobe		
Total Depth of Boring: 10 ft	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used: MiniRae

Driller

Comments: 0940 - SS13 - 0 to 1.7 for VOC ; homogenized sample

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS13		0139	0.0-0.2 - topsoil - silty gravel - ~~light~~ med sized rock fragments - light brown	- mod	- none	
1.0	0.1				0.2 - 0.7 - silty gravel with med rock fragments - dark brown in color	- low	- none	
1.5	0.0				0.7 - 1.3 - gravel with silts mixed in - dark brown	- high	- none	
2.0	0.0				1.3 - 1.7 - silty loam with med rock fragments dark brown/black in color with light brown specks	- dry	- none	
2.5	0.1				1.7 - 2.1 - sandy gravel - grey in color with greenish blue specks	- dry	- none	
3.0	0.1				2.1 - 2.5 - sandy silts with small rock fragments Brown in color	- dry	- none	
					2.5 to 3.3 - sandy silt with coal and silver ish colored fragments	- dry	- none	

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Boring Log: Sheet 1 of 2 SS13

6

Project: Beede Bottom	Date:	Boring No. 5	Time Start/Finish:
Address, City, State	Location ID: SBS 13		Groundwater Depth:

Logged By: MGI/GN	Driller: Company: Kodiak	Location Description:	
Core Depth Range: 5-10	Operator: Joseph		
Core Recovery: 1.5 ft	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Comments:
SBS 13 – sample taken from 0 to 1.5 (5-to 6.5)
Sample time 0950

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.0	0.0	SBS 13		G 140	0.0 to 1.0 - sandy silt with small rock fragments dark brown with reddish specks; white/silicon specks	dry	NONE	
1.0	0.1				1.0 to 1.5 - Sandy gravel with fine silts - widespread rock fragments of various sizes - brown in color	Med	NONE	
1.5	0.1							

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SBS13

Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 6	Time Start/Finish:
Address, City, State	Location ID: SS-16		Groundwater Depth:

Logged By: MG/GN	Driller	Company: Kodiak	Location Description:
Core Depth Range: 0-5 / 5-10 / 10-15		Operator: Jason	
Core Recovery: 0.8ft / 1.4 / 2.7ft		Rig Type: geoprobe	
Total Depth of Boring: 20 ft		Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID / PID Used: Mini Rae

Comments:
SS-16-1000 - 0 to 0.8 ft
SBS16-1 - 10:10 - 5 to 6.9 ft (0.0 to 1.9)

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.1 SS16				0.0-0.3 - sandy gravel - light brown	dry	NONE	
					0.3-0.7 - sandy gravel with fine silt - light grey	low	NONE	
					0.7-0.8 - sandy gravel with med sized rock fragments & light grey in color	dry	NONE	
0.0				0141	0.0-0.5 - silty gravel with small rock fragments brown in color with black streaks	mod	NONE	
0.5	0.1				0.5-1.0 - sandy gravel with varying rock sizes light brown in color	low	NONE	
1.0	0.0				1.0-1.2 - clay with small rock fragments - brown in color	mod	low	
1.5	SS16-1				1.2 to 1.4 - silty sand - brownish yellow in color	mod	low	
0.5	0.0			0142	0.0-0.1 - clay with small rock fragments - brown	med	low	
					0.1 to 0.4 - clay with small rock fragments - black	med	low	
					0.4 to 2.7 - clay with fine silts - light brown	mod	mod	
1.0	0.0							
1.5	0.0							
2.0	0.0							
2.5	0.0							

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SS16

Boring Log: Sheet 1 of 2

Project: Beechbottom	Date: 5/14/14	Boring No. 6	Time Start/Finish:
Address, City, State	Location ID:		Groundwater Depth:

Logged By: MG/GW	Driller: Company: Kodiak	Location Description:	
Core Depth Range: ~~SBS-10~~ HG 15-20	Operator: Jason		
Core Recovery: 3.9 ft	Rig Type: geoprobe		
Total Depth of Boring: 20 ft	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: MultiRae

Comments: saturated 16.5-18.0
SBS-16-2 - 10:25 - @ 16.5 to 18.0 ft (1.7 to 3.0)

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
				0/1/3	0.0 to 1.7 - clay with fine sand - light brown	- mod	- high	
0.5	0.0				1.7 to 3.9 - sandy clay ~~sand~~ - light brown	- high	- high	
1.0	0.0							
1.5	0.0	SBS-16-2						
2.0	0.0							
2.5	0.0							
3.0	0.0							
3.5	0.0							

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Boring Log: Sheet 2 of 2 SS10

Project: Beech Bottom	Date: 5/14/14	Boring No. 7	Time Start/Finish:
Address, City, State	Location ID: SS-4		Groundwater Depth:

Logged By: MG / GN	Company: Kodiak	Location Description: next to Paint storage building
Core 0-5 / Depth 5-10 / Range: 10-15	Operator: Jason	
Core 25# / Recovery: 2.4# / 3.3	Rig Type: geoprobe	
Total Depth of Boring: 20	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID / PID Used: MultiRae

Driller

Comments:
SS4 - 0 to 2 ft - 1055
SBS-4-1 - 6.5 to 7.5 ft (1.5 to 2.5) - 1110

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS4		0144	0.0 to 0.2 - silty loam with med sized rock fragments - dark brown in color	low	none	
1.0	0.0				0.2 to 1.0 - silty sand with med sized rock fragments - dark brown	low	none	
1.5	0.0				1.0 to 1.6 - sandy gravel - with med sized ~~fragment~~ rock fragments - yellowish light brown	low	none	
2.0	0.0				1.6 to 2.1 - sandy gravel - with small rock fragments - red in color	low	none	
2.5	0.0				2.1 to 2.5 - sandy gravel - with med sized rock fragments - black in color	low	none	
0.5	0.0			0145	0.0 to 0.5 - sandy gravel - red in color - varying size rock fragments	low	none	
1.0	0.0				0.5 to 1.4 - clay with rock fragments - small in size - brown in color	moist	moderate	
1.5	0.0				1.4 to 2.0 - silt with small rock fragments - dark brown	moist	none	
2.0	0.1	SBS 4-1			2.0 to 2.4 - silt with small rock fragments - black	moist	none	
0.5	0.1			0146	0.0 to 0.2 - sand with varying rock fragments yellow in color	moist	none	
1.0	0.1				0.2 to 0.8 - fine sand - dark brown in color ~~w~~ coal fragments	moist	low	
1.5	0.1				0.8 to 1.1 - rock - angular pieces - coal like - black in color	dry	none	
2.0	0.1				1.1 to 1.3 - clay with rock fragments - coal like pieces	moist	low	
2.5	0.1				1.3 to 1.7 - clay with fine sand - light grayish brown	moist	low	
3.0	0.0				1.7 to 2.3 - clay - light brown with gray tinting	moist	low	
					2.3 to 3.0 - clay - brown in color	moist	low	
					3.0 to 3.3 - clayey sand - brown color	moist	low	

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Boring Log: Sheet 1 of 2 (SS4)

Project: Beech Bottom	Date: 5/14/14	Boring No. 7	Time Start/Finish:
Address, City, State	Location ID: SBS-4		Groundwater Depth:
Logged By: MG/GN	Driller: Company: Kodiak	Location Description:	
Core Depth Range: 15-20	Driller: Operator: Jason		
Core Recovery: 3.7 ft	Driller: Rig Type: geoprobe		
Total Depth of Boring: 20	Driller: Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used:

Comments:
16 ft saturated soil starts extends to 18.7 ft
SBS-4-2 (MSMSD) — 1130 - 16 to 18.7 ft

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
				0147	0.0 to 1.0 - clayey sand - light brown	moist	high	
0.5	0.1				1.0 to 2.7 - clayey sand - light brown	high	high	sat
					2.7 to 3.7 - clay with fine sand - light brown	moist	med	
1.0	0.1	SBS-4						
1.5	0.1							
2.0	0.1							
2.5	0.1							
3.0	0.1							
3.5	0.1							

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Boring Log: Sheet 2 of 2 SS4/SBS4

Project: Beech Bottom	Date: 5/14/14	Boring No. 8	Time Start/Finish:
Address, City, State	Location ID: SBS 12		Groundwater Depth:
Logged By: MG/GN	Company: Kodiak	Location Description:	
Core Depth: 0-5 / Range: 5-10	Operator: Jason		
Core Recovery: 2.9ft / 1.4ft	Rig Type: geoprobe		
Total Depth of Boring: 10 ft	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Driller

Comments:
SS 12 - 1225 - Collected form 0 to 2 ft
SBS 12 - collected from 2 to 3 ; 5 to 6.4 - 1245
SBS 12-1 - Collected from 2-3 ; 5 to 6.4 - 1250
SBS 12 was duplicate sample

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS 12			0.0 - 0.2 - gravel and fine silt - black in color	moist	none	
					0.2 - 0.5 - sandy gravel with med size rock - dark grey in color	dry	none	
1.0	0.0				0.5 to 1.3 - silty gravel with small rock pieces - dark grey in color	dry	none	
1.5	0.0				1.3 to 1.6 - sandy fine gravel - grey in color	dry	none	
2.0	0.0				1.6 to 2.9 - sandy fine gravel with metalic flakes black in color	dry	none	
2.5	0.0	SBS 12						
0.5		SBS 12		0148	0.0 to 1.3 - sandy fine gravel with metalic flakes black in color	moist	none	
1.0		SBS 12-1			1.3 to 1.4 - fine sand with rock fragments small in size - black	moist	none	
1.5								

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Boring Log: Sheet __ of ___

Project: Beech Bottom	Date: 5/14/14	Boring No. 9	Time Start/Finish:
Address, City, State	Location ID: 5/35-3		Groundwater Depth:
Logged By: MG/GN	Driller: Company: Kodiak	Location Description:	
Core Depth Range: 0-5 / 5-10	Operator: Jason		
Core Recovery: 2.1ft / 1.9ft	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25	PID Used: None

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments: SS-3 - 0.8 to 1.8 - 1315	Moisture	Plasticity	Additional Tests/Comments
0.5	no unusual odors	SS-3		0/49	0.0-0.4 - silt, with coarse sand; rock fragments grey in color with brown specks	dry	None	
1.0					0.4 to 0.7 - fine sand with silts and larger rock fragments - brown in color	moist	None	
1.5					0.7-1.7 - fine slag with med size rock fragments black in color	moist	None	
2.0					1.7 - fine grained mineral - black	moist	None	
					1.8-2.1 - sandy loam with med size rock fragments brown in color with black; white specks	moist	None	
0.5	no unusual odors			0/50	0.0-0.3 - sandy loam with med size rock fragments - brown in color	moist	None	
1.5					0.3 to 0.5 - fine sand with rock fragments - yellow	moist	None	
					0.5 to 1.3 - clay with rock fragments	moist	Mod	
					1.3 to 1.6 - slag with clay mixed in black with brown spots	moist	None	
					1.6 to 1.9 - clay with fine sand - brown	moist	Mod	

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SBS 3

Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 9	Time Start/Finish:
Address, City, State	Location ID: SBS-3		Groundwater Depth:

Logged By: MG/GN	Driller	Company: Kodiak	Location Description:
Core Depth Range: 10-15 / 15-20		Operator: Jason	
Core Recovery: 4.0 ft / 4.1		Rig Type: geoprobe	
Total Depth of Boring:		Drilling Method: hollow core Auger	Auger/Tube Size: 1.25 / PID Used: NONE

Comments:
SBS-3 - Saturated at 18 ft
- sample at 18 ft to 19.1 - 1335

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	No unusual odors			0151	0.0 to 1.3 - clay - brown	low	low	
					1.3 to 2.5 - clay - brown	mod	high	
					2.5 to 3.2 - clay - brown	low	low	
1.0					3.2 to 4.0 - clay with fine sand - light brown	mod	mod	
1.5								
2.0								
2.5								
3.0								
3.5								
.5	No unusual odors			0152	0.0 to 0.5 - sandy clay ~~with fine~~ - light brown	mod	mod	
					0.5 to 1.4 - clay with fine sand - light brown	mod	mod	
					1.4 to 3.3 - sandy clay - light brown	high	mod	
1.0					3.3 to 4.1 - fine sand with silt	high	none	
1.5								
2.0								
2.5								
3.0		SBS 3						
3.5								
4.0								

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Boring Log: Sheet __of ___

Project: Beech bottom	Date: 5/14/14	Boring No. 10	Time Start/Finish:
Address, City, State	Location ID: SS-6		Groundwater Depth:
Logged By: MG/GN	Company: Kodiak		Location Description:
Core Depth Range: 0-5 / 5-10	Operator: Jason		
Core Recovery: 2.9 / 2.1	Rig Type: geoprobe		
Total Depth of Boring: 25	Drilling Method: hollow core auger	Auger/Tube Size: 1.25ID	PID Used: ~~None~~ Multi Rae

Driller

Comments: SS-6 - 0 to 2 feet - 1405

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0			0153	0.0 to 0.6 - silt with fine sand and varying sizes of rock brown in color	dry	none	
1.0	0.0				0.6 to 1.1 - silt with sand and large rock fragments dark brown with yellow and grey spots	moist	none	
1.5	0.0	SS-6			1.1 to 1.5 - fine slag with silt & large rock fragments - black in color	moist	none	
2.0	0.0				1.5 to 2.3 - silt with fine sand and larger rock fragments dark brown	moist	none	
2.5	0.0				2.3 to 2.4 - coarse gravel with silt - brown in color	moist	none	
					2.4 to 2.9 - fine clay with varying rock sizes	moist	none	
0.5	0.0			0154	0.0 to 0.3 - coarse gravel with silt - grey in color	moist	none	
1.0	0.0				0.3 to 0.5 - coarse sand with silt & woody debris - brown	moist	low	
1.5	0.0				0.5 to 0.9 - clay with small rock fragments - brown	moist	med	
2.0	0.0				0.9 to 1.0 - coarse sand - hard pack - white in color	dry	none	
					1.0 to 1.4 - clay with rock fragments & woody debris	moist	med	
					1.4 to 1.5 - sandy silt with coarse rock - black in color	moist	none	
					1.5 to 2.1 - clay with small rock fragments	moist	med	

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Boring Log: Sheet 1 of 2 SB6-6

Project: Beach Bottom	Date: 5/14/14	Boring No. 10	Time Start/Finish:
Address, City, State	Location ID: SB6-6		Groundwater Depth:

Logged By: MG/GN	Driller — Company: Kodiak	Location Description:	
Core Depth Range: 10-15 / 15.-20	Operator: Jason		
Core Recovery: 4.6 / 4.5	Rig Type: Geoprobe		
Total Depth of Boring: 25	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: Mini Rae

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments:	Moisture	Plasticity	Additional Tests/Comments
					0.0-2.1 - clay with sparadic rock fragments - grayish brown in color	moist	mod	
0.5	0.0				2.1 - 4.6 - clay with fine silts	- low	- low	
1.0	0.0							
1.5	0.0							
2.0	0.0							
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							
				0/55	0.0 to 1.5 - fine silty clay - brown	- dry	NONE	
0.5	0.0				1.5 to 3.5 - fine sandy clay - brown	- moist	- NONE	
					3.5 to 4.5 - clay with very fine sand - brown	- moist	- low	
1.0	0.0							
1.5	0.0							
2.0	0.0							
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							

SB6 6

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Boring Log: Sheet 2 of 3

Project: Beech Bottom	Date: 5/14/14	Boring No. 10	Time Start/Finish:
Address, City, State	Location ID: SBS-6		Groundwater Depth:

Logged By: MG/GN	Driller — Company: Kodiak	Location Description:	
Core Depth Range: 20-25	Operator: Jason		
Core Recovery: 4.5	Rig Type: geoprobe		
Total Depth of Boring: 25	Drilling Method: hollowcore Auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Comments: SBS-6 - 1440 Sample depth 21.7 to 24.5

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Description	Moisture	Plasticity	Additional Tests/Comments
					0.0-0.7 - fine sandy clay - brown in color	moist	Mod	
0.5					0.7-1.7 - fine sandy clay - brown	Mod	Mod	
				0156	1.7-4.5 - clayey-fine sand - light brown -	high	high	Saturated
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								

SBS-6

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Boring Log: Sheet 3 of 3

Project: Beech Bottom	Date: 5/14/14	Boring No. 11	Time Start/Finish:
Address, City, State	Location ID: SBS19		Groundwater Depth:

Logged By: MG/GW	Driller	Company: Kodiak	Location Description:
Core Depth Range: 0-5 / 5-10		Operator: Jason	
Core Recovery: 2.4 ft / 2.3		Rig Type: geoprobe	
Total Depth of Boring:		Drilling Method: hollow core	Auger/Tube Size: 1.25 ID / PID Used: Multi Rae

Comments: SS19-1505 - 0 to 2 feet

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
		SS-19		0157	0.0-0.4 - silt with varying rock pieces - black in color	low moist	None	
0.5	0.0				0.4-0.5 - rock - large angular pieces - grey in color	dry	None	
					0.5-0.9 - coarse sand & lg rock pieces - brown in color	dry	None	
1.0	0.0				0.9 to 1.4 - sand with various size rock pieces - dark brown	low moist	None	
					1.4 to 2.4 - fine slag with various size rock fragments			
1.5	0.1				↳ black in color	low	None	
2.0	0.0							
				0158	0.0 to 0.4 - gravel - grey in color	dry	None	
0.5	0.0				0.4 to 1.3 - fine slag with various size stones - black	low	None	
					1.3 to 1.6 - coarse sand with med size stone fragments - medium			
1.5	0.1				brown in color	low	None	
					1.6 to 2.3 - fine sand with large stones fragments - brownish			
2.0	0.1				grey	low	None	
2.3	0.1							

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SBS19

Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 12	Time Start/Finish:
Address, City, State	Location ID: SBS 19		Groundwater Depth:

Logged By: MG/GN	Company: Kodiak	Location Description:
Core Depth: 10-15 / Range: 15-20	Operator:	
Core Recovery: 3.5 / 4.1	Rig Type:	
Total Depth of Boring: 20	Drilling Method:	Auger/Tube Size: / PID Used:

Driller

Comments:
SBS 19 - 16.5 Saturated
- Sample depth 16.5 - 18 ft
- Sample time 15:30

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0			0159	0.0-0.1 - fine sand - tan in color	dry	None	
					0.1-1.0 - coarse gravel with fine silt - black in color	mod	None	
1.0	0.0				1.0-2.0 - sandy clay - Med brown in color	Mod	low	
					2.0-3.5 - sandy clay - light brown in color	Mod	Mod	
1.5	0.0							
2.0	0.0							
2.5	0.0							
3.0	0.0							
0.5					0.0-0.8 - fine sandy clay - brown	Mod	Mod	
					0.8-1.4 - clayey sand - very fine sand - light brown	low	low	
1.0					1.4-4.1 - clay with very fine sand - yellowish brown	Mod	Mod	
1.5		SBS-19						
2.0								
2.5								
3.0								
3.5								
4.0								

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Boring Log: Sheet 2 of 2

Project: Beech Bottom	Date: 5/12/14	Boring No. 13	Time Start/Finish:
Address, City, State	Location ID: SS/SBS 2		Groundwater Depth:

Logged By:	Company:	Location Description:
Core Depth Range: 0-5 / 5-10	Operator:	
Core Recovery: 4.9 / 3.7	Rig Type:	
Total Depth of Boring:	Drilling Method:	Auger/Tube Size: / PID Used: MultiRae

Driller

Comments:
SS-2 - 0 to 2 ft - 1555
SBS-2-1 - 3.0-5ft - 1610

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS-2		0160 0161	0.0-0.2 - topsoil - silt with fine rock - brown	low	None	
1.0	0.0				0.2-0.5 - fine gravel with sand; larger rock fragments - gray	dry	None	
1.5	0.0				0.5-1.0 - Sandy loam with silt - intermixed large rock fragments - light brown	dry	None	
2.0	0.0				1.0-1.3 - coarse gravel with silt - gray	low moist	None	
2.5	0.0				1.3-2.3 - coarse sand with silt - light brown/yellow with white specks	mod	low	
3.0	0.0	SBS-2			2.3 to 2.7 - Sandy clay, light brown with white/blue colorations	mod	low	
3.5	0.0				2.7-3.8 - Sandy clay silt - blue with white; gray streaks	mod	low	
4.0	0.0				3.8-4.0 - coarse gravel - black	low	None	
4.5	0.0				4.0-4.9 - coarse sand - black streaking blue color	low	None	
0.5	0.0			0162	0.0-0.6 - med grain sand - blue with black streaking	low	None	
1.0	0.0				0.6-2.8 - coarse clay sand - light tan with white; blue specks in it	mod	low	
1.5	0.0				2.8-3.7 - clay with very fine sand - brown	mod	mod	
2.0	0.0							
2.5	0.0							
3.0	0.0							
3.5	0.0							

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Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/14/14	Boring No. 13	Time Start/Finish:
Address, City, State	Location ID: SBS-2		Groundwater Depth:

Logged By: MG/GD	Driller: Company:	Location Description:	
Core Depth Range: 10-15 / 15-20 / 20-25	Operator:		
Core Recovery: 4.3 / 3.4 / 4.3	Rig Type:		
Total Depth of Boring: 25 ft	Drilling Method:	Auger/Tube Size:	PID Used:

Comments:
SBS-2 - 16.35
Septic - 20-22 ft
Seal 20 ft

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5				0163	0.0-1.2 - clay - brown	low	low	
					1.2-2.3 - clay with fine sand - brown	low	mod	
					2.3-4.3 - sandy clay - brown	mod	mod	
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5				0164	0.0-1.6 - sandy clay - brown	Mod	Mod	
					1.6-3.2 - clayey sand - brown	Mod	Mod	
					3.2-3.3 - sand - brown	low ~~Mod~~	None	
					3.3-3.6 - clay - brown	Mod	Mod	
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	SBS-2		0165	0.0-0.5 - sandy clay - brown	mod	mod	
					0.5-2.6 - sandy clay - brown	high	high	
					2.6-4.3 - sandy clay	high	high	

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Boring Log: Sheet ___ of ___

Project: Beach Bottom	Date: 5/14/14	Boring No. 14	Time Start/Finish:
Address, City, State	Location ID: SS / SBS 10		Groundwater Depth:

Logged By: MW/GN	Driller — Company: Kodiak	Location Description:	
Core Depth: 0-5 / Range: 5-10	Operator: Jason		
Core Recovery: 5ft / 5.	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Comments:
SS-10 - 16.50 - 0-4 ~~7.7 to 9.7~~
SBS 10 - 1700 - depth ~~7.7 to 9.7~~ 6.7 to 7.7

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5, 10, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5		← SS-10 →		0164	0.0-0.2 - silt with rock; woody debris - dark brown	low	None	
					0.2-0.4 - gravel with silts; fine sand gray	low	None	
					0.4-0.7 - silty sand - little small rock fragments - light tan with black streaks in color	mod	None	
					0.7-1.5 - coarse sand with silt - blue in color	low	None	
					1.5-5.0 - coarse sand with silt - blue with white streaks	low	None	
0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5		← SBS-10 →		0167	0.0-0.4 - coarse sand with silts - blue with white specks	low	None	
					0.4-2.0 - coarse sand; stone with various size rock fragments - light tan in color with blue streaks	high	None	
					2.0-4.8 - coarse sand with silt - blue in color with white specks	mod	None	
					4.8-5.0 - coarse sand with silts - light tan in color with blue specks	low	None	

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Boring Log: Sheet __ of ___

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-20		Groundwater Depth:

Logged By: MG/GN	Driller: Company: Kodiak	Location Description:	
Core Depth Range: 0-4	Operator: Jason		
Core Recovery: 2.5	Rig Type: Geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Comments:
SS-20 - (0-2ft) - 0835
SS-20-A - (0-2ft) - 0840 - duplicate
SBS-20 (2.5-2.5ft) - 0845

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS20		0168	0.0-0.4 - gravel - medium sized - dark grey	low	None	
					0.4-0.6 - sand - light brown	low	None	
					0.6-1.0 - fine slag - silty - black	low	None	
1.0	0.0				1.0-1.4 - coarse slag - small angular rock fragments; silts - black with brown streaks	low	None	
1.5	0.0				1.4-1.6 - silty clay - red brown	low	low	
					1.6-2.0 - med grain sand - reddish brown	low	None	
2.0	0.0	SS20			2.0-2.3 - coarse slag - black on outside - light brown in center of core	low	None	
2.5					2.3-2.4 - coarse gravel - black	low	None	
					2.4-2.5 - coarse sand - light brown with black specks	low	None	

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Boring Log: Sheet 1 of 1

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS 21		Groundwater Depth:

Logged By: MG/GN	Driller: Company: Kodiak	Location Description:	
Core Depth Range: 0-4	Operator: Jason		
Core Recovery: 2.6	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25	PID Used: Multi Rae

Comments:

SS-21-(MSMSD sample) - 0 to 2ft depth - 0910

SBS-21 - (2.0 to 2.5 ft depth) - 0915

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS21		0169	0.0 to 0.8 - fine slag - silt with small rock fragments dark grey in color top 1.5 inches wetter due to rain	low	None	
1.0	0.0				0.8 to 2.0 - coarse slag with larger rock fragments and small patches of sandy silt mixed in - black in color with brown patches	low	None	
1.5	0.0				2.0 to 2.5 - coarse sand with silts and clay mixed in	Med	None	
2.0	0.0	SBS21						
2.5	0.0							

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Boring Log: Sheet 1 of 1

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS / SS-11		Groundwater Depth:
Logged By: MG / GN	Company: Kodiak		Location Description:
Core Depth: 0.5 / Range: 5-10	Operator: Jason		
Core Recovery: 1.4 ft / 1.3	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25	PID Used: Mini Rae

Driller

Comments:

SS-11-0935-0-1.4 ft

SS-11A-0940-0-1.4 ft

SBSH-0950-5-6.3ft

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS11		0171	0.0-0.3 - gravel - various sized stones with fine silts - brownish gray - top 1.5 inches wetter than rest of layer due to raining weather	Low	None	
1.0	0.0	SSHA			0.3-0.4 - fine silts - black in color	Low	None	
1.5					0.4-1.4 - fine gravel - dark brown in color with spots that appear like a pyrite type material	Low	None	
0.0	0.0	SBS-11		0170	0.0-0.2 - coarse gravel with varying size stone fragments black in color	Mod	None	
0.5	0.0				0.2-0.3 - sand with fine silts	Mod	None	
1.0	0.0				0.3-0.4 - sand with large ~~stone~~ fragments	Mod	None	
1.5					0.4-0.6 - sand with med size stone fragments	Mod	None	
					0.6+1.3 - clay with various size stone fragments	Low	Mod	

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Boring Log: Sheet 1 of 1

Project: Beach Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-1		Groundwater Depth:

Logged By: MG / GN	Company: Kodiak	Location Description:	
Core Depth Range: 0-5 / 5-10 / 10-15	Operator: Jason		
Core Recovery: 2.6 / 3.8 / 4.6	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Driller

Comments: SS-1 - 0-1.5 ft - 10:20

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	SS-1			0.0-0.5 - top soil layer - silty clay with medium size rock fragments - brown in color	low	low	
1.0	0.0				0.5-0.6 - coal like rock layer - black	low	None	
1.5	0.0				0.6-1.4 - silty sand - with varying size rock fragments - light brown with black shading on outside; yellow; orange/brown patches	low	None	
2.0	0.0				1.4-1.6 - silty fine sand with small rock fragments - brown	low	None	
2.5	0.0				1.6-2.6 - clay - brown	low	Low	
0.5	0.1			0172	0.0-3.8 - clay - brown	low	low	
1.0	0.1							
1.5	0.0							
2.0	0.0							
2.5	0.1							
3.0	0.1							
3.5	0.1							
0.5	0.1			0173	0.0-1.9 - clay - brown	low	low	
1.0	0.1				1.9-2.4 - clay with fine silt - brown	mod	Mod	
1.5	0.1				2.4-3.6 - clay - brown	low	low	
2.0	0.0				3.6-4.1 - clay with fine silt - brown	mod	high	
2.5	0.1				4.1-4.6 - clay - brown	low	low	
3.0	0.0							
3.5	0.1							
4.0	0.1							
4.5	0.1							

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Boring Log: Sheet 1 of 2

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Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-1		Groundwater Depth:

Logged By: MG/GN	Company:	Location Description:
Core Depth Range: 15-20 / 20-25	Operator:	
Core Recovery: 4.1 / 3.5	Rig Type:	
Total Depth of Boring: 25	Drilling Method:	Auger/Tube Size: 1.25 ID / PID Used: Multi Rae

Driller

Comments: SBS-1-(MSMSD)-1100 - 19-23 depth

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
					0.0-1.1 - clay - brown	Low	Low	
0.5	0.0				1.1-1.7 - clay with small stones - brown	Mod	Mod	
					1.7-2.7 - clay with small rock fragments - brown	Low	Low	
1.0	0.0				2.7-3.1 - clay with small rock fragments - brown with few black streaks	Low	Mod	
1.5	0.0			0173	3.1-3.5 - saturated - clay with rock fragments - brown	high	high	
					3.5-3.7 - Sand - ~~red~~ - tan	low	None	
2.0	0.0				3.7-3.9 - Sandy clay with rock fragments - brown	high	high	
					3.9-4.0 - clay - brown	high	high	
2.5	0.0				4.0-4.1 - sandy clay with large sand stone chunk	high	high	
3.0	0.0							
3.5	0.0							
4.0	0.0							
					0.0-0.4 - sandy clay with large rock pieces - brown	Mod	high	
0.1	0.0			0173	0.4-2.0 - ~~silty clay~~ clayey silt - brown	High	high	
1.0	0.0	SBS1			2.0-2.5 - sandy clay very fine sand - brown	high	Mod	
					2.5-3.3 - clayey sand - brown	high	High	
1.5	0.0				3.3-3.5 - sand - brown	high	None	
2.0	0.1							
2.5	0.0							
3.0	0.0							

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Boring Log: Sheet 1 of 1

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-8		Groundwater Depth:
Logged By:	Company:	Location Description:	
Core Depth Range: 5-10 / 10-15 / 15-20	Operator:		
Core Recovery: 2.6 / 2.7 / 5.0	Rig Type:		
Total Depth of Boring:	Drilling Method:	Auger/Tube Size:	PID Used:

Driller

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments:	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0			0174	0.0-0.2 - gravel - grey	dry	None	
					0.2-1.2 - coarse sand - light tan in color	low	None	
					1.2-1.3 - coarse gravel - black	dry	None	
1.0	0.0				1.4-2.1 - coarse sand - light tan with white specks	low	None	
					2.1-2.6 - clay with coarse sand particals	Med	high	
1.5	0.0							
2.0	0.0							
2.5	0.0							
0.5	0.0			0175	0.0-0.5 - Clay with small rock fragments - brown with grey mottling spots present in the core	high	high	
1.0	0.0				0.5-1.5 - Clay with scattered small rock fragments - greyish brown with black streaking sparsely present	low	Med	
1.5	0.0				1.5-2.6 - Clay with sandstone pieces - light brown/yellow	low	Med	
2.0	0.0				~~2.6~~			
2.5	0.0							
0.5				0176 0177	0.0-2.0 Clay - small rock fragments - greyish brown	low	Med	
					2.0-5.0 - Clay with very small rock fragments	low	Med	

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Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-7		Groundwater Depth:

Logged By:	Company:	Location Description: tube labeled SBS 8
Core Depth Range: 20-25 / 25-30	Operator:	
Core Recovery: 4.8 / 5.0	Rig Type:	
Total Depth of Boring: 30	Drilling Method:	Auger/Tube Size: / PID Used:

Driller

Comments:
SBS8 - 1230 - depth - 29-30ft
SBS8A 1235 - depth - 29-30ft

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0				0.0-0.1 → gravel at the top of the core - grey	dry	none	
1.0	0.0				0.1-1.3 - clay with black specks - sandy on outside of core	mod	Mod	
1.5	0.0				brown with black specks			
2.0	0.0				1.3-2.3 - clay - brown with grey ribbons of clay type			
2.5	0.0				mottling running up and down inside the core	mod	mod	
3.0	0.0				2.3-4.8 - clay with small ribbons of mottling - light brown	mod	mod	
3.5	0.0							
4.0	0.0							
4.5	0.0							
0.5	0.0				0.0-2.5 - clay - light brown with ribbons of grey mottling			
1.0	0.0				and yellow	Low	mod	
1.5	0.0				2.5-3.0 - clay - sporatic pieces of river gravel - brown	low	mod	
2.0	0.0				3.0-3.8 - clay - brown	Low	mod	
2.5	0.0				3.8-4.5 - clay with fine silt - brown	mod	high	
3.0	0.0				4.5-5.0 - clay with fine silt - brown	high	high	
3.5	0.0	SBS7						
4.0	0.0	SBS7A						
4.5	0.0							

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Boring Log: Sheet 2 of 2

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SS/SBS-8		Groundwater Depth:

Logged By:	Driller	Company: Kodiak	Location Description:
Core Depth Range: 0-5 / 5-10 / 10-15		Operator: Jason	
Core Recovery: .4 ft / 3.3 / 5.0		Rig Type: Geoprobe	
Total Depth of Boring:		Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID / PID Used: Multi Rae

Comments: There was no sample collected due to insufficient recovery

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0				0.0-.15 - gravel - large rock fragments with sandy silts - grey in color	dry	none	
					.15-0.4 - clay with rock fragments - brown	low	mod	
0.5	0.0				0.0-1.0 - clay with 1" sandstone fragments - brown	low	mod	
1.0	0.0				1.0-1.7 clay with med sandstone fragments - brown	low	high	
1.5	0.0				1.7-2.6 clay with various size sandstone fragments - brown	low	mod	
2.0	0.0				2.6-2.8 - coarse sand - orange in color	low	none	
2.5	0.0				2.8-3.3 - clay with med sized sandstone pieces	low	mod	
3.0	0.0							
3.5								
0.5	0.0				0.0-1.0 - clay with black specs - brown with black spots	low	low	
1.0	0.0				1.0-1.5 - clay with sandstone fragments - brown	mod	high	
1.5	0.0				1.5-3.7 - clay with sparse rock fragments - brown	mod	mod	
2.0	0.0				3.7-5.0 - clay with varying size sand stone fragments ↳ light brown - with black spots	mod	mod	
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							
4.5	0.0							
5.0								

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Boring Log: Sheet 1 of 2

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS-8		Groundwater Depth:

Logged By: MG/GH	Company: Kodiak	Location Description:	
Core Depth: 15-20 / Range: 20-25	Operator: Jason		
Core Recovery: 2.8 / 3.2	Rig Type: geoprobe		
Total Depth of Boring: 25	Drilling Method: hollow core auger	Auger/Tube Size: 1.25 ID	PID Used: Multi Rae

Driller

Comments:
SDS-8 = 25-27.5 feet depth - MS/MSD except pcbs
1415

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Description	Moisture	Plasticity	Additional Tests/Comments
0.5	0.0				0.0-0.7 → Clay with sand stone fragments - brown with thin black streaks -	Mod	Mod	
1.0	0.0							
1.5	0.0				0.7-1.7 → Clay with small rock fragments and black ~~carbon~~ silty substance down the side	Mod	high	
2.0	0.0							
2.5	0.0				1.7-2.3 → Clay - light brown with greyish tint	Mod	high	
3.0					2.3-2.5 → coarse sand ; clay with large sandstone pieces → light brown/orange	Low	None	
					2.5-2.8 → Clay - light brown	Low	Mod	
0.5	0.0			0178	0.0-1.4 → Clay with small rock fragments - light brown ↳ saturated	high	high	
1.0	0.0							
1.5	0.0	SDS-8			1.4-2.2 → Clay with small : medium size stones - light tan	high	high	
2.0	0.0				2.2-3.2 → Clay → greyish brown →	Low	Mod	
2.5	0.0							
3.0	0.0							
3.5								

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Boring Log: Sheet 2 of 2

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SS/SBS-18		Groundwater Depth:
Logged By: MO/GN	Company:	Location Description:	
Core Depth Range: 0-5 / 5-10 / 10-15	Operator:		
Core Recovery: 1.0 / 1.7 / 1.9	Rig Type:		
Total Depth of Boring:	Drilling Method:	Auger/Tube Size:	PID Used:

Driller

Comments: SS-18 - 0 to 1 ft - 1500

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5, 1.0		SS-18		0179	0.0-0.9 → fine sand with large rock pieces - light brown (tan)	dry	None	
					0.3-0.5 → fine slag silt - dark brown	dry	None	
					0.5-0.6 - fine slag : silt with large rock pieces - brown	dry	None	
					0.6-0.9 - fine sand with few pebbles	dry	None	
					0.9-1.0 - med-coarse sand with large rock fragments - light brown / white	dry	None	
0.5, 1.0, 1.5, 2.0	0.0, 0.0, 0.0			0179	0.0-0.1 - coarse gravel - grey	dry	None	
					0.1-0.6 - silt with pebbles - brown	low	Low	
					0.6-1.1 - fine sand - light brown	low	None	
					1.1-1.2 - fine silt with small rocks - red/brown	low	None	
					1.2-1.4 - fine sand with pebbles - light brown	low	None	
					1.4-1.7 - clay with small rock fragments	med	Med.	
0.5, 1.0, 1.5, 2.0				0180	0.0-0.1 → fine sand with rock fragments - brown with white specks →	med	Low	
					0.1-0.4 → clay with rock fragments	low	Low	
					0.4-1.4 → fine sand with clay - light brown	low	None	
					1.4-1.6 → very fine sand with clay → light brown	med	None	
					1.6-1.9 → coarse sand with rock fragments → reddish brown	med	None	

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Boring Log: Sheet __ of ___

Project: Beech Bottom	Date: 5/6/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SS/SBS-18		Groundwater Depth:
Logged By:	Company:	Location Description:	
Core Depth Range: 15-20 / 20-25 / 25-30	Operator:		
Core Recovery: 4.5 / 5.0 / 5.0	Rig Type:		
Total Depth of Boring:	Drilling Method:	Auger/Tube Size:	PID Used:

Driller

Comments:
15-20' - No sleeve on recovery
SBS-18 27-29 ft: 1540
SBS-18A 27-29 ft: 1545

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Description	Moisture	Plasticity	Additional Tests/Comments
0.5	0				0.0-0.8 → Clay with black spots - dark grey/brown with black spots	low	low	
1.0					0.8 - 3.0 - clay ~~with black~~ - greenish brown	low	low	
1.5					3.0 - 3.5 - clay - brown	low	med	
2.0					3.5 - 4.5 - clay - light brown	low	low	
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
0.5	0.0				0.0 - 0.1 - clay with stone fragments - light brown	low	none	
1.0	0.0				0.1 - 1.1 - silty clay - light brow	low	none	
1.5	0.0				1.1 - 1.5 - clay - light brown	low	med	
2.0	0.0				1.5 - 2.0 - clay - light brown	low	med	
2.5	0.0				2.0 - 3.5 - silty clay light brown	med	med	
3.0	0.0				3.5 - 5.0 - silty clay - light brown with black specks	med	high	
3.5	0.0							
4.0	0.0							
4.5	0.0							
5.0	0.0							
0.5	0.0				0.0 - 1.9 - silty clay - light brown	high	~~high~~ med	
1.0	0.0				1.9 - 4.5 - very fine sandy clay light brown	sat	high	
1.5	0.0				4.5 - 5.0 - silty clay - light brown	high	med	
2.0	0.0	SBS-18A						
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							
4.5	0.0							
5.0								

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Boring Log: Sheet 2 of 2

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SB59		Groundwater Depth:

Logged By: MG/GN	Company: Kodiak	Location Description:	
Core Depth Range: 0-5 / 5-10 / 10-15	Operator: Jason		
Core Recovery: 2.7 / 1.7 / 3.1	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: hollow core Auger	Auger/Tube Size: 1.25ID	PID Used: Multi Rae

Driller

Comments: SS-9 - 0-8.5ft depth - time - 1640 - VOC, SVOC/TM, PCBS

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)		Moisture	Plasticity	Additional Tests/Comments
0.5	0.0	1			0.0-0.4 → gravel & fine silt - appears to be crushed concrete - light tan/whitish color	dry	None	
1.0	0.0	SS9			0.4-1.6 - fine sand with small rock fragments	dry	None	
1.5	0.0	1			1.6-2.7 - coarse sand with small rock fragments	dry	None	
2.0	0.0				↳ yellowish white color with dark specks			
2.5	0.0							
3.0								
0.5	0.0				0.0-0.6 - fine sand with small rock fragments ↳ yellowish/white in color with dark specks	dry	None	
1.0	0.0				0.6-0.7 → coarse sand: small stones - brown	Low	None	
1.5	0.0				0.7-1.2 - clay with small rock fragments - brown	low	Low	
2.0					1.2-1.4 - sand stone pieces with clay - yellowish brown	low	None	
					1.4-1.7 - clay with small ~~rock~~ fragments - brown	low	low	
0.5	0.0				0.0-0.4 - sandstone fragments: silt - brown	low	None	
1.0	0.0				0.4-0.9 - ~~clay~~ - clay - with various sizerock frags - brown	low	Mod	
1.5	0.0				0.9-1.1 - sandstone fragments with clay brown	low	None	
2.0	0.0				1.1-2.1 - clay with rock fragments of various sizes - light brown	~~Moderate~~	Mod	
2.5	0.0				2.1-2.2 - clay with fine stone frags - light brown	mod	high	
3.0	0.0				2.2-3.1 - clay with stone frags - brown	low	Mod	

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Boring Log: Sheet ___ of ___

Project: Beech Bottom	Date: 5/15/14	Boring No.	Time Start/Finish:
Address, City, State	Location ID: SBS9		Groundwater Depth:

Logged By: MG/GM	Company: Kodiak	Location Description:	
Core Depth Range: 15-20 / 20-25 / 25-30	Operator: Jason		
Core Recovery: 4.5 / 5.0 / 3.7	Rig Type: geoprobe		
Total Depth of Boring:	Drilling Method: Hollowstem Auger	Auger/Tube Size: 1.25	PID Used: Multi Rae

Driller

Comments:
SBS-9 - depth 25.4 - 27.0 time 17:10
VOC SVOC/TM : PCBs

Depth (feet)	PID Reading	Sample Number	Sample Type	Graphic Log (Picture Number)	Comments	Moisture	Plasticity	Additional Tests/Comments
0.5					0.0-0.6 - clay with various size sandstone pieces - brown with orange rock fragments	low	Mod	
1.0					0.6-1.5 > clay with fine rock fragments - brown with a few black streaks	low	Mod	
1.5					1.5-2.3 - clay with sandstone pieces of various sizes - black spots - brown with black spots ; tan stones	mod	mod	
2.0					2.3-3.2 - clay with black silty spots ; stone fragments	mod	Mod	
2.5					3.2-3.5 - ~~silty~~ clayey silt with fine stone frags light brown	mod	high	
3.0					3.5-4.5 - clay with black spots - brown with black spots	low	mod	
3.5								
4.0								
4.5								
5.0								
0.5	0.0				0.0-1.3 > clay - brown	low	Low	
1.0	0.0				1.3-1.5 > clay with rock frags - brown	low	low	
1.5	0.0				1.5-4.5 > clay - brown	low	low	
2.0	0.0				4.5-5.0 - clay with coal fragments	mod	Mod	
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0	0.0							
4.5	0.0							
5.0								
0.5	0.0				0.0-0.4 - clay with rock frags - brown	high	high	
1.0	0.0				0.4-2.4 - clay with fine silt - grayish brown	sat	high	
1.5	0.0				2.4-3.3 - clay - grayish brown green tint	Mod	~~Mod~~	
2.0	0.0				3.3-3.7 - clay - grayish brown - olive tints	low	Low	
2.5	0.0							
3.0	0.0							
3.5	0.0							
4.0								

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Boring Log: Sheet __ of ___

Appendix K
Sample Location Tables

Table K1 - GPS Coordinates of Samples

Sample Location	Latitude	Longitude	Northing	Easting	Coordinate System	Geo Method
BH-1	40.21268353	-80.66041106	625920.727	1644418.77	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-2	40.21407515	-80.65959979	626424.72	1644651.872	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-3	40.215862	-80.65921084	627074.209	1644768.891	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-4	40.21677887	-80.65871756	627406.42	1644910.949	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-5	40.21753298	-80.65879084	627681.379	1644894.03	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-6	40.21564326	-80.65822932	626990.996	1645041.958	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-7	40.216609	-80.656746	627337.445	1645460.711	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
BH-8	40.216161	-80.656751	627174.271	1645457.213	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
BH-9	40.214835	-80.657371	626693.483	1645277.853	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
BH-10	40.21322077	-80.6601019	626115.311	1644507.635	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-11	40.21291121	-80.659046	625998.742	1644801.056	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-12	40.21639245	-80.65838102	627264.446	1645003.114	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-13	40.21779618	-80.65722995	627771.637	1645331.137	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-14	40.2171039	-80.65750664	627520.457	1645250.623	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-15	40.21735254	-80.65663193	627607.881	1645496.053	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-16	40.21696675	-80.65898564	627475.821	1644836.97	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-17	40.21466037	-80.65594046	626624.727	1645676.524	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
BH-18	40.214487	-80.658481	626570.714	1644966.242	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
BH-19	40.21511905	-80.65920272	626803.547	1644767.666	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-20	40.21638431	-80.65628246	627253.932	1645589.101	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
BH-21	40.21412361	-80.65802765	626436.71	1645091.138	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-22	40.21371055	-80.65973075	626292.382	1644613.586	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-23	40.21383863	-80.65968489	626338.871	1644626.995	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-25	40.21541563	-80.65848602	626909	1644969.203	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-26	40.21530854	-80.65896964	626871.734	1644833.646	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-27	40.21697193	-80.65886887	627477.29	1644869.602	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-28	40.21666319	-80.65805839	627361.905	1645094.479	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-29	40.21715855	-80.65842203	627543.658	1644995.259	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SS-30	40.21732895	-80.65710382	627600.986	1645364.167	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
MW-1	40.21296133	-80.66088244	626023.622	1644288.437	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-2	40.21487275	-80.66008766	626717.019	1644519.383	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-3	40.21632403	-80.65934051	627242.979	1644734.853	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-4	40.21747754	-80.65571221	627650.111	1645753.468	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-5	40.21512426	-80.65701846	626797.582	1645377.661	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-6	40.21332454	-80.65872109	626148.133	1644893.732	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-7	40.21382224	-80.65973176	626333.071	1644613.83	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-8	40.21558366	-80.65833956	626969.68	1645010.891	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
MW-9	40.21466037	-80.65594046	626624.727	1645676.524	State Plane, NAD 1983, West Virgnia North, Feet	Surveyor
PW-1	40.229342	-80.656326	631974.161	1645637.7	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
SD-1	40.2130627	-80.66119509	626061.674	1644201.602	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SD-2	40.21627864	-80.65957624	627227.294	1644668.81	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SD-3	40.21777978	-80.65878486	627771.258	1644896.858	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SD-4	40.21488106	-80.65570398	626704.267	1645743.597	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SW-1	40.21627864	-80.65957624	627227.294	1644668.81	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SW-2	40.21777978	-80.65878486	627771.258	1644896.858	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
SW-3	40.21488106	-80.65570398	626704.267	1645743.597	State Plane, NAD 1983, West Virgnia North, Feet	GPS Trimble.
W-1	40.216219	-80.657448	627197.906	1645262.846	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
W-2	40.216161	-80.656751	627174.271	1645457.213	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
W-3	40.214462	-80.658456	626561.517	1644973.106	State Plane, NAD 1983, West Virgnia North, Feet	Google Map
W-4	40.215498	-80.65811	626937.652	1645074.595	State Plane, NAD 1983, West Virgnia North, Feet	Google Map

Table K2 - Sample ID and Locations

Sample ID #	Sample Date	Location	Matrix	Sample Type
MW-1	5/20/2014	MW-1	Ground Water	Field Sample
MW-2	5/20/2014	MW-2	Ground Water	Field Sample
MW-3	5/20/2014	MW-3	Ground Water	Field Sample
MW-3-A	5/20/2014	MW-3	Ground Water	Field Duplicate of MW-3
MW-4	5/19/2014	MW-4	Ground Water	Field Sample
MW-6	5/20/2014	MW-6	Ground Water	Field Sample
MW-7	5/21/2014	MW-7	Ground Water	Field Sample
MW-8	5/21/2014	MW-8	Ground Water	Field Sample
MW-9	5/19/2014	MW-9	Ground Water	Field Sample
PW-1	5/21/2014	PW-1	Ground Water	Field Sample
SBS-1	5/15/2014	BH-1	Subsurface Soil	Field Sample
SBS-2-1	5/14/2014	BH-2	Subsurface Soil	Field Sample
SBS-2-2	5/14/2014	BH-2	Subsurface Soil	Field Sample
SBS-3	5/14/2014	BH-3	Subsurface Soil	Field Sample
SBS-4-1	5/14/2014	BH-4	Subsurface Soil	Field Sample
SBS-4-2	5/14/2014	BH-4	Subsurface Soil	Field Sample
SBS-5	5/6/2014	BH-5	Subsurface Soil	Field Sample
SBS-6	5/14/2014	BH-6	Subsurface Soil	Field Sample
SBS-7	5/15/2014	BH-7	Subsurface Soil	Field Sample
SBS-7A	5/15/2014	BH-7	Subsurface Soil	Field Duplicate of SBS-7
SBS-8	5/15/2014	BH-8	Subsurface Soil	Field Sample
SBS-9	5/15/2014	BH-9	Subsurface Soil	Field Sample
SBS-10	5/14/2014	BH-10	Subsurface Soil	Field Sample
SBS-11	5/15/2014	BH-11	Subsurface Soil	Field Sample
SBS-12	5/14/2014	BH-12	Subsurface Soil	Field Sample
SBS-12-A	5/14/2014	BH-12	Subsurface Soil	Field Duplicate of SBS-12
SBS-13	5/14/2014	BH-13	Subsurface Soil	Field Sample
SBS-14	5/14/2014	BH-14	Subsurface Soil	Field Sample
SBS-15	5/14/2014	BH-15	Subsurface Soil	Field Sample
SBS-16-1	5/14/2014	BH-16	Subsurface Soil	Field Sample
SBS-16-2	5/14/2014	BH-16	Subsurface Soil	Field Sample
SBS-17	5/5/2014	BH-17	Subsurface Soil	Field Sample
SBS-18	5/15/2014	BH-18	Subsurface Soil	Field Sample
SBS-18-A	5/15/2014	BH-18	Subsurface Soil	Field Duplicate of SBS-18
SBS-19	5/14/2014	BH-19	Subsurface Soil	Field Sample
SBS-20	5/15/2014	BH-20	Subsurface Soil	Field Sample
SBS-21	5/15/2014	BH-21	Subsurface Soil	Field Sample
SD-1	5/6/2014	SD-1	Sediment	Field Sample
SD-1A	5/6/2014	SD-1	Sediment	Field Duplicate of SD-1
SD-2	5/6/2014	SD-2	Sediment	Field Sample
SD-3	5/6/2014	SD-3	Sediment	Field Sample
SD-4	5/7/2014	SD-4	Sediment	Field Sample
SS-1	5/15/2014	BH-1	Surface Soil	Field Sample
SS-2	5/14/2014	BH-2	Surface Soil	Field Sample
SS-3	5/14/2014	BH-3	Surface Soil	Field Sample

Table K2 - Sample ID and Locations

Sample ID #	Sample Date	Location	Matrix	Sample Type
SS-4	5/14/2014	BH-4	Surface Soil	Field Sample
SS-5	5/6/2014	BH-5	Surface Soil	Field Sample
SS-6	5/14/2014	BH-6	Surface Soil	Field Sample
SS-6-A	5/14/2014	BH-6	Surface Soil	Field Duplicate of SS-6
SS-7	5/6/2014	BH-7	Surface Soil	Field Sample
SS-9	5/15/2014	BH-9	Surface Soil	Field Sample
SS-10	5/14/2014	BH-10	Surface Soil	Field Sample
SS-11	5/15/2014	BH-11	Surface Soil	Field Sample
SS-11-A	5/15/2014	BH-11	Surface Soil	Field Duplicate of SS-11
SS-12	5/14/2014	BH-12	Surface Soil	Field Sample
SS-13	5/14/2014	BH-13	Surface Soil	Field Sample
SS-14	5/14/2014	BH-14	Surface Soil	Field Sample
SS-16	5/14/2014	BH-16	Surface Soil	Field Sample
SS-17	5/5/2014	BH-17	Surface Soil	Field Sample
SS-18	5/15/2014	BH-18	Surface Soil	Field Sample
SS-19	5/14/2014	BH-19	Surface Soil	Field Sample
SS-20	5/15/2014	BH-20	Surface Soil	Field Sample
SS-20-A	5/15/2014	BH-20	Surface Soil	Field Duplicate of SS-20
SS-21	5/15/2014	BH-21	Surface Soil	Field Sample
SS-22	5/5/2014	SS-22	Surface Soil	Field Sample
SS-23	5/7/2014	SS-23	Surface Soil	Field Sample
SS-25	5/5/2014	SS-25	Surface Soil	Field Sample
SS-25	5/5/2014	SS-25	Surface Soil	Field Sample
SS-27	5/7/2014	SS-27	Surface Soil	Field Sample
SS-28	5/7/2014	SS-28	Surface Soil	Field Sample
SS-29	5/7/2014	SS-29	Surface Soil	Field Sample
SS-30	5/7/2014	SS-30	Surface Soil	Field Sample
SW-1	5/6/2014	SW-1	Surface Water	Field Sample
SW-1A	5/6/2014	SW-1	Surface Water	Field Duplicate of SW-1
SW-2	5/6/2014	SW-2	Surface Water	Field Sample
SW-3	5/7/2014	SW-3	Surface Water	Field Sample
W-1	5/7/2014	W-1	Waste	Field Sample
W-2	5/7/2014	W-2	Waste	Field Sample
W-3	5/7/2014	W-3	Waste	Field Sample
W-4	5/7/2014	W-4	Waste	Field Sample