

POTOMAC YARD METRORAIL STATION ENVIRONMENTAL IMPACT STATEMENT



DRAFT

Phase II Environmental Site Assessment

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TABLE OF CONTENTS

1.0	INTRODUCTION.....	1-1
1.1	PREFERRED ALTERNATIVE LOCATION AND THE PHASE II ESA STUDY AREA.....	1-1
2.0	SITE SETTING	2-1
2.1	SURROUNDING LAND USE.....	2-1
2.2	SURFACE WATERS AND HYDROLOGY	2-1
2.3	GEOLOGY AND SOILS.....	2-1
3.0	SUMMARY OF PHASE I ESA FINDINGS OF RECS AT THE PREFERRED ALTERNATIVE ...	3-1
3.1	BALLAST.....	3-1
3.2	FORMER OIL/WATER SEPARATOR PONDS	3-1
3.3	FORMER DREDGE SPOILS AREA.....	3-2
3.4	FORMER FLY ASH DEPOSITION AREAS.....	3-2
3.5	POTENTIAL CONSTRUCTION DEBRIS LANDFILL.....	3-2
3.6	CONTAMINATED GROUNDWATER.....	3-2
3.7	CONTAMINATED SOIL.....	3-2
4.0	SUMMARY OF THE PHASE II ESA FINDINGS.....	4-1
4.1	SUMMARY OF PHASE II ESA METHODOLOGY AND SAMPLING	4-1
4.2	SUMMARY OF PHASE II ESA FINDINGS.....	4-2
5.0	POTENTIAL IMPACTS TO THE PREFERRED PYMS BASED ON PHASE II ESA FINDINGS.	5-1
5.1	CONTAMINATED FILL MATERIAL AND SOIL EXCAVATION AND DISPOSAL	5-1
5.2	CONTAMINATED GROUNDWATER DEWATERING	5-1
5.3	MITIGATION OF POTENTIAL IMPACTS	5-1
6.0	QUALIFICATIONS – LIST OF PREPARERS	6-1
6.1	BRENDAN MCGUINNESS – SENIOR ENVIRONMENTAL SCIENTIST, AECOM, INC.....	6-1
7.0	REFERENCES	7-1

LIST OF FIGURES

Figure 1-1: Preferred Alternative Recognized Environmental Condition Sites (RECs) and Phase II Boring Locations	1-2
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LIST OF TABLES

Table 4-1: Phase II ESA Detected Analytes.....	4-3
Table 4-2: Phase II ESA Metal Results Compared to the Toxicity Characteristic Regulatory Level	4-5

LIST OF APPENDICES

APPENDIX A: LIST OF ACRONYMS AND ABBREVIATIONS

APPENDIX B: LABORATORY ANALYSIS REPORT

APPENDIX C: PHOTOGRAPHS OF FIELD WORK

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1.0 INTRODUCTION

The Federal Transit Administration (FTA), as the lead federal agency, and the City of Alexandria, as the project sponsor and joint lead agency, are preparing a Final Environmental Impact Statement (Final EIS) in accordance with the National Environmental Policy Act (NEPA) for the proposed Potomac Yard Metrorail Station (PYMS). The Final EIS is being prepared in cooperation with the Washington Metropolitan Area Transit Authority (WMATA) and the National Park Service (NPS).

This document is a Phase II Environmental Site Assessment (ESA) of Recognized Environmental Concerns (RECs) which were previously identified in a Phase I ESA to support findings in the Draft EIS. As described in the Phase I ESA, the potential impacts of the Preferred Alternative on RECs would occur during construction activities. Therefore, the Phase II ESA focused on the limits of soil disturbance predicted during construction of the Preferred Alternative and was primarily limited to the depth of likely associated soil disturbance. At the conclusion of construction for the Preferred Alternative, the site would be returned to its current condition or better, as discussed in Section 3.25 of the FEIS. All work has been completed pursuant to American Society of Testing and Materials (ASTM) *E1903 - 11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.

This Phase II ESA was conducted as part of the Final EIS to assess the nature of potential contamination at the RECs at the site of the Preferred Alternative. The Phase II ESA comprised installation of soil borings and collection of soil samples for laboratory analysis of potential contaminants of concern. A discussion of the Phase II ESA methodology, findings, and potential impacts to the construction of the Potomac Yard Metrorail Station project is provided.

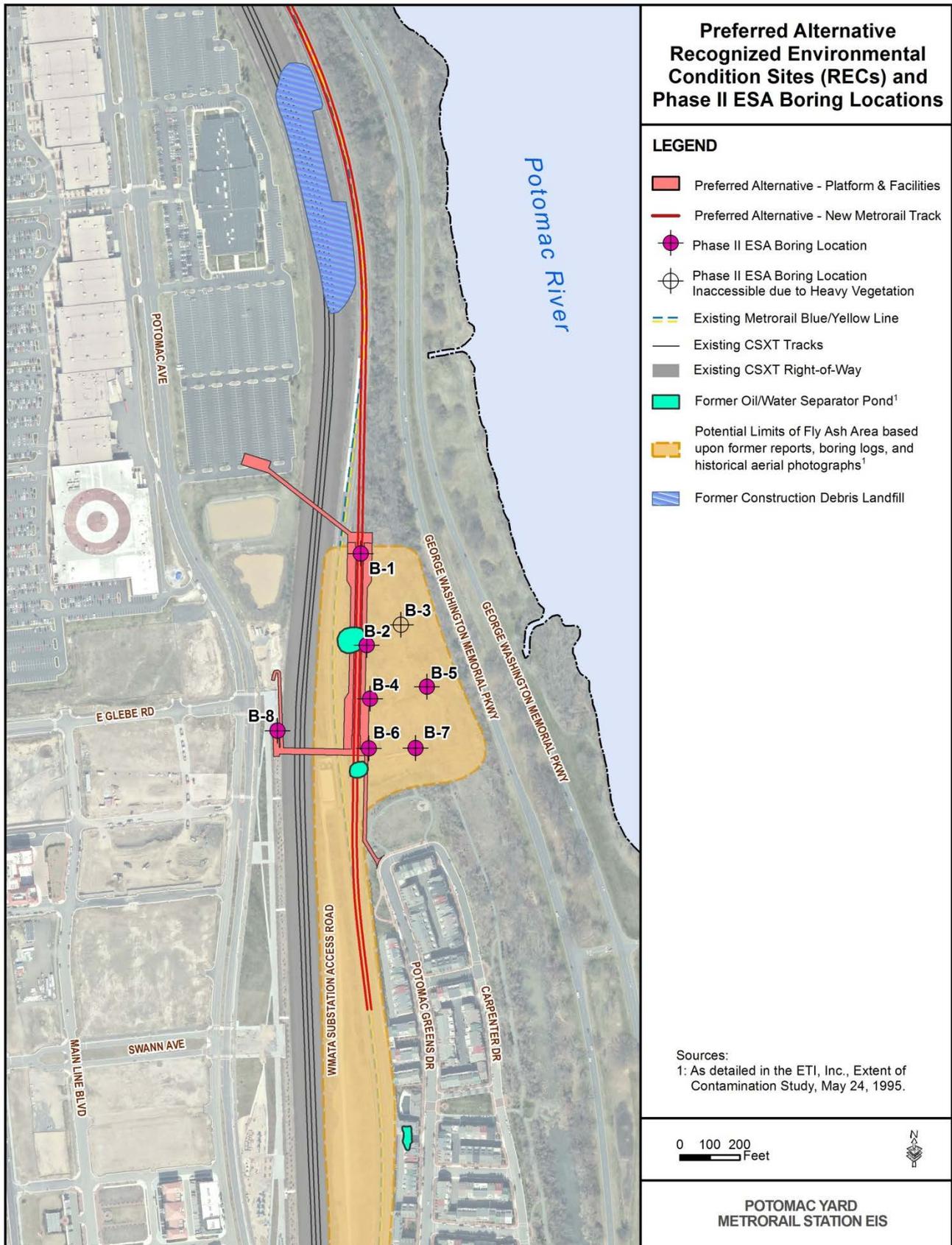
The Phase II ESA report is organized as follows:

- Section 1 provides a description of the Preferred Alternative and Phase II ESA study area;
- Section 2 summarizes the Phase I ESA findings and RECs at the Preferred Alternative site;
- Section 3 provides the findings of Phase II ESA at the Preferred Alternative site;
- Section 4 describes potential impacts of the Preferred Alternative based on Phase II ESA findings;
- Section 5 provides the qualifications of the authors;
- Section 6 lists preparers for the Phase II ESA; and
- Section 7 lists technical references.

1.1 Preferred Alternative Location and the Phase II ESA Study Area

The Preferred Alternative is located along and just east of the existing WMATA Metrorail Blue and Yellow Lines, west of the George Washington Memorial Parkway, and north of the Potomac Greens neighborhood in Potomac Greens Park within the City of Alexandria. **Figure 1-1** on the following page illustrates the Preferred Alternative and the Phase II ESA Study Area, which includes areas identified with RECs within and adjacent to the limits of disturbance and construction for the project. The figure also shows the boring locations where sampling was conducted.

Figure 1-1: Preferred Alternative Recognized Environmental Condition Sites (RECs) and Phase II Boring Locations



2.0 SITE SETTING

2.1 Surrounding Land Use

The surrounding land use to the west and south is a densely populated area, which continues to be developed for residential and commercial uses. A new plan for the redevelopment of the Potomac Yard Shopping Center (formerly within the Potomac Yard railroad yard) was adopted by the City of Alexandria in 2010. The new redevelopment is planned to contain 7.5 million square feet of office, retail, and residential development, as well as open space (<http://alexandriava.gov/PotomacYard>).

To the east and north of the project site are parkland and open space associated with the George Washington Memorial Parkway.

2.2 Surface Waters and Hydrology

Drainage patterns in the vicinity of the Preferred Alternative are controlled principally by topographic relief and urbanization. In urban settings, such as Potomac Yard, storm water is managed predominantly in subsurface pipes and drainage ponds. Drainage from the Potomac Yard area of the site west of the CSXT railroad tracks generally flows to Four Mile Run (to the north of the project site), which in turn discharges to the Potomac River, and drainage from the project site east of the CSXT railroad tracks generally flows directly to the Potomac River. The Potomac River flows south and discharges to the Chesapeake Bay.

Previous studies at the site have shown that shallow groundwater occurs at the former Potomac Yard rail yard site under an unconfined water table and perched water table conditions. The unconfined water table occurs at depths ranging from approximately 10 feet to 25 feet below ground surface (bgs). The perched water table is localized and may be seasonal in nature. The perched groundwater was encountered at depths of four to six feet bgs. The water table groundwater elevations in monitoring wells measured during the previous Extent of Contamination Study (ECS, 1995) generally ranged from about five feet to 33 feet mean sea level (msl)

2.3 Geology and Soils

The site is located near the western edge of the Coastal Plain physiographic province. The “Fall Line”, located less than 5 miles west of the study area, marks the boundary between the Coastal Plain and the Piedmont physiographic provinces. The Coastal Plain is an eastward-thickening wedge of sedimentary deposits overlying igneous and metamorphic bedrock. The bedrock dips eastward from the Piedmont at approximately 125 feet per mile. The Coastal Plain sediments consist of clays, silts, sands, and gravels deposited in river and marine environments.

The sedimentary deposits of the Coastal Plain in the vicinity of the study area are the Potomac Group of Cretaceous age. The Potomac Group is subdivided into three formations. In ascending order, these are the Patuxent Formation (Patuxent), the Arundel Clay Formation (Arundel), and the Patapsco Formation (Patapsco). Overlying the Potomac Group are river terrace and alluvial deposits of Quaternary age identified as the Shirley Formation and fill material.

The geology of the site was delineated from ground surface to the bedrock during previous environmental and geotechnical investigations. The stratigraphic sequence of the study area consists of six units. In descending order, these units include: fill material (ballast-cinder, fly-ash, silt and clay), Shirley Formation, Patapsco Formation, Arundel Clay Formation, Patuxent Formation, and bedrock.

3.0 SUMMARY OF PHASE I ESA FINDINGS OF RECS AT THE PREFERRED ALTERNATIVE

The Potomac Yard is a former rail yard, which was operated by the Richmond Fredericksburg and Potomac (RF&P) railroad from approximately 1906 to 1990. Historic operations at the Site were characterized in the Phase I ESA by reports obtained from the United States Environmental Protection Agency (USEPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Administrative Record, the Virginia Department of Environmental Quality (VDEQ), and the City of Alexandria Office of Environmental Quality.

The Preferred Alternative is located within the northern portion of the former Potomac Greens Sub-Area of the Potomac Yard rail yard. At the time of rail yard site operations, the former Potomac Greens Sub-Area consisted of approximately 38 acres located to the east of the Metrorail Blue/Yellow Line and west of the George Washington Memorial Parkway. At that time, the area occupied the lowest elevation of Potomac Yard. The area was not used for rail operations. However, former oil/water separator ponds, a fly ash deposition area, and dredge spoils were located in this area. These RECs within the Preferred Alternative site have been remediated or mitigated by risk management methods during previous EPA, VDEQ, and City of Alexandria oversight of historic remedial activities and during more recent redevelopment activities. Risk management methods of contaminants encountered during redevelopment and remedial activities have included measures such as removal of the oil/water separator ponds and dredge spoils and capping impacted soils in place.

The RECs described below were identified as having the potential for residual contamination at the Preferred Alternative site and were investigated during the Phase II ESA. **Figure 1-1** shows the locations of RECs and the location of the Phase II study area and soil borings..

3.1 Ballast

Based upon multiple environmental assessment reports completed for the former Potomac Yard rail yard site, much of the shallow fill used to level the rail yard appears to have been cinder ballast. The fill material adjacent to and underneath the existing track likely contains ballast. Much of the ballast material at the former Potomac Yard has been removed from areas no longer occupied by track. However, ballast can still be sporadically encountered in previously undisturbed areas or at undisturbed depths. Previous analysis at Potomac Yard indicates that ballast can contain significant concentrations of metals, including arsenic, lead, and copper.

3.2 Former Oil/Water Separator Ponds

Three oil/water separator ponds were located in the north, middle, and south portions of Potomac Greens and collected surface water containing grease and spilled fuel oil from refueling and maintenance operations in the Central Operations Area, North Yard, and South Yard Sub-Areas of the former rail yard. These ponds discharged into the Potomac River through drainage channels. During 1977 and 1978, the three oil/water separator ponds were moved from their original locations to clear a path for the Metrorail Yellow Line. The original oil/water separator ponds were then filled with soil and fly ash. On the downstream side of each pond, wooden baffles served to retain the floating oil and grease in the ponds while allowing water to discharge. Oil and grease were periodically removed and properly disposed off-site (ECS,1995).

After 1990, when locomotive servicing operations were discontinued at the rail yard, the three oil/water separator ponds collected only stormwater runoff from portions of the rail yard and from the City Of Alexandria system (across U.S. Route 1) to the west. During 1993, RF&P removed the three ponds from Potomac Greens. The area of the former southern most separator pond was also further redeveloped during the Potomac Greens construction. Prior to pond removal, RF&P estimated these ponds to be approximately 2,570 square feet (Middle Pond), 3,200 square feet (North Pond), and 3,370 square feet (South Pond) in area and five to eight feet deep.

The water was pumped from each pond and the sediments were solidified with kiln dust and disposed off-site. The soil beneath the ponds was excavated until the concentration of total petroleum hydrocarbons

(TPH) in the underlying soil was less than 100 milligrams per kilogram (mg/kg). The contaminated soil was then properly disposed of offsite. The areas once occupied by the ponds were subsequently refilled under the oversight of VDEQ (Roy F. Weston, 1996). Two of the former oil/water separator ponds are located on or in near proximity to the Preferred Alternative proposed station building location as shown on **Figure 1-1**. The area of the third oil/water separator pond was also subsequently redeveloped during construction of the Potomac Greens townhome development.

3.3 Former Dredge Spoils Area

Dredge spoils from the mouth of Four Mile Run were placed at the Potomac Greens Sub-Area by the U.S. Army Corps of Engineers (USACE) in 1983. USACE constructed a rectangular impoundment located in the south-central portion of Potomac Greens to contain the dredged material. The spoils were deposited within a 10 to 15 foot-high embankment and distributed in a layer that varied from one to 12 feet in thickness. The dredge spoils were removed from the site during the redevelopment of the Potomac Greens Sub-Area.

3.4 Former Fly Ash Deposition Areas

Geotechnical investigations within the Potomac Greens Sub-Area identified a widespread layer of fly ash, five to 20 feet thick, deposited throughout the Sub-Area. The source of this fly ash was reported to be Potomac Electric Power Company (PEPCO). Historical aerial photographs indicate most of this fill was deposited between the mid-1950s and 1963. The fly ash from the disposal area was removed and properly disposed during the redevelopment of the Potomac Greens Sub-Area (ETI, Inc., 1995). The approximate extent of the former fly ash disposal area within the Phase II ESA study area is shown on **Figure 1-1**.

Previous fly ash sample laboratory analysis conducted during site-wide environmental assessments indicate that most samples analyzed for metals had detectable concentrations. The metals arsenic, lead, and copper were detected most frequently. Arsenic was detected at an average concentration of 106 mg/kg, lead was detected at an average concentration of 34 mg/kg, and copper was detected at an average concentration of 70 mg/kg (ETI, Inc., 1995).

Previous risk management methods during site development at Potomac Yard have included risk assessment of arsenic concentrations in soil and fly ash to construction/utility workers during site development. These risk evaluations typically follow Virginia Voluntary Remediation Program (VRP) risk guidance. Previous risk calculations provided in the Preliminary Site-Development Risk Assessment for Potomac Greens (ECS, 2003) of arsenic in fly ash and soil to potential construction/utility workers at Potomac Yard did not indicate an unacceptable risk to these site workers.

3.5 Potential Construction Debris Landfill

The 1995 CERCLA Study identified a construction debris landfill in the area west of the Metrorail tracks near the current site of the movie theater. The construction debris landfill is noted to have been removed to an off-site landfill during redevelopment in 1977. Subsurface debris were encountered during construction of a sewer line for Landbay F (the Potomac Yard Shopping Center) in the former historic "stock pen" area, also located in this portion of the property.

3.6 Contaminated Groundwater

The CERCLA analyses detected contaminants in ground water. The groundwater analyses focused on the metals most commonly associated with ballast: arsenic, copper, and lead. The 1995 CERCLA analysis identified metals and residual petroleum hydrocarbons present in the groundwater at the property.

3.7 Contaminated Soil

The CERCLA analyses detected contaminants in soil. The 1995 CERCLA analysis identified metals and petroleum hydrocarbons present in the soil at the property.

4.0 SUMMARY OF THE PHASE II ESA FINDINGS

The previous Phase I ESA findings found that former RECs within the study area had either been remediated in accordance with USEPA or VDEQ approvals or had been mitigated by risk management methods during subsequent redevelopment. However, the potential for residual contamination at these RECs, especially in undeveloped areas of the study area, was present.

The level of mitigation and/or remediation which could be required in the study area for the Potomac Yard Metrorail Station project is dependent upon the degree of potential residual contamination and how it relates to the construction of the project. Therefore, a Phase II ESA was recommended.

4.1 Summary of Phase II ESA Methodology and Sampling

The Phase II ESA borings were located in or adjacent to RECs identified in the Phase I ESA and summarized above. Prior to Phase II ESA field work, a Right of Entry Agreement was negotiated with the City of Alexandria to conduct the soil borings and sampling at the property. The Right of Entry Agreement to conduct the Phase II ESA soil borings was signed in October 2015.

Prior to soil boring activity, utility clearance of all soil boring locations was conducted by Miss Utility of Virginia. Soil samples were collected via a “direct-push” technology drill rig. The soil samples were collected in 4-foot long acetate liners directly pushed into the ground by the drill rig. The soil samples were screened in the field for volatile organic compounds (VOCs) with a photoionization detector (PID) immediately upon opening the soil sample liners. The lithology and PID readings for each soil core were recorded in the field log book. Recorded information also included depth interval, moisture, odors (if present), the presence of groundwater, and depth that groundwater was encountered.

A total of seven borings (B-1 through B-8) were completed at the Preferred Alternative during October 15 and October 16, 2015. One scheduled boring (B-3) could not be completed due to thick woody vegetation limiting access to that area of the site. A total of ten soil samples were obtained from the soil borings. All the soil borings encountered fly ash within 2 feet of the ground surface. All soil borings encountered groundwater saturated fly ash at depths ranging from 4 to 6 feet below ground surface.

No significant VOC measurements above background were observed in borehole soils screened in the field for VOCs with a PID. No field indications of contaminated soil, such as discoloration or odors, were observed at any of the borehole locations with the exception of borehole location B-2. Soil boring B-2 is located in the former oil/water separator in the northern portion of the Preferred Alternative. A petroleum odor, dark staining, and ballast material were observed at the bottom of the fly ash fill at 7.5 to 8.0 feet below ground surface. A brown-grey mottled clay silt, which likely represents the original ground surface before emplacement of fly ash, was encountered at 8 feet below ground.

Due to shallow groundwater encountered at 4 to 6 feet below ground, soil samples were generally collected from 2 to 6 feet below ground, just above the depth to the groundwater.

- One soil sample was collected at each of boring sites B-1, B-4, B-5, B-6, and B-8.
- Due to impacted soils observed at 7.5 to 8.0 feet at boring B-2, soil samples were collected at 3 to 5 feet, 6 to 8 feet, and 10 to 12 feet below ground.
- Two soil samples were obtained at boring site B-7: a representative surface soil sample (B-7-0-2) as well as a soil sample at the depth of groundwater (B-7-3-5). The focus of the Phase II ESA soil sampling was subsurface fill (fly ash and ballast) and soil; however, a surface soil sample was taken at this location to provide a complete data set for analysis.

The laboratory analysis consisted of the following:

- All ten soil samples were analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbon-diesel range organics (TPH-DRO), and total metals concentrations.

- Based on locations of the former oil/water separator ponds and fly ash, six of the soil samples were analyzed for polychlorinated biphenols (PCBs).
- Based on field screening of samples and fly ash encountered, two of the soil samples were selected for the analysis of metals by the toxicity characteristics leaching procedure (TCLP), which determines if soils exhibit toxic characteristics which would require a hazardous waste listing to inform soil management and disposal requirements.
- Total metals soil results were also compared with toxicity regulatory criteria using what is referred to as the “20 times rule” for waste characterization. In accordance with Section 1.2 of the TCLP (Method 1311), the 20 times rule can be applied to soil samples by dividing the total metals analysis constituent concentration by 20 and then comparing the resulting concentration to the toxicity regulatory limit. If no theoretical concentration equals or exceeds the toxicity regulatory limit, the soil cannot exhibit toxicity characteristics.

4.2 Summary of Phase II ESA Findings

A summary of the analysis conducted for each soil sample, including the compounds and metals detected by the laboratory analysis, is provided in **Table 4-1**. The laboratory results are compared to EPA risk screening levels (RSLs) for commercial and industrial property use. The complete laboratory report with all laboratory analysis and sample chain of custody documentation is provided in **Appendix B**. Photographs of Phase II ESA field work, including select soil samples (referenced by the laboratory sample numbers used in Appendix B), are provided in **Appendix C**.

Three VOCs (acetone, 2-butanone, and carbon disulfide) were detected in the soil samples. Acetone was detected in eight out of ten samples, 2-butanone was detected in two samples, and carbon disulfide was detected in one sample. The concentrations of the VOCs in soil are below the EPA RSLs. These VOCs are also often considered to be common laboratory contaminants and not associated with samples.

The metals arsenic, barium, cadmium, chromium, lead, selenium, and mercury were detected in all soil samples. Additionally, silver was detected in one soil sample (B-2-10-12). Arsenic exceeded the EPA RSL of 3 mg/kg in all ten samples. No other metal exceeded the EPA RSL. Average concentrations of metals were; arsenic at 115 mg/kg, chromium at 28 mg/kg, lead at 78 mg/kg, selenium at 11 mg/kg, and mercury at 0.081 mg/kg. As noted above in the Phase I ESA findings, previous risk management methods during site development at Potomac Yard have included risk assessment of arsenic concentrations in soil and fly ash to construction/utility workers during site development. Previous risk calculations of arsenic in fly ash and soil to potential construction/utility workers at Potomac Yard did not indicate an unacceptable risk to these site workers (ECS, 2003). However, the average arsenic concentration detected in the Phase II ESA subset of samples is slightly higher than the previous average concentration.

TPH-DRO (total petroleum hydrocarbon-diesel range organics) was detected at 6,100 mg/kg in the soil sample submitted from soil and ballast material with a petroleum odor at the bottom of the fly ash fill at 7.5 to eight feet below ground at soil boring B-2. Soil samples taken at three to five feet and 10 to 12 feet below ground at this boring did not detect TPH-DRO. A TPH concentration in soil that is greater than 100 mg/kg is considered by VDEQ petroleum guidance to be indicative of a petroleum release. However, based on the site environmental remedial history and the Phase II ESA soil samples collected above and below this sample, this concentration is likely representative of an isolated residual petroleum contamination at the bottom of the former oil/water separator pond which was previously remediated at his location.

One PCB (arochlor-1260) was detected in two samples at levels not exceeding the RSL. The previous environmental assessment identified former transformers with PCBs in the former Potomac rail yard, which had been remediated under CERCLA and VDEQ oversight. Select PCB analysis was conducted during the Phase II analysis to document that residual PCBs were not present at the former oil/water separator ponds, fly ash, or soil which could potentially be excavated during redevelopment activities.

Table 4-1: Phase II ESA Detected Analytes

Soil Sample / Contaminant Analyzed	EPA Commercial/ Industrial RSL	Borehole/Sample Location*									
		B-1	B-2			B-4	B-5	B-6	B-7		B-8
Sample Characteristics											
Sample ID #	-	B-1-2-4	B-2-3-5	B-2-6-8	B-2-10-12	B-4-3-5	B-5-2-4	B-6-3-5	B-7-0-2	B-7-3-5	B-8-2-4
Depth Interval (ft bgs)	-	2 - 4	3 - 5	6 - 8	10 - 12	3 - 5	2 - 4	3 - 5	0 - 2	3 - 5	2 - 4
Media	-	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
VOCs by SW-846 8260B (ug/kg)											
Acetone	670,000,000	52	5 J	160	7 J	N.D.	25 J	26	20 J	91	20 J
2-Butanone	190,000,000	N.D.	N.D.	20	N.D.	N.D.	N.D.	N.D.	N.D.	5 J	N.D.
Carbon Disulfide	3,500,000	N.D.	N.D.	4 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Metals by SW-846 6010B (mg/kg)											
Arsenic	3	116	220	51.2	5.26	208	233	99.8	119	78.3	22.4
Barium	220,000	681	1,180	169	67.3	1,110	1,710	1,000	1,060	1,610	103
Cadmium	9,300	0.588 J	0.723	0.572 J	0.893 J	0.492 J	1.11	0.664	0.891	0.615 J	0.526 J
Chromium	n.p.	22.6	30.1	20.6	25.3	33.1	45.8	26.1	30.0	20.1	30.6
Lead	800	25.2	31.4	480	17.5	32.3	56.6	29.5	36.2	18.9	53.5
Selenium	5,800	7.24	13.9	11.0	9.71	11.8	11.5	10.1	17.2	11.6	3.49
Silver	5,800	N.D.	N.D.	N.D.	5.13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury	40	0.070 J	0.083 J	0.264	0.012 J	0.095 J	0.085 J	0.046 J	0.070 J	0.037 J	0.046 J
PCBs by SW-846 8082 (ug/kg)											
PCB-1260	990	25	N.D.	N.D.	N.D.	n.a.	N.D.	15 J	n.a.	n.a.	n.a.
TPH-DRO by SW-846 8015B (mg/kg)											
TPH-DRO soil C10-C28	n.p.	N.D.	N.D.	6,100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

* Borehole Location and Sampling Notes:

Proposed Phase II ESA borehole location B-3 was inaccessible due to heavy vegetation, and no sample was taken.

Due to impacted soils observed at boring B-2, soil samples were collected at multiple depths.

An additional soil sample was collected at B-7 to provide a representative surface level sample.

Key:

VOC = volatile organic compound

PCBs = polychlorinated biphenyls

TPH-DRO = total petroleum hydrocarbon-diesel range organics

SW-846 number references the EPA laboratory test method used.

(mg/kg) = milligrams per kilogram

(ug/kg) = micrograms per kilogram

Mercury analytical results have been rounded to three decimal places.

N.D. = non detect

n.a. = not analyzed

n.p. = not published

J = estimated value between the Method Detection Level (MDL) and Limits of Quantitation (LOQ)

RSLs = USEPA Commercial / Industrial Soil Regional Screening Levels (Revised June 2015)

Bold = Sample result greater than USEPA screening level, or greater than 100 mg/kg TPH-DRO in accordance with VDEQ Storage Tank Program Technical Manual, 2011.

Based on previous Potomac Yard environmental assessment and redevelopment reports, metals are noted to be a primary contaminant of concern in soil and fill. In some cases, metals exceeded the regulatory level that required the soil to be identified as hazardous waste in accordance with Federal Code of Regulations 40 CFR 261.24, Table 1. Hazardous waste characteristics include corrosivity, reactivity, ignitability, and other similar properties. Therefore, soil samples from the most impacted interval observed through field screening (B-2-6-8) and representative of fly ash (B-6-3-5) were submitted for toxicity characteristic leaching procedure (TCLP) for metals. The TCLP test method simulates typical solid waste landfill conditions and predicts whether toxic chemicals in the waste are likely to leach and eventually impact surface water or groundwater. The results of the TCLP metals analysis were below the regulatory criteria requiring a hazardous waste listing. **Table 4-2** lists the TCLP metals analysis results and toxicity regulatory criteria.

Table 4-2 also compares previous total metals soil results (Table 4-1) with toxicity regulatory criteria using what is referred to as the “20 times rule” for waste characterization. In accordance with Section 1.2 of the TCLP (Method 1311), the 20 times rule can be applied to soil samples by dividing the total metals analysis constituent concentration by 20 and then comparing the resulting concentration to the toxicity regulatory limit (Table 4-2). If no theoretical concentration equals or exceeds the toxicity regulatory limit, the soil cannot exhibit toxicity characteristics. No metal concentrations exceeded the regulatory limit for toxicity using the 20 times rule for waste characterization. Therefore, no hazardous waste listing for soil or fill is anticipated.

Additional hazardous waste characteristic analysis of excavated soil and fly ash (i.e., corrosivity, reactivity, ignitability, etc.) may be required for disposal purposes during site development in accordance with 40 CFR 261.24 and Virginia solid waste management regulations. However, based on the Phase II ESA sample analysis and previous environmental assessment sampling conducted at the former Potomac Greens Sub-Area, the fly ash and soil at the Preferred Alternative site are anticipated to be non-hazardous for disposal purposes.

Table 4-2: Phase II ESA Metal Results Compared to the Toxicity Characteristic Regulatory Level

Soil Sample / Contaminant Analyzed	Toxicity Characteristic Regulatory Level (mg/L)	Borehole/Sample Location									
		B-1	B-2			B-4	B-5	B-6	B-7		B-8
Sample Characteristics											
Sample ID	-	B-1-2-4	B-2-3-5	B-2-6-8	B-2-10-12	B-4-3-5	B-5-2-4	B-6-3-5	B-7-0-2	B-7-3-5	B-8-2-4
Depth Interval (ft bgs)	-	2 - 4	3 - 5	6 - 8	10 - 12	3 - 5	2 - 4	3 - 5	0 - 2	3 - 5	2 - 4
Media	-	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Total Metals Analytical Results Using the 20 Times Rule of Waste Characterization (mg/kg)											
Arsenic	5	5.8	11	2.56	0.263	10.4	11.65	4.99	5.95	3.915	1.12
Barium	100	34.05	59	8.45	3.365	55.5	85.5	50	53	80.5	5.15
Cadmium	1	0.029 J	0.0362	0.029 J	0.045 J	0.025 J	0.056	0.033	0.045	0.031 J	0.026 J
Chromium	5	1.13	1.505	1.03	1.265	1.655	2.29	1.305	1.5	1.005	1.53
Lead	5	1.26	1.57	24	0.875	1.615	2.83	1.475	1.81	0.945	2.675
Selenium	1	0.362	0.695	0.55	0.486	0.59	0.575	0.505	0.86	0.58	0.175
Silver	5	N.D.	N.D.	N.D.	0.257	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury	0.2	0.003 J	0.004 J	0.013	0.001 J	0.005 J	0.004 J	0.002 J	0.004 J	0.002 J	0.002 J
TCLP Metals Results SW-846/1311(mg/L)											
Arsenic	5	-	-	0.084	-	-	-	0.212	-	-	-
Barium	100	-	-	3.6	-	-	-	3.14	-	-	-
Cadmium	1	-	-	0.001 J	-	-	-	0.003 J	-	-	-
Chromium	5	-	-	0.009 J	-	-	-	0.008 J	-	-	-
Lead	5	-	-	N.D.	-	-	-	0.008 J	-	-	-
Selenium	1	-	-	0.021	-	-	-	0.081	-	-	-
Silver	5	-	-	N.D.	-	-	-	N.D.	-	-	-
Mercury	0.2	-	-	N.D.	-	-	-	N.D.	-	-	-

Key:

TCLP = Toxicity Characterization Leaching Procedure
 SW-846 number references the EPA laboratory test method used.
 (mg/kg) = milligrams per kilogram

(mg/L) = milligrams per litre

N.D. = non detect

J = estimated value

Toxicity Characteristic Regulatory Level taken from Table 1 of 40 CFR 261.24

Cadmium, selenium, and mercury analytical results have been rounded to three decimal places.

5.0 POTENTIAL IMPACTS TO THE PREFERRED PYMS BASED ON PHASE II ESA FINDINGS

The Preferred Alternative has the potential to excavate fill material consisting of ballast, fly ash, and soil with potentially elevated metals (arsenic). Residual petroleum may also be encountered in subsurface fill material near the location and depth of former oil/water separator ponds. However, the project would not result in long-term or permanent adverse effects due to mitigation of risks through engineering controls and other measures that would be used during construction.

5.1 Contaminated Fill Material and Soil Excavation and Disposal

Subsurface soil and fill material consisting primarily of fly ash, soil, and some ballast with elevated metals content (arsenic), and residual petroleum-impacted soils near the former oil/water separator ponds, have been identified within the limits of disturbance (LOD) for the Preferred Alternative. No soils exhibiting hazardous waste characteristics were identified. Appropriate management on site and disposal off-site of these impacted fill materials would be conducted in accordance with applicable Virginia solid waste management regulations.

5.2 Contaminated Groundwater Dewatering

Based on Phase II ESA analysis of soils and previous site-wide environmental assessment reports, shallow groundwater in the vicinity of the Preferred Alternative is likely contaminated with residual levels of petroleum hydrocarbons and metals. The groundwater depth should be evaluated at the project design phase to identify the necessity of dewatering, groundwater control requirements (if dewatering is required), and disposal or treatment requirements for contaminated groundwater.

The Virginia Pollutant Discharge Elimination System (VPDES) is a set of regulatory standards for discharge of pollutants into surface waters of the Commonwealth. The project would file a notice of intent for coverage under the VPDES construction general permit and related stormwater management program regulations. A site-specific stormwater pollution prevention plan (SWPPP) would be developed, outlining the steps that the contractor would take to comply with the permit, including water quality and quantity requirements, to reduce pollutants in the stormwater runoff from the construction site. The SWPPP also specifies all potential pollutant sources that could enter stormwater leaving the construction site and covers methods used to reduce pollutants in stormwater runoff during and after construction.

5.3 Mitigation of Potential Impacts

Temporary measures taken during construction, such as construction worker health and safety practices, management of excavated contaminated soil, and construction dewatering management and permitting would be implemented during construction to prevent exposure to potential contaminants at RECs. The construction contractor will be informed of site conditions and adequate provision shall be made to clean, control and otherwise alleviate contamination or environmental hazards during construction.

Soil disturbance can be lessened by use of driven piles, shafts, or sheeting, rather than drilled shafts to accommodate any excavations. In areas of the site where pile foundations may need to be installed by alternative methods due to geotechnical and/or vibration concerns, impacts from the generation of potentially contaminated fill, soil, and groundwater would be mitigated in accordance with Virginia Solid Waste Management Regulations (VSWMR) and Virginia Hazardous Waste Management Regulations (VHWMR).

As described in Section 5.2, a site-specific stormwater pollution prevention plan (SWPPP) would be developed, outlining the steps that the contractor would take to comply with the permit, including water quality and quantity requirements, to reduce pollutants in the stormwater runoff from the construction site.

The VSWMR, and the VHWMR, and other hazardous materials regulations described in Section 9 of the Phase I ESA will be followed and documented for on site management of wastes.

6.0 QUALIFICATIONS – LIST OF PREPARERS

6.1 Brendan McGuinness – Senior Environmental Scientist, AECOM, Inc.

BS – Geosciences – State University of New York, 1985
Professional Geologist, 1993, Tennessee, #TN3300

Twenty-five (25) years experience in petroleum and hazardous waste site studies, including site investigation, remedial investigation, and feasibility studies at numerous Department of Defense and commercial sites. Mr. McGuinness provides technical and regulatory support for RCRA, CERCLA, and brownfield projects and supports natural resources and hazardous materials studies under NEPA and other overall environmental review requirements.

7.0 REFERENCES

AECOM, Phase I Environmental Site Assessment and Hazardous & Contaminated Materials Technical Memorandum, August 2012.

American Society of Testing and Materials, E1527-05 *Standard Practice for Environmental Site Assessments*; Phase I Environmental Site Assessment Process.

American Society of Testing and Materials, E1903 - 11 *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.

Engineering Consulting Services, Ltd. *Preliminary Site-Development Risk Assessment Potomac Greens*, April 16, 2003.

Environmental Technology of North America, Inc., *Extent of Contamination Study, Potomac Yard, Alexandria, Virginia*, Volume I, May 24, 1995.

Roy F. Weston, Inc. Off-Site Sediment and Surface Water Sampling Plan, April 24, 1998

U.S. Environmental Protection Agency. Regional Screening Level (RSL) Summary Table, June 2015 (revised). <http://semspub.epa.gov/work/03/2218434.pdf>, accessed November 18, 2015.

U.S. Government Publishing Office, 40 CFR 261.24 Toxicity Characteristic. <http://www.gpo.gov/fdsys/pkg/CFR-2003-title40-vol23/pdf/CFR-2003-title40-vol23-sec261-24.pdf>, accessed November 18, 2015.

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APPENDIX A:

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDIX A

List of Acronyms and Abbreviations

ASTM	American Society of Testing and Materials
bgs	Below Ground Surface
BMP	Best Management Practice
CSXT	CSX Transportation, Inc.,
DEIS	Draft Environmental Impact Statement
DPT	Direct Push Technology
DRO	Diesel Range Organics
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
FEIS	Final Environmental Impact Statement
ECS	Extent of Contamination Study
ESA	Environmental Site Assessment
FTA	Federal Transit Administration
msl	Mean Sea Level
LOQ	Limits of Quantitation
MDL	Method Detection Level
mg/l	Milligrams per Liter
mg/kg	Milligram per Kilogram
N.D.	Non-detect
n.p.	not-published
ug/l	Micrograms per Liter
NPS	National Park Service
NEPA	National Environmental Policy Act
PEPCO	Potomac Electric Power Company
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
PPB	Parts per Billion
PPM	Parts per Million
PYMS	Potomac Yard Metrorail Station
RECs	Recognized Environmental Conditions
RCRA	Resource Conservation and Recovery Act
RF&P	Richmond Fredericksburg and Potomac
RA	Risk Assessment
RSL	Risk Screening Level
TPH	Total Petroleum Hydrocarbons
TCLP	Toxicity Characterization Leaching Procedure
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VOC	Volatile Organic Compound
VRP	VDEQ Voluntary Remediation Program
WMATA	Washington Metropolitan Area Transit Authority

APPENDIX B:

LABORATORY ANALYSIS REPORT

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

November 16, 2015

Project: Potomac Yard Metro StationSubmittal Date: 10/16/2015
Group Number: 1601713
SDG: PYM01
PO Number: 60248359 TASK 0008
State of Sample Origin: VA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
B-6-3-5 Grab Soil	8093379
B-6-3-5 Grab Soil	8093380
B-7-0-2 Grab Soil	8093381
B-7-3-5 Grab Soil	8093382
B-5-2-4 Grab Soil	8093383
B-4-3-5 Grab Soil	8093384
B-2-3-5 Grab Soil	8093385
B-2-6-8 Grab Soil	8093386
B-2-6-8 Grab Soil	8093387
B-2-10-12 Grab Soil	8093388
B-1-2-4 Grab Soil	8093389
B-8-2-4 Grab Soil	8093390

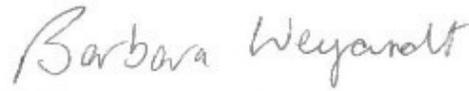
The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO AECOM Environment

Attn: Brendan McGuinness

Respectfully Submitted,



Barbara A. Weyandt
Specialist

(717) 556-7264

Sample Description: B-6-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093379
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY635 SDG#: PYM01-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	26	6	17	0.74
10237	Benzene	71-43-2	N.D.	0.4	4	0.74
10237	Bromodichloromethane	75-27-4	N.D.	0.9	4	0.74
10237	Bromoform	75-25-2	N.D.	0.9	4	0.74
10237	Bromomethane	74-83-9	N.D.	2	4	0.74
10237	2-Butanone	78-93-3	N.D.	3	9	0.74
10237	Carbon Disulfide	75-15-0	N.D.	0.9	4	0.74
10237	Carbon Tetrachloride	56-23-5	N.D.	0.9	4	0.74
10237	Chlorobenzene	108-90-7	N.D.	0.9	4	0.74
10237	Chloroethane	75-00-3	N.D.	2	4	0.74
10237	Chloroform	67-66-3	N.D.	0.9	4	0.74
10237	Chloromethane	74-87-3	N.D.	2	4	0.74
10237	Cyclohexane	110-82-7	N.D.	0.9	4	0.74
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	4	0.74
10237	Dibromochloromethane	124-48-1	N.D.	0.9	4	0.74
10237	1,2-Dibromoethane	106-93-4	N.D.	0.9	4	0.74
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.9	4	0.74
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.9	4	0.74
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.9	4	0.74
10237	Dichlorodifluoromethane	75-71-8	N.D.	2	4	0.74
10237	1,1-Dichloroethane	75-34-3	N.D.	0.9	4	0.74
10237	1,2-Dichloroethane	107-06-2	N.D.	0.9	4	0.74
10237	1,1-Dichloroethene	75-35-4	N.D.	0.9	4	0.74
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.9	4	0.74
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.9	4	0.74
10237	1,2-Dichloropropane	78-87-5	N.D.	0.9	4	0.74
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.9	4	0.74
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.9	4	0.74
10237	Ethylbenzene	100-41-4	N.D.	0.9	4	0.74
10237	Freon 113	76-13-1	N.D.	2	9	0.74
10237	2-Hexanone	591-78-6	N.D.	3	9	0.74
10237	Isopropylbenzene	98-82-8	N.D.	0.9	4	0.74
10237	Methyl Acetate	79-20-9	N.D.	2	4	0.74
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.4	4	0.74
10237	4-Methyl-2-pentanone	108-10-1	N.D.	3	9	0.74
10237	Methylcyclohexane	108-87-2	N.D.	0.9	4	0.74
10237	Methylene Chloride	75-09-2	N.D.	2	4	0.74
10237	Styrene	100-42-5	N.D.	0.9	4	0.74
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.9	4	0.74
10237	Tetrachloroethene	127-18-4	N.D.	0.9	4	0.74
10237	Toluene	108-88-3	N.D.	0.9	4	0.74
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.9	4	0.74
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.9	4	0.74
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.9	4	0.74
10237	Trichloroethene	79-01-6	N.D.	0.9	4	0.74
10237	Trichlorofluoromethane	75-69-4	N.D.	2	4	0.74
10237	Vinyl Chloride	75-01-4	N.D.	0.9	4	0.74
10237	Xylene (Total)	1330-20-7	N.D.	0.9	4	0.74
Pesticides/PCBs	SW-846 8082		ug/kg	ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D.	4.2	20	1

*=This limit was used in the evaluation of the final result

Sample Description: B-6-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093379
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY635 SDG#: PYM01-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs			SW-846 8082	ug/kg	ug/kg	
10736	PCB-1221	11104-28-2	N.D.	5.3	20	1
10736	PCB-1232	11141-16-5	N.D.	9.2	20	1
10736	PCB-1242	53469-21-9	N.D.	3.8	20	1
10736	PCB-1248	12672-29-6	N.D.	3.8	20	1
10736	PCB-1254	11097-69-1	N.D.	3.8	20	1
10736	PCB-1260	11096-82-5	15 J	5.7	20	1
GC Miscellaneous			SW-846 8015B	mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	4.6	14	1
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	99.8	0.667	2.30	1
06946	Barium	7440-39-3	1,000	0.385	2.87	5
06949	Cadmium	7440-43-9	0.664	0.0494	0.575	1
06951	Chromium	7440-47-3	26.1	0.113	1.72	1
06955	Lead	7439-92-1	29.5	0.368	1.72	1
06936	Selenium	7782-49-2	10.1	0.954	2.30	1
06966	Silver	7440-22-4	N.D.	0.138	0.575	1
00159	Mercury	7439-97-6	0.0459 J	0.0117	0.117	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	14.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 15:09	Angela D Sneeringer	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 10:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 10:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 10:15	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 06:09	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: B-6-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093379
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:15 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY635 SDG#: PYM01-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 18:19	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:28	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 01:57	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:00	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-6-3-5 Grab Soil
Potomac Yard Metro Station, VA TCLP NVE

LL Sample # TL 8093380
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:15 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PL635 SDG#: PYM01-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
		SW-846 6010B	mg/l	mg/l	mg/l	
07035	Arsenic	7440-38-2	0.212	0.0070	0.0200	1
07046	Barium	7440-39-3	3.14	0.00030	0.0050	1
07049	Cadmium	7440-43-9	0.0028 J	0.00030	0.0050	1
07051	Chromium	7440-47-3	0.0079 J	0.0015	0.0150	1
07055	Lead	7439-92-1	0.0078 J	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0806	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0014	0.0050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07046	Barium	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07049	Cadmium	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07055	Lead	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
07066	Silver	SW-846 6010B	1	153145705001	11/11/2015 10:14	Eric L Eby	1
00259	Mercury	SW-846 7470A	1	153145713002	11/11/2015 09:47	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	153145705001	11/10/2015 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	153145713002	11/11/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15313-2486-094 7A	11/09/2015 12:45	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: B-7-0-2 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093381
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:45 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY705 SDG#: PYM01-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	20	J	10	28	0.99
10237	Benzene	71-43-2	N.D.		0.7	7	0.99
10237	Bromodichloromethane	75-27-4	N.D.		1	7	0.99
10237	Bromoform	75-25-2	N.D.		1	7	0.99
10237	Bromomethane	74-83-9	N.D.		3	7	0.99
10237	2-Butanone	78-93-3	N.D.		6	14	0.99
10237	Carbon Disulfide	75-15-0	N.D.		1	7	0.99
10237	Carbon Tetrachloride	56-23-5	N.D.		1	7	0.99
10237	Chlorobenzene	108-90-7	N.D.		1	7	0.99
10237	Chloroethane	75-00-3	N.D.		3	7	0.99
10237	Chloroform	67-66-3	N.D.		1	7	0.99
10237	Chloromethane	74-87-3	N.D.		3	7	0.99
10237	Cyclohexane	110-82-7	N.D.		1	7	0.99
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		3	7	0.99
10237	Dibromochloromethane	124-48-1	N.D.		1	7	0.99
10237	1,2-Dibromoethane	106-93-4	N.D.		1	7	0.99
10237	1,2-Dichlorobenzene	95-50-1	N.D.		1	7	0.99
10237	1,3-Dichlorobenzene	541-73-1	N.D.		1	7	0.99
10237	1,4-Dichlorobenzene	106-46-7	N.D.		1	7	0.99
10237	Dichlorodifluoromethane	75-71-8	N.D.		3	7	0.99
10237	1,1-Dichloroethane	75-34-3	N.D.		1	7	0.99
10237	1,2-Dichloroethane	107-06-2	N.D.		1	7	0.99
10237	1,1-Dichloroethene	75-35-4	N.D.		1	7	0.99
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	7	0.99
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	7	0.99
10237	1,2-Dichloropropane	78-87-5	N.D.		1	7	0.99
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	7	0.99
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	7	0.99
10237	Ethylbenzene	100-41-4	N.D.		1	7	0.99
10237	Freon 113	76-13-1	N.D.		3	14	0.99
10237	2-Hexanone	591-78-6	N.D.		4	14	0.99
10237	Isopropylbenzene	98-82-8	N.D.		1	7	0.99
10237	Methyl Acetate	79-20-9	N.D.		3	7	0.99
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.7	7	0.99
10237	4-Methyl-2-pentanone	108-10-1	N.D.		4	14	0.99
10237	Methylcyclohexane	108-87-2	N.D.		1	7	0.99
10237	Methylene Chloride	75-09-2	N.D.		3	7	0.99
10237	Styrene	100-42-5	N.D.		1	7	0.99
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	7	0.99
10237	Tetrachloroethene	127-18-4	N.D.		1	7	0.99
10237	Toluene	108-88-3	N.D.		1	7	0.99
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.		1	7	0.99
10237	1,1,1-Trichloroethane	71-55-6	N.D.		1	7	0.99
10237	1,1,2-Trichloroethane	79-00-5	N.D.		1	7	0.99
10237	Trichloroethene	79-01-6	N.D.		1	7	0.99
10237	Trichlorofluoromethane	75-69-4	N.D.		3	7	0.99
10237	Vinyl Chloride	75-01-4	N.D.		1	7	0.99
10237	Xylene (Total)	1330-20-7	N.D.		1	7	0.99
GC Miscellaneous	SW-846 8015B		mg/kg		mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.		5.7	17	1

*=This limit was used in the evaluation of the final result

Sample Description: B-7-0-2 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093381
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:45 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY705 SDG#: PYM01-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	119	0.832	2.87	1
06946	Barium	7440-39-3	1,060	0.481	3.59	5
06949	Cadmium	7440-43-9	0.891	0.0617	0.717	1
06951	Chromium	7440-47-3	30.0	0.141	2.15	1
06955	Lead	7439-92-1	36.2	0.459	2.15	1
06936	Selenium	7782-49-2	17.2	1.19	2.87	1
06966	Silver	7440-22-4	N.D.	0.172	0.717	1
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0701 J	0.0140	0.140	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	30.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 15:32	Angela D Sneringer	0.99
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 10:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 10:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 10:45	Client Supplied	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 18:41	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:31	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:01	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:10	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: B-7-0-2 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093381
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 10:45 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY705 SDG#: PYM01-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-7-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093382
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:00 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY735 SDG#: PYM01-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	91	7	20	0.71
10237	Benzene	71-43-2	N.D.	0.5	5	0.71
10237	Bromodichloromethane	75-27-4	N.D.	1	5	0.71
10237	Bromoform	75-25-2	N.D.	1	5	0.71
10237	Bromomethane	74-83-9	N.D.	2	5	0.71
10237	2-Butanone	78-93-3	5 J	4	10	0.71
10237	Carbon Disulfide	75-15-0	N.D.	1	5	0.71
10237	Carbon Tetrachloride	56-23-5	N.D.	1	5	0.71
10237	Chlorobenzene	108-90-7	N.D.	1	5	0.71
10237	Chloroethane	75-00-3	N.D.	2	5	0.71
10237	Chloroform	67-66-3	N.D.	1	5	0.71
10237	Chloromethane	74-87-3	N.D.	2	5	0.71
10237	Cyclohexane	110-82-7	N.D.	1	5	0.71
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	0.71
10237	Dibromochloromethane	124-48-1	N.D.	1	5	0.71
10237	1,2-Dibromoethane	106-93-4	N.D.	1	5	0.71
10237	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	0.71
10237	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	0.71
10237	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	0.71
10237	Dichlorodifluoromethane	75-71-8	N.D.	2	5	0.71
10237	1,1-Dichloroethane	75-34-3	N.D.	1	5	0.71
10237	1,2-Dichloroethane	107-06-2	N.D.	1	5	0.71
10237	1,1-Dichloroethene	75-35-4	N.D.	1	5	0.71
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	1	5	0.71
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	1	5	0.71
10237	1,2-Dichloropropane	78-87-5	N.D.	1	5	0.71
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	0.71
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	0.71
10237	Ethylbenzene	100-41-4	N.D.	1	5	0.71
10237	Freon 113	76-13-1	N.D.	2	10	0.71
10237	2-Hexanone	591-78-6	N.D.	3	10	0.71
10237	Isopropylbenzene	98-82-8	N.D.	1	5	0.71
10237	Methyl Acetate	79-20-9	N.D.	2	5	0.71
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	5	0.71
10237	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	0.71
10237	Methylcyclohexane	108-87-2	N.D.	1	5	0.71
10237	Methylene Chloride	75-09-2	N.D.	2	5	0.71
10237	Styrene	100-42-5	N.D.	1	5	0.71
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	0.71
10237	Tetrachloroethene	127-18-4	N.D.	1	5	0.71
10237	Toluene	108-88-3	N.D.	1	5	0.71
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	0.71
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	5	0.71
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	5	0.71
10237	Trichloroethene	79-01-6	N.D.	1	5	0.71
10237	Trichlorofluoromethane	75-69-4	N.D.	2	5	0.71
10237	Vinyl Chloride	75-01-4	N.D.	1	5	0.71
10237	Xylene (Total)	1330-20-7	N.D.	1	5	0.71
GC Miscellaneous	SW-846 8015B		mg/kg	mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	5.5	17	1

*=This limit was used in the evaluation of the final result

Sample Description: B-7-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093382
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:00 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY735 SDG#: PYM01-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	78.3	0.781	2.69	1
06946	Barium	7440-39-3	1,610	0.451	3.37	5
06949	Cadmium	7440-43-9	0.615 J	0.0579	0.673	1
06951	Chromium	7440-47-3	20.1	0.132	2.02	1
06955	Lead	7439-92-1	18.9	0.431	2.02	1
06936	Selenium	7782-49-2	11.6	1.12	2.69	1
06966	Silver	7440-22-4	N.D.	0.808	3.37	5
Reporting limits were raised due to interference from the sample matrix.						
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0365 J	0.0135	0.135	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	27.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 15:55	Angela D Sneeringer	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 11:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 11:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 11:00	Client Supplied	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 14:12	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:10	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:34	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:10	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:10	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:10	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:10	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/23/2015 06:23	Tara L Snyder	5
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:16	Damary Valentin	1

*=This limit was used in the evaluation of the final result

Sample Description: B-7-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093382
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:00 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY735 SDG#: PYM01-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-5-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093383
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY524 SDG#: PYM01-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	25 J		10	28	0.92
10237	Benzene	71-43-2	N.D.		0.7	7	0.92
10237	Bromodichloromethane	75-27-4	N.D.		1	7	0.92
10237	Bromoform	75-25-2	N.D.		1	7	0.92
10237	Bromomethane	74-83-9	N.D.		3	7	0.92
10237	2-Butanone	78-93-3	N.D.		6	14	0.92
10237	Carbon Disulfide	75-15-0	N.D.		1	7	0.92
10237	Carbon Tetrachloride	56-23-5	N.D.		1	7	0.92
10237	Chlorobenzene	108-90-7	N.D.		1	7	0.92
10237	Chloroethane	75-00-3	N.D.		3	7	0.92
10237	Chloroform	67-66-3	N.D.		1	7	0.92
10237	Chloromethane	74-87-3	N.D.		3	7	0.92
10237	Cyclohexane	110-82-7	N.D.		1	7	0.92
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		3	7	0.92
10237	Dibromochloromethane	124-48-1	N.D.		1	7	0.92
10237	1,2-Dibromoethane	106-93-4	N.D.		1	7	0.92
10237	1,2-Dichlorobenzene	95-50-1	N.D.		1	7	0.92
10237	1,3-Dichlorobenzene	541-73-1	N.D.		1	7	0.92
10237	1,4-Dichlorobenzene	106-46-7	N.D.		1	7	0.92
10237	Dichlorodifluoromethane	75-71-8	N.D.		3	7	0.92
10237	1,1-Dichloroethane	75-34-3	N.D.		1	7	0.92
10237	1,2-Dichloroethane	107-06-2	N.D.		1	7	0.92
10237	1,1-Dichloroethene	75-35-4	N.D.		1	7	0.92
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	7	0.92
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	7	0.92
10237	1,2-Dichloropropane	78-87-5	N.D.		1	7	0.92
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	7	0.92
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	7	0.92
10237	Ethylbenzene	100-41-4	N.D.		1	7	0.92
10237	Freon 113	76-13-1	N.D.		3	14	0.92
10237	2-Hexanone	591-78-6	N.D.		4	14	0.92
10237	Isopropylbenzene	98-82-8	N.D.		1	7	0.92
10237	Methyl Acetate	79-20-9	N.D.		3	7	0.92
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.7	7	0.92
10237	4-Methyl-2-pentanone	108-10-1	N.D.		4	14	0.92
10237	Methylcyclohexane	108-87-2	N.D.		1	7	0.92
10237	Methylene Chloride	75-09-2	N.D.		3	7	0.92
10237	Styrene	100-42-5	N.D.		1	7	0.92
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	7	0.92
10237	Tetrachloroethene	127-18-4	N.D.		1	7	0.92
10237	Toluene	108-88-3	N.D.		1	7	0.92
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.		1	7	0.92
10237	1,1,1-Trichloroethane	71-55-6	N.D.		1	7	0.92
10237	1,1,2-Trichloroethane	79-00-5	N.D.		1	7	0.92
10237	Trichloroethene	79-01-6	N.D.		1	7	0.92
10237	Trichlorofluoromethane	75-69-4	N.D.		3	7	0.92
10237	Vinyl Chloride	75-01-4	N.D.		1	7	0.92
10237	Xylene (Total)	1330-20-7	N.D.		1	7	0.92
Pesticides/PCBs	SW-846 8082		ug/kg		ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D.		5.5	26	1

*=This limit was used in the evaluation of the final result

Sample Description: B-5-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093383
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY524 SDG#: PYM01-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs SW-846 8082						
10736	PCB-1221	11104-28-2	N.D.	7.0	26	1
10736	PCB-1232	11141-16-5	N.D.	12	26	1
10736	PCB-1242	53469-21-9	N.D.	5.0	26	1
10736	PCB-1248	12672-29-6	N.D.	5.0	26	1
10736	PCB-1254	11097-69-1	N.D.	5.0	26	1
10736	PCB-1260	11096-82-5	N.D.	7.4	26	1
GC Miscellaneous SW-846 8015B						
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	6.1	18	1
Metals SW-846 6010B						
06935	Arsenic	7440-38-2	233	0.885	3.05	1
06946	Barium	7440-39-3	1,710	0.511	3.82	5
06949	Cadmium	7440-43-9	1.11	0.0656	0.763	1
06951	Chromium	7440-47-3	45.8	0.150	2.29	1
06955	Lead	7439-92-1	56.6	0.489	2.29	1
06936	Selenium	7782-49-2	11.5	1.27	3.05	1
06966	Silver	7440-22-4	N.D.	0.916	3.82	5
Reporting limits were raised due to interference from the sample matrix.						
SW-846 7471A						
00159	Mercury	7439-97-6	0.0848 J	0.0149	0.149	1
Wet Chemistry SM 2540 G-1997						
00111	Moisture	n.a.	34.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3	SW-846 8260B	1	X152931AA	10/20/2015 16:18	Angela D Sneeringer	0.92
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 11:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 11:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 11:15	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 06:20	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: B-5-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093383
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY524 SDG#: PYM01-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 14:34	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:13	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:41	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:13	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:13	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:13	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:13	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/23/2015 06:26	Tara L Snyder	5
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:18	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-4-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093384
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:30 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY435 SDG#: PYM01-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	N.D.	9	26	0.93
10237	Benzene	71-43-2	N.D.	0.6	6	0.93
10237	Bromodichloromethane	75-27-4	N.D.	1	6	0.93
10237	Bromoform	75-25-2	N.D.	1	6	0.93
10237	Bromomethane	74-83-9	N.D.	3	6	0.93
10237	2-Butanone	78-93-3	N.D.	5	13	0.93
10237	Carbon Disulfide	75-15-0	N.D.	1	6	0.93
10237	Carbon Tetrachloride	56-23-5	N.D.	1	6	0.93
10237	Chlorobenzene	108-90-7	N.D.	1	6	0.93
10237	Chloroethane	75-00-3	N.D.	3	6	0.93
10237	Chloroform	67-66-3	N.D.	1	6	0.93
10237	Chloromethane	74-87-3	N.D.	3	6	0.93
10237	Cyclohexane	110-82-7	N.D.	1	6	0.93
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	3	6	0.93
10237	Dibromochloromethane	124-48-1	N.D.	1	6	0.93
10237	1,2-Dibromoethane	106-93-4	N.D.	1	6	0.93
10237	1,2-Dichlorobenzene	95-50-1	N.D.	1	6	0.93
10237	1,3-Dichlorobenzene	541-73-1	N.D.	1	6	0.93
10237	1,4-Dichlorobenzene	106-46-7	N.D.	1	6	0.93
10237	Dichlorodifluoromethane	75-71-8	N.D.	3	6	0.93
10237	1,1-Dichloroethane	75-34-3	N.D.	1	6	0.93
10237	1,2-Dichloroethane	107-06-2	N.D.	1	6	0.93
10237	1,1-Dichloroethene	75-35-4	N.D.	1	6	0.93
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	1	6	0.93
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	1	6	0.93
10237	1,2-Dichloropropane	78-87-5	N.D.	1	6	0.93
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	6	0.93
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	6	0.93
10237	Ethylbenzene	100-41-4	N.D.	1	6	0.93
10237	Freon 113	76-13-1	N.D.	3	13	0.93
10237	2-Hexanone	591-78-6	N.D.	4	13	0.93
10237	Isopropylbenzene	98-82-8	N.D.	1	6	0.93
10237	Methyl Acetate	79-20-9	N.D.	3	6	0.93
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.6	6	0.93
10237	4-Methyl-2-pentanone	108-10-1	N.D.	4	13	0.93
10237	Methylcyclohexane	108-87-2	N.D.	1	6	0.93
10237	Methylene Chloride	75-09-2	N.D.	3	6	0.93
10237	Styrene	100-42-5	N.D.	1	6	0.93
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	6	0.93
10237	Tetrachloroethene	127-18-4	N.D.	1	6	0.93
10237	Toluene	108-88-3	N.D.	1	6	0.93
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	6	0.93
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	6	0.93
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	6	0.93
10237	Trichloroethene	79-01-6	N.D.	1	6	0.93
10237	Trichlorofluoromethane	75-69-4	N.D.	3	6	0.93
10237	Vinyl Chloride	75-01-4	N.D.	1	6	0.93
10237	Xylene (Total)	1330-20-7	N.D.	1	6	0.93
GC Miscellaneous	SW-846 8015B		mg/kg	mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	5.5	16	1

*=This limit was used in the evaluation of the final result

Sample Description: B-4-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093384
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:30 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY435 SDG#: PYM01-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	208	0.809	2.79	1
06946	Barium	7440-39-3	1,110	0.467	3.49	5
06949	Cadmium	7440-43-9	0.492 J	0.0600	0.697	1
06951	Chromium	7440-47-3	33.1	0.137	2.09	1
06955	Lead	7439-92-1	32.3	0.446	2.09	1
06936	Selenium	7782-49-2	11.8	1.16	2.79	1
06966	Silver	7440-22-4	N.D.	0.167	0.697	1
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0949 J	0.0131	0.131	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	28.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 16:40	Angela D Sneringer	0.93
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 11:30	Client Supplied	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 16:49	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:48	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:17	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:20	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: B-4-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093384
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:30 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY435 SDG#: PYM01-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093385
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:45 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY235 SDG#: PYM01-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	5 J	4	10	0.37
10237	Benzene	71-43-2	N.D.	0.3	3	0.37
10237	Bromodichloromethane	75-27-4	N.D.	0.5	3	0.37
10237	Bromoform	75-25-2	N.D.	0.5	3	0.37
10237	Bromomethane	74-83-9	N.D.	1	3	0.37
10237	2-Butanone	78-93-3	N.D.	2	5	0.37
10237	Carbon Disulfide	75-15-0	N.D.	0.5	3	0.37
10237	Carbon Tetrachloride	56-23-5	N.D.	0.5	3	0.37
10237	Chlorobenzene	108-90-7	N.D.	0.5	3	0.37
10237	Chloroethane	75-00-3	N.D.	1	3	0.37
10237	Chloroform	67-66-3	N.D.	0.5	3	0.37
10237	Chloromethane	74-87-3	N.D.	1	3	0.37
10237	Cyclohexane	110-82-7	N.D.	0.5	3	0.37
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	1	3	0.37
10237	Dibromochloromethane	124-48-1	N.D.	0.5	3	0.37
10237	1,2-Dibromoethane	106-93-4	N.D.	0.5	3	0.37
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	3	0.37
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	3	0.37
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	3	0.37
10237	Dichlorodifluoromethane	75-71-8	N.D.	1	3	0.37
10237	1,1-Dichloroethane	75-34-3	N.D.	0.5	3	0.37
10237	1,2-Dichloroethane	107-06-2	N.D.	0.5	3	0.37
10237	1,1-Dichloroethene	75-35-4	N.D.	0.5	3	0.37
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	3	0.37
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	3	0.37
10237	1,2-Dichloropropane	78-87-5	N.D.	0.5	3	0.37
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	3	0.37
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	3	0.37
10237	Ethylbenzene	100-41-4	N.D.	0.5	3	0.37
10237	Freon 113	76-13-1	N.D.	1	5	0.37
10237	2-Hexanone	591-78-6	N.D.	2	5	0.37
10237	Isopropylbenzene	98-82-8	N.D.	0.5	3	0.37
10237	Methyl Acetate	79-20-9	N.D.	1	3	0.37
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.3	3	0.37
10237	4-Methyl-2-pentanone	108-10-1	N.D.	2	5	0.37
10237	Methylcyclohexane	108-87-2	N.D.	0.5	3	0.37
10237	Methylene Chloride	75-09-2	N.D.	1	3	0.37
10237	Styrene	100-42-5	N.D.	0.5	3	0.37
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	3	0.37
10237	Tetrachloroethene	127-18-4	N.D.	0.5	3	0.37
10237	Toluene	108-88-3	N.D.	0.5	3	0.37
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	3	0.37
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	3	0.37
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	3	0.37
10237	Trichloroethene	79-01-6	N.D.	0.5	3	0.37
10237	Trichlorofluoromethane	75-69-4	N.D.	1	3	0.37
10237	Vinyl Chloride	75-01-4	N.D.	0.5	3	0.37
10237	Xylene (Total)	1330-20-7	N.D.	0.5	3	0.37
Pesticides/PCBs	SW-846 8082		ug/kg	ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D.	5.0	23	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093385
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:45 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY235 SDG#: PYM01-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs			SW-846 8082	ug/kg	ug/kg	
10736	PCB-1221	11104-28-2	N.D.	6.3	23	1
10736	PCB-1232	11141-16-5	N.D.	11	23	1
10736	PCB-1242	53469-21-9	N.D.	4.5	23	1
10736	PCB-1248	12672-29-6	N.D.	4.5	23	1
10736	PCB-1254	11097-69-1	N.D.	4.5	23	1
10736	PCB-1260	11096-82-5	N.D.	6.8	23	1
GC Miscellaneous			SW-846 8015B	mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	5.5	16	1
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	220	0.802	2.77	1
06946	Barium	7440-39-3	1,180	0.463	3.46	5
06949	Cadmium	7440-43-9	0.723	0.0595	0.692	1
06951	Chromium	7440-47-3	30.1	0.136	2.07	1
06955	Lead	7439-92-1	31.4	0.443	2.07	1
06936	Selenium	7782-49-2	13.9	1.15	2.77	1
06966	Silver	7440-22-4	N.D.	0.166	0.692	1
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0830 J	0.0129	0.129	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	27.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152942AA	10/21/2015 22:28	Kathrine K Muramatsu	0.37
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 11:45	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 06:32	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-3-5 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093385
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 11:45 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY235 SDG#: PYM01-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 14:57	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 03:51	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:20	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:23	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-6-8 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093386
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 12:00 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY268 SDG#: PYM01-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	160	13	36	1.15
10237	Benzene	71-43-2	N.D.	0.9	9	1.15
10237	Bromodichloromethane	75-27-4	N.D.	2	9	1.15
10237	Bromoform	75-25-2	N.D.	2	9	1.15
10237	Bromomethane	74-83-9	N.D.	4	9	1.15
10237	2-Butanone	78-93-3	20	7	18	1.15
10237	Carbon Disulfide	75-15-0	4	2	9	1.15
10237	Carbon Tetrachloride	56-23-5	N.D.	2	9	1.15
10237	Chlorobenzene	108-90-7	N.D.	2	9	1.15
10237	Chloroethane	75-00-3	N.D.	4	9	1.15
10237	Chloroform	67-66-3	N.D.	2	9	1.15
10237	Chloromethane	74-87-3	N.D.	4	9	1.15
10237	Cyclohexane	110-82-7	N.D.	2	9	1.15
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	4	9	1.15
10237	Dibromochloromethane	124-48-1	N.D.	2	9	1.15
10237	1,2-Dibromoethane	106-93-4	N.D.	2	9	1.15
10237	1,2-Dichlorobenzene	95-50-1	N.D.	2	9	1.15
10237	1,3-Dichlorobenzene	541-73-1	N.D.	2	9	1.15
10237	1,4-Dichlorobenzene	106-46-7	N.D.	2	9	1.15
10237	Dichlorodifluoromethane	75-71-8	N.D.	4	9	1.15
10237	1,1-Dichloroethane	75-34-3	N.D.	2	9	1.15
10237	1,2-Dichloroethane	107-06-2	N.D.	2	9	1.15
10237	1,1-Dichloroethene	75-35-4	N.D.	2	9	1.15
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	2	9	1.15
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	2	9	1.15
10237	1,2-Dichloropropane	78-87-5	N.D.	2	9	1.15
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	2	9	1.15
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	2	9	1.15
10237	Ethylbenzene	100-41-4	N.D.	2	9	1.15
10237	Freon 113	76-13-1	N.D.	4	18	1.15
10237	2-Hexanone	591-78-6	N.D.	5	18	1.15
10237	Isopropylbenzene	98-82-8	N.D.	2	9	1.15
10237	Methyl Acetate	79-20-9	N.D.	4	9	1.15
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.9	9	1.15
10237	4-Methyl-2-pentanone	108-10-1	N.D.	5	18	1.15
10237	Methylcyclohexane	108-87-2	N.D.	2	9	1.15
10237	Methylene Chloride	75-09-2	N.D.	4	9	1.15
10237	Styrene	100-42-5	N.D.	2	9	1.15
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	2	9	1.15
10237	Tetrachloroethene	127-18-4	N.D.	2	9	1.15
10237	Toluene	108-88-3	N.D.	2	9	1.15
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	2	9	1.15
10237	1,1,1-Trichloroethane	71-55-6	N.D.	2	9	1.15
10237	1,1,2-Trichloroethane	79-00-5	N.D.	2	9	1.15
10237	Trichloroethene	79-01-6	N.D.	2	9	1.15
10237	Trichlorofluoromethane	75-69-4	N.D.	4	9	1.15
10237	Vinyl Chloride	75-01-4	N.D.	2	9	1.15
10237	Xylene (Total)	1330-20-7	N.D.	2	9	1.15

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:
The sample was re-analyzed and the QC is again outside of the

*=This limit was used in the evaluation of the final result

Sample Description: B-2-6-8 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093386
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 12:00 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY268 SDG#: PYM01-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
acceptance limits, indicating a matrix effect. The data is reported from the initial trial.						
Pesticides/PCBs			SW-846 8082	ug/kg	ug/kg	ug/kg
10736	PCB-1016	12674-11-2	N.D.	28	130	5
10736	PCB-1221	11104-28-2	N.D.	35	130	5
10736	PCB-1232	11141-16-5	N.D.	61	130	5
10736	PCB-1242	53469-21-9	N.D.	25	130	5
10736	PCB-1248	12672-29-6	N.D.	25	130	5
10736	PCB-1254	11097-69-1	N.D.	25	130	5
10736	PCB-1260	11096-82-5	N.D.	38	130	5
Reporting limits were raised due to interference from the sample matrix.						
GC Miscellaneous			SW-846 8015B	mg/kg	mg/kg	mg/kg
10941	TPH-DRO soil C10-C28 microwave	n.a.	6,100	150	460	25
Metals			SW-846 6010B	mg/kg	mg/kg	mg/kg
06935	Arsenic	7440-38-2	51.2	0.876	3.02	1
06946	Barium	7440-39-3	169	0.101	0.755	1
06949	Cadmium	7440-43-9	0.572 J	0.0649	0.755	1
06951	Chromium	7440-47-3	20.6	0.148	2.26	1
06955	Lead	7439-92-1	480	0.483	2.26	1
06936	Selenium	7782-49-2	11.0	1.25	3.02	1
06966	Silver	7440-22-4	N.D.	0.181	0.755	1
			SW-846 7471A	mg/kg	mg/kg	mg/kg
00159	Mercury	7439-97-6	0.264	0.0152	0.152	1
Wet Chemistry			SM 2540 G-1997	%	%	%
00111	Moisture	n.a.	35.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 18:35	Angela D Sneeringer	1.15
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 12:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 12:00	Client Supplied	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-6-8 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093386
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 12:00 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY268 SDG#: PYM01-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 12:00	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 21:15	Jessica L Miller	5
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/27/2015 16:34	Thomas C Wildermuth	25
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:23	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:25	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-6-8 Grab Soil
Potomac Yard Metro Station, VA TCLP NVE

LL Sample # TL 8093387
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/15/2015 12:00 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PL268 SDG#: PYM01-09

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
		SW-846 6010B	mg/l	mg/l	mg/l	
07035	Arsenic	7440-38-2	0.0842	0.0070	0.0200	1
07046	Barium	7440-39-3	3.60	0.00030	0.0050	1
07049	Cadmium	7440-43-9	0.0013 J	0.00030	0.0050	1
07051	Chromium	7440-47-3	0.0091 J	0.0015	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0208	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0014	0.0050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07046	Barium	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07049	Cadmium	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07051	Chromium	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07055	Lead	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
07066	Silver	SW-846 6010B	1	153145705001	11/11/2015 10:18	Eric L Eby	1
00259	Mercury	SW-846 7470A	1	153145713002	11/11/2015 09:49	Damary Valentin	1
05705	ICP-WW/TL, 3010A (tot) - U3	SW-846 3010A	1	153145705001	11/10/2015 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	153145713002	11/11/2015 01:00	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	15313-2486-094 7A	11/09/2015 12:45	Christina A Huber	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: B-2-10-12 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093388
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/13/2015 12:15 by BM

AECOM Environment
3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY210 SDG#: PYM01-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	7 J	6	18	0.72
10237	Benzene	71-43-2	N.D.	0.4	4	0.72
10237	Bromodichloromethane	75-27-4	N.D.	0.9	4	0.72
10237	Bromoform	75-25-2	N.D.	0.9	4	0.72
10237	Bromomethane	74-83-9	N.D.	2	4	0.72
10237	2-Butanone	78-93-3	N.D.	4	9	0.72
10237	Carbon Disulfide	75-15-0	N.D.	0.9	4	0.72
10237	Carbon Tetrachloride	56-23-5	N.D.	0.9	4	0.72
10237	Chlorobenzene	108-90-7	N.D.	0.9	4	0.72
10237	Chloroethane	75-00-3	N.D.	2	4	0.72
10237	Chloroform	67-66-3	N.D.	0.9	4	0.72
10237	Chloromethane	74-87-3	N.D.	2	4	0.72
10237	Cyclohexane	110-82-7	N.D.	0.9	4	0.72
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	4	0.72
10237	Dibromochloromethane	124-48-1	N.D.	0.9	4	0.72
10237	1,2-Dibromoethane	106-93-4	N.D.	0.9	4	0.72
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.9	4	0.72
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.9	4	0.72
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.9	4	0.72
10237	Dichlorodifluoromethane	75-71-8	N.D.	2	4	0.72
10237	1,1-Dichloroethane	75-34-3	N.D.	0.9	4	0.72
10237	1,2-Dichloroethane	107-06-2	N.D.	0.9	4	0.72
10237	1,1-Dichloroethene	75-35-4	N.D.	0.9	4	0.72
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.9	4	0.72
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.9	4	0.72
10237	1,2-Dichloropropane	78-87-5	N.D.	0.9	4	0.72
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.9	4	0.72
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.9	4	0.72
10237	Ethylbenzene	100-41-4	N.D.	0.9	4	0.72
10237	Freon 113	76-13-1	N.D.	2	9	0.72
10237	2-Hexanone	591-78-6	N.D.	3	9	0.72
10237	Isopropylbenzene	98-82-8	N.D.	0.9	4	0.72
10237	Methyl Acetate	79-20-9	N.D.	2	4	0.72
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.4	4	0.72
10237	4-Methyl-2-pentanone	108-10-1	N.D.	3	9	0.72
10237	Methylcyclohexane	108-87-2	N.D.	0.9	4	0.72
10237	Methylene Chloride	75-09-2	N.D.	2	4	0.72
10237	Styrene	100-42-5	N.D.	0.9	4	0.72
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.9	4	0.72
10237	Tetrachloroethene	127-18-4	N.D.	0.9	4	0.72
10237	Toluene	108-88-3	N.D.	0.9	4	0.72
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.9	4	0.72
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.9	4	0.72
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.9	4	0.72
10237	Trichloroethene	79-01-6	N.D.	0.9	4	0.72
10237	Trichlorofluoromethane	75-69-4	N.D.	2	4	0.72
10237	Vinyl Chloride	75-01-4	N.D.	0.9	4	0.72
10237	Xylene (Total)	1330-20-7	N.D.	0.9	4	0.72
Pesticides/PCBs	SW-846 8082		ug/kg	ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D.	4.4	21	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-10-12 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093388
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/13/2015 12:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY210 SDG#: PYM01-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs SW-846 8082						
10736	PCB-1221	11104-28-2	N.D.	5.6	21	1
10736	PCB-1232	11141-16-5	N.D.	9.8	21	1
10736	PCB-1242	53469-21-9	N.D.	4.0	21	1
10736	PCB-1248	12672-29-6	N.D.	4.0	21	1
10736	PCB-1254	11097-69-1	N.D.	4.0	21	1
10736	PCB-1260	11096-82-5	N.D.	6.0	21	1
GC Miscellaneous SW-846 8015B						
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	4.9	15	1
Metals SW-846 6010B						
06935	Arsenic	7440-38-2	5.26	0.700	2.41	1
06946	Barium	7440-39-3	67.3	0.0809	0.604	1
06949	Cadmium	7440-43-9	0.893 J	0.260	3.02	5
Reporting limits were raised due to interference from the sample matrix.						
06951	Chromium	7440-47-3	25.3	0.118	1.81	1
06955	Lead	7439-92-1	17.5	0.386	1.81	1
06936	Selenium	7782-49-2	9.71	1.00	2.41	1
06966	Silver	7440-22-4	5.13	0.145	0.604	1
SW-846 7471A						
00159	Mercury	7439-97-6	0.0123 J	0.0121	0.121	1
Wet Chemistry SM 2540 G-1997						
00111	Moisture	n.a.	18.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 17:26	Angela D Sneeringer	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/15/2015 12:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/15/2015 12:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/15/2015 12:15	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 07:17	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: B-2-10-12 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093388
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/13/2015 12:15 by BM

AECOM Environment

3101 Wilson Boulevard

Submitted: 10/16/2015 17:40

Suite 900

Reported: 11/16/2015 11:45

Arlington VA

PY210 SDG#: PYM01-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 15:19	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152925708002	10/23/2015 03:54	Tara L Snyder	5
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:26	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:27	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-1-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093389
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 10:30 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY124 SDG#: PYM01-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	ug/kg	
10237	Acetone	67-64-1	52	9	27	1.04
10237	Benzene	71-43-2	N.D.	0.7	7	1.04
10237	Bromodichloromethane	75-27-4	N.D.	1	7	1.04
10237	Bromoform	75-25-2	N.D.	1	7	1.04
10237	Bromomethane	74-83-9	N.D.	3	7	1.04
10237	2-Butanone	78-93-3	N.D.	5	13	1.04
10237	Carbon Disulfide	75-15-0	N.D.	1	7	1.04
10237	Carbon Tetrachloride	56-23-5	N.D.	1	7	1.04
10237	Chlorobenzene	108-90-7	N.D.	1	7	1.04
10237	Chloroethane	75-00-3	N.D.	3	7	1.04
10237	Chloroform	67-66-3	N.D.	1	7	1.04
10237	Chloromethane	74-87-3	N.D.	3	7	1.04
10237	Cyclohexane	110-82-7	N.D.	1	7	1.04
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	3	7	1.04
10237	Dibromochloromethane	124-48-1	N.D.	1	7	1.04
10237	1,2-Dibromoethane	106-93-4	N.D.	1	7	1.04
10237	1,2-Dichlorobenzene	95-50-1	N.D.	1	7	1.04
10237	1,3-Dichlorobenzene	541-73-1	N.D.	1	7	1.04
10237	1,4-Dichlorobenzene	106-46-7	N.D.	1	7	1.04
10237	Dichlorodifluoromethane	75-71-8	N.D.	3	7	1.04
10237	1,1-Dichloroethane	75-34-3	N.D.	1	7	1.04
10237	1,2-Dichloroethane	107-06-2	N.D.	1	7	1.04
10237	1,1-Dichloroethene	75-35-4	N.D.	1	7	1.04
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	1	7	1.04
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	1	7	1.04
10237	1,2-Dichloropropane	78-87-5	N.D.	1	7	1.04
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	7	1.04
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	7	1.04
10237	Ethylbenzene	100-41-4	N.D.	1	7	1.04
10237	Freon 113	76-13-1	N.D.	3	13	1.04
10237	2-Hexanone	591-78-6	N.D.	4	13	1.04
10237	Isopropylbenzene	98-82-8	N.D.	1	7	1.04
10237	Methyl Acetate	79-20-9	N.D.	3	7	1.04
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.7	7	1.04
10237	4-Methyl-2-pentanone	108-10-1	N.D.	4	13	1.04
10237	Methylcyclohexane	108-87-2	N.D.	1	7	1.04
10237	Methylene Chloride	75-09-2	N.D.	3	7	1.04
10237	Styrene	100-42-5	N.D.	1	7	1.04
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	7	1.04
10237	Tetrachloroethene	127-18-4	N.D.	1	7	1.04
10237	Toluene	108-88-3	N.D.	1	7	1.04
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	7	1.04
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	7	1.04
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	7	1.04
10237	Trichloroethene	79-01-6	N.D.	1	7	1.04
10237	Trichlorofluoromethane	75-69-4	N.D.	3	7	1.04
10237	Vinyl Chloride	75-01-4	N.D.	1	7	1.04
10237	Xylene (Total)	1330-20-7	N.D.	1	7	1.04
Pesticides/PCBs	SW-846 8082		ug/kg	ug/kg	ug/kg	
10736	PCB-1016	12674-11-2	N.D.	4.6	22	1

*=This limit was used in the evaluation of the final result

Sample Description: B-1-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093389
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 10:30 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY124 SDG#: PYM01-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs			SW-846 8082	ug/kg	ug/kg	
10736	PCB-1221	11104-28-2	N.D.	5.8	22	1
10736	PCB-1232	11141-16-5	N.D.	10	22	1
10736	PCB-1242	53469-21-9	N.D.	4.2	22	1
10736	PCB-1248	12672-29-6	N.D.	4.2	22	1
10736	PCB-1254	11097-69-1	N.D.	4.2	22	1
10736	PCB-1260	11096-82-5	25	6.2	22	1
GC Miscellaneous			SW-846 8015B	mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.	5.1	15	1
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	116	0.716	2.47	1
06946	Barium	7440-39-3	681	0.413	3.09	5
06949	Cadmium	7440-43-9	0.588 J	0.0531	0.617	1
06951	Chromium	7440-47-3	22.6	0.121	1.85	1
06955	Lead	7439-92-1	25.2	0.395	1.85	1
06936	Selenium	7782-49-2	7.24	1.02	2.47	1
06966	Silver	7440-22-4	N.D.	0.148	0.617	1
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0696 J	0.0126	0.126	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	22.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 17:49	Angela D Sneeringer	1.04
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/16/2015 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/16/2015 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/16/2015 10:30	Client Supplied	1
10736	PCBs in Soil (microwave)	SW-846 8082	1	152950013A	10/27/2015 07:28	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: B-1-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093389
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 10:30 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY124 SDG#: PYM01-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10497	PCB Microwave Soil Extraction	SW-846 3546	1	152950013A	10/23/2015 08:30	Jessica M Velez	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 17:11	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/23/2015 04:03	Tara L Snyder	5
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:30	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:29	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: B-8-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093390
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY824 SDG#: PYM01-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	20	J	7	21	0.84
10237	Benzene	71-43-2	N.D.		0.5	5	0.84
10237	Bromodichloromethane	75-27-4	N.D.		1	5	0.84
10237	Bromoform	75-25-2	N.D.		1	5	0.84
10237	Bromomethane	74-83-9	N.D.		2	5	0.84
10237	2-Butanone	78-93-3	N.D.		4	11	0.84
10237	Carbon Disulfide	75-15-0	N.D.		1	5	0.84
10237	Carbon Tetrachloride	56-23-5	N.D.		1	5	0.84
10237	Chlorobenzene	108-90-7	N.D.		1	5	0.84
10237	Chloroethane	75-00-3	N.D.		2	5	0.84
10237	Chloroform	67-66-3	N.D.		1	5	0.84
10237	Chloromethane	74-87-3	N.D.		2	5	0.84
10237	Cyclohexane	110-82-7	N.D.		1	5	0.84
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	5	0.84
10237	Dibromochloromethane	124-48-1	N.D.		1	5	0.84
10237	1,2-Dibromoethane	106-93-4	N.D.		1	5	0.84
10237	1,2-Dichlorobenzene	95-50-1	N.D.		1	5	0.84
10237	1,3-Dichlorobenzene	541-73-1	N.D.		1	5	0.84
10237	1,4-Dichlorobenzene	106-46-7	N.D.		1	5	0.84
10237	Dichlorodifluoromethane	75-71-8	N.D.		2	5	0.84
10237	1,1-Dichloroethane	75-34-3	N.D.		1	5	0.84
10237	1,2-Dichloroethane	107-06-2	N.D.		1	5	0.84
10237	1,1-Dichloroethene	75-35-4	N.D.		1	5	0.84
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	5	0.84
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	5	0.84
10237	1,2-Dichloropropane	78-87-5	N.D.		1	5	0.84
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	0.84
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	0.84
10237	Ethylbenzene	100-41-4	N.D.		1	5	0.84
10237	Freon 113	76-13-1	N.D.		2	11	0.84
10237	2-Hexanone	591-78-6	N.D.		3	11	0.84
10237	Isopropylbenzene	98-82-8	N.D.		1	5	0.84
10237	Methyl Acetate	79-20-9	N.D.		2	5	0.84
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	5	0.84
10237	4-Methyl-2-pentanone	108-10-1	N.D.		3	11	0.84
10237	Methylcyclohexane	108-87-2	N.D.		1	5	0.84
10237	Methylene Chloride	75-09-2	N.D.		2	5	0.84
10237	Styrene	100-42-5	N.D.		1	5	0.84
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	0.84
10237	Tetrachloroethene	127-18-4	N.D.		1	5	0.84
10237	Toluene	108-88-3	N.D.		1	5	0.84
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.		1	5	0.84
10237	1,1,1-Trichloroethane	71-55-6	N.D.		1	5	0.84
10237	1,1,2-Trichloroethane	79-00-5	N.D.		1	5	0.84
10237	Trichloroethene	79-01-6	N.D.		1	5	0.84
10237	Trichlorofluoromethane	75-69-4	N.D.		2	5	0.84
10237	Vinyl Chloride	75-01-4	N.D.		1	5	0.84
10237	Xylene (Total)	1330-20-7	N.D.		1	5	0.84
GC Miscellaneous	SW-846 8015B		mg/kg		mg/kg	mg/kg	
10941	TPH-DRO soil C10-C28 microwave	n.a.	N.D.		5.0	15	1

*=This limit was used in the evaluation of the final result

Sample Description: B-8-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093390
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY824 SDG#: PYM01-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals			SW-846 6010B	mg/kg	mg/kg	
06935	Arsenic	7440-38-2	22.4	0.725	2.50	1
06946	Barium	7440-39-3	103	0.0838	0.625	1
06949	Cadmium	7440-43-9	0.526 J	0.0538	0.625	1
06951	Chromium	7440-47-3	30.6	0.123	1.88	1
06955	Lead	7439-92-1	53.5	0.400	1.88	1
06936	Selenium	7782-49-2	3.49	1.04	2.50	1
06966	Silver	7440-22-4	N.D.	0.150	0.625	1
			SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.0460 J	0.0122	0.122	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	20.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL VOCs 4.3 8260B	SW-846 8260B	1	X152931AA	10/20/2015 18:12	Angela D Sneringer	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201529039141	10/16/2015 11:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201529039141	10/16/2015 11:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201529039141	10/16/2015 11:15	Client Supplied	1
10941	TPH-DRO soil C10-C28 microwave	SW-846 8015B	1	152960028A	10/26/2015 17:56	Thomas C Wildermuth	1
10942	Microwave Extraction-DRO soils	SW-846 3546	1	152960028A	10/24/2015 08:35	Olivia Arosemena	1
06935	Arsenic	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06946	Barium	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06949	Cadmium	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06955	Lead	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06936	Selenium	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
06966	Silver	SW-846 6010B	1	152925708002	10/22/2015 02:33	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	152945711004	10/23/2015 07:31	Damary Valentin	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	152925708002	10/20/2015 09:26	Christopher M Klumpp	1

*=This limit was used in the evaluation of the final result

Sample Description: B-8-2-4 Grab Soil
Potomac Yard Metro Station, VA

LL Sample # SW 8093390
LL Group # 1601713
Account # 10303

Project Name: Potomac Yard Metro Station

Collected: 10/16/2015 11:15 by BM

AECOM Environment
3101 Wilson Boulevard
Suite 900
Arlington VA

Submitted: 10/16/2015 17:40

Reported: 11/16/2015 11:45

PY824 SDG#: PYM01-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05711	Hg-SW, 7471A - U3	SW-846 7471A modified	1	152945711004	10/22/2015 13:50	Christopher M Klumpp	1
00111	Moisture	SM 2540 G-1997	1	15293820004B	10/20/2015 20:53	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: AECOM Environment
Reported: 11/16/2015 11:45

Group Number: 1601713

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: X152931AA	Sample number(s): 8093379,8093381-8093384,8093386,8093388-8093390								
Acetone	N.D.	7.	20	ug/kg	92	88	46-139	4	30
Benzene	N.D.	0.5	5	ug/kg	96	95	80-120	2	30
Bromodichloromethane	N.D.	1.	5	ug/kg	88	86	75-120	2	30
Bromoform	N.D.	1.	5	ug/kg	79	75	64-120	5	30
Bromomethane	N.D.	2.	5	ug/kg	70	70	21-192	0	30
2-Butanone	N.D.	4.	10	ug/kg	81	77	54-129	5	30
Carbon Disulfide	1	J	1.	ug/kg	111	105	60-120	5	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	85	82	69-130	4	30
Chlorobenzene	N.D.	1.	5	ug/kg	95	93	80-120	2	30
Chloroethane	N.D.	2.	5	ug/kg	78	77	21-185	1	30
Chloroform	N.D.	1.	5	ug/kg	94	92	80-120	2	30
Chloromethane	N.D.	2.	5	ug/kg	77	75	56-120	2	30
Cyclohexane	N.D.	1.	5	ug/kg	90	86	58-120	4	30
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/kg	79	79	59-122	0	30
Dibromochloromethane	N.D.	1.	5	ug/kg	87	84	77-120	4	30
1,2-Dibromoethane	N.D.	1.	5	ug/kg	95	93	80-120	2	30
1,2-Dichlorobenzene	N.D.	1.	5	ug/kg	94	93	80-120	1	30
1,3-Dichlorobenzene	N.D.	1.	5	ug/kg	93	92	80-120	1	30
1,4-Dichlorobenzene	N.D.	1.	5	ug/kg	95	92	80-120	3	30
Dichlorodifluoromethane	N.D.	2.	5	ug/kg	73	68	28-131	7	30
1,1-Dichloroethane	N.D.	1.	5	ug/kg	90	89	77-120	1	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	89	89	77-130	0	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	97	94	73-129	3	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	99	97	80-120	2	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	100	100	79-122	1	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	94	93	76-120	0	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	87	84	74-120	3	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	85	83	76-120	3	30
Ethylbenzene	N.D.	1.	5	ug/kg	94	93	80-120	2	30
Freon 113	N.D.	2.	10	ug/kg	95	92	54-123	3	30
2-Hexanone	N.D.	3.	10	ug/kg	76	73	47-133	5	30
Isopropylbenzene	N.D.	1.	5	ug/kg	96	93	76-120	3	30
Methyl Acetate	N.D.	2.	5	ug/kg	86	83	61-144	3	30
Methyl Tertiary Butyl Ether	N.D.	0.5	5	ug/kg	93	91	72-120	2	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	78	75	57-123	4	30
Methylcyclohexane	N.D.	1.	5	ug/kg	90	88	59-120	2	30
Methylene Chloride	N.D.	2.	5	ug/kg	96	94	76-122	2	30
Styrene	N.D.	1.	5	ug/kg	91	88	76-120	2	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	93	91	67-121	3	30
Tetrachloroethene	N.D.	1.	5	ug/kg	94	89	78-120	5	30

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: AECOM Environment

Group Number: 1601713

Reported: 11/16/2015 11:45

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Toluene	N.D.	1.	5	ug/kg	98	95	80-120	3	30
1,2,4-Trichlorobenzene	N.D.	1.	5	ug/kg	87	86	60-120	1	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	89	87	59-136	3	30
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	95	92	80-120	3	30
Trichloroethene	N.D.	1.	5	ug/kg	98	95	80-120	3	30
Trichlorofluoromethane	N.D.	2.	5	ug/kg	78	76	58-133	3	30
Vinyl Chloride	N.D.	1.	5	ug/kg	81	80	59-120	1	30
Xylene (Total)	N.D.	1.	5	ug/kg	95	93	80-120	2	30

Batch number: X152942AA

Sample number(s): 8093385

Acetone	N.D.	7.	20	ug/kg	90	89	46-139	2	30
Benzene	N.D.	0.5	5	ug/kg	100	101	80-120	0	30
Bromodichloromethane	N.D.	1.	5	ug/kg	91	91	75-120	1	30
Bromoform	N.D.	1.	5	ug/kg	81	82	64-120	1	30
Bromomethane	N.D.	2.	5	ug/kg	72	74	21-192	3	30
2-Butanone	N.D.	4.	10	ug/kg	82	82	54-129	0	30
Carbon Disulfide	N.D.	1.	5	ug/kg	115	115	60-120	0	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	95	95	69-130	1	30
Chlorobenzene	N.D.	1.	5	ug/kg	98	99	80-120	0	30
Chloroethane	N.D.	2.	5	ug/kg	84	86	21-185	2	30
Chloroform	N.D.	1.	5	ug/kg	99	100	80-120	1	30
Chloromethane	N.D.	2.	5	ug/kg	75	78	56-120	3	30
Cyclohexane	N.D.	1.	5	ug/kg	93	93	58-120	1	30
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/kg	80	81	59-122	2	30
Dibromochloromethane	N.D.	1.	5	ug/kg	89	89	77-120	0	30
1,2-Dibromoethane	N.D.	1.	5	ug/kg	97	98	80-120	0	30
1,2-Dichlorobenzene	N.D.	1.	5	ug/kg	98	99	80-120	1	30
1,3-Dichlorobenzene	N.D.	1.	5	ug/kg	98	100	80-120	1	30
1,4-Dichlorobenzene	N.D.	1.	5	ug/kg	100	100	80-120	0	30
Dichlorodifluoromethane	N.D.	2.	5	ug/kg	73	73	28-131	1	30
1,1-Dichloroethane	N.D.	1.	5	ug/kg	95	95	77-120	0	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	93	95	77-130	1	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	106	106	73-129	0	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	102	102	80-120	0	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	107	106	79-122	1	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	95	96	76-120	1	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	87	89	74-120	1	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	86	87	76-120	1	30
Ethylbenzene	N.D.	1.	5	ug/kg	98	98	80-120	0	30
Freon 113	N.D.	2.	10	ug/kg	104	105	54-123	0	30
2-Hexanone	N.D.	3.	10	ug/kg	77	76	47-133	1	30
Isopropylbenzene	N.D.	1.	5	ug/kg	99	99	76-120	0	30
Methyl Acetate	N.D.	2.	5	ug/kg	89	87	61-144	2	30
Methyl Tertiary Butyl Ether	N.D.	0.5	5	ug/kg	95	95	72-120	0	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	78	78	57-123	0	30
Methylcyclohexane	N.D.	1.	5	ug/kg	95	95	59-120	0	30
Methylene Chloride	N.D.	2.	5	ug/kg	101	100	76-122	1	30
Styrene	N.D.	1.	5	ug/kg	91	92	76-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	94	94	67-121	0	30
Tetrachloroethene	N.D.	1.	5	ug/kg	100	99	78-120	0	30
Toluene	N.D.	1.	5	ug/kg	101	101	80-120	0	30
1,2,4-Trichlorobenzene	N.D.	1.	5	ug/kg	89	89	60-120	0	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	94	93	59-136	1	30

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: AECOM Environment

Group Number: 1601713

Reported: 11/16/2015 11:45

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	96	96	80-120	1	30
Trichloroethene	N.D.	1.	5	ug/kg	102	102	80-120	0	30
Trichlorofluoromethane	N.D.	2.	5	ug/kg	85	86	58-133	1	30
Vinyl Chloride	N.D.	1.	5	ug/kg	80	84	59-120	4	30
Xylene (Total)	N.D.	1.	5	ug/kg	98	98	80-120	0	30

Batch number: 152950013A	Sample number(s): 8093379,8093383,8093385-8093386,8093388-8093389
PCB-1016	N.D. 3.6 17 ug/kg 102 76-121
PCB-1221	N.D. 4.6 17 ug/kg
PCB-1232	N.D. 8.0 17 ug/kg
PCB-1242	N.D. 3.3 17 ug/kg
PCB-1248	N.D. 3.3 17 ug/kg
PCB-1254	N.D. 3.3 17 ug/kg
PCB-1260	N.D. 4.9 17 ug/kg 108 79-130

Batch number: 152960028A	Sample number(s): 8093379,8093381-8093386,8093388-8093390
TPH-DRO soil C10-C28 microwave	N.D. 4.0 12 mg/kg 86 74-117

Batch number: 152925708002	Sample number(s): 8093379,8093381-8093386,8093388-8093390
Arsenic	N.D. 0.580 2.00 mg/kg 108 80-120
Barium	N.D. 0.0670 0.500 mg/kg 109 80-120
Cadmium	N.D. 0.0430 0.500 mg/kg 108 80-120
Chromium	N.D. 0.0980 1.50 mg/kg 103 80-120
Lead	N.D. 0.320 1.50 mg/kg 112 80-120
Selenium	N.D. 0.830 2.00 mg/kg 108 80-120
Silver	N.D. 0.120 0.500 mg/kg 105 80-120

Batch number: 152945711004	Sample number(s): 8093379,8093381-8093386,8093388-8093390
Mercury	N.D. 0.0100 0.100 mg/kg 96 80-120

Batch number: 153145705001	Sample number(s): 8093380,8093387
Arsenic	0.0073 J 0.0070 0.0200 mg/l 117 80-120
Barium	0.00091 J 0.00030 0.0050 mg/l 98 80-120
Cadmium	N.D. 0.00030 0.0050 mg/l 104 80-120
Chromium	N.D. 0.0015 0.0150 mg/l 107 80-120
Lead	N.D. 0.0051 0.0150 mg/l 99 80-120
Selenium	N.D. 0.0082 0.0200 mg/l 120 80-120
Silver	N.D. 0.0014 0.0050 mg/l 104 80-120

Batch number: 153145713002	Sample number(s): 8093380,8093387
Mercury	N.D. 0.00005 0.00020 mg/l 96 80-120

Batch number: 15293820004B	Sample number(s): 8093379,8093381-8093386,8093388-8093390
Moisture	100 99-101

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: AECOM Environment
Reported: 11/16/2015 11:45

Group Number: 1601713

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 152950013A	Sample number(s): 8093379,8093383,8093385-8093386,8093388-8093389 UNSPK: P086793								
PCB-1016	93	99	76-121	6	50				
PCB-1260	80	83	79-130	4	50				
Batch number: 152960028A	Sample number(s): 8093379,8093381-8093386,8093388-8093390 UNSPK: P089996 BKG: P089996								
TPH-DRO soil C10-C28 microwave	88		74-117			94	76	22*	20
Batch number: 152925708002	Sample number(s): 8093379,8093381-8093386,8093388-8093390 UNSPK: P083789 BKG: P083789								
Arsenic	106	105	75-125	0	20	2.08	1.79 J	15 (1)	20
Barium	114	108	75-125	4	20	98.4	106	7	20
Cadmium	104	104	75-125	0	20	0.299 J	0.330 J	10 (1)	20
Chromium	119	114	75-125	3	20	6.69	7.89	16 (1)	20
Lead	116	112	75-125	2	20	14.7	14.7	0	20
Selenium	103	103	75-125	1	20	2.20	2.96	29* (1)	20
Silver	96	90	75-125	6	20	N.D.	N.D.	0 (1)	20
Batch number: 152945711004	Sample number(s): 8093379,8093381-8093386,8093388-8093390 UNSPK: 8093379 BKG: 8093379								
Mercury	103	95	80-120	4	20	0.0392 J	0.0451 J	14 (1)	20
Batch number: 153145705001	Sample number(s): 8093380,8093387 UNSPK: P107830 BKG: P107830								
Arsenic	106	105	75-125	1	20	0.0113 J	0.0127 J	11 (1)	20
Barium	92	92	75-125	0	20	0.752	0.754	0	20
Cadmium	93	92	75-125	1	20	0.0101	0.0101	0 (1)	20
Chromium	93	93	75-125	0	20	0.0051 J	0.0052 J	2 (1)	20
Lead	88	88	75-125	0	20	0.0117 J	0.0119 J	1 (1)	20
Selenium	112	111	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	47*	41*	75-125	14	20	N.D.	N.D.	0 (1)	20
Batch number: 153145713002	Sample number(s): 8093380,8093387 UNSPK: P107830 BKG: P107830								
Mercury	88	88	80-120	1	20	N.D.	N.D.	0 (1)	20
Batch number: 15293820004B	Sample number(s): 8093379,8093381-8093386,8093388-8093390 BKG: 8093388								
Moisture						18.8	17.8	6*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL VOCs 4.3 8260B

Batch number: X152931AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8093379	100	109	99	96
8093381	108	112	105	89
8093382	100	107	102	95
8093383	101	105	101	96

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: AECOM Environment
Reported: 11/16/2015 11:45

Group Number: 1601713

Surrogate Quality Control

8093384	104	108	106	84
8093386	114	115	124	72
8093388	99	105	98	97
8093389	101	107	99	94
8093390	100	105	100	94
Blank	98	103	99	98
LCS	98	101	100	99
LCSD	98	101	99	99
Limits:	50-141	54-135	52-141	50-131

Analysis Name: TCL VOCs 4.3 8260B
Batch number: X152942AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8093385	105	107	106	81
Blank	99	100	98	96
LCS	98	100	99	97
LCSD	98	100	98	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: PCBs in Soil (microwave)
Batch number: 152950013A

	Tetrachloro-m-xylene	Decachlorobiphenyl
8093379	101	87
8093383	102	91
8093385	86	90
8093386	61	64
8093388	110	76
8093389	96	77
Blank	108	100
LCS	109	101
MS	95	74
MSD	104	84
Limits:	53-140	45-143

Analysis Name: TPH-DRO soil C10-C28 microwave
Batch number: 152960028A

	Orthoterphenyl
8093379	87
8093381	68
8093382	67
8093383	61
8093384	80
8093385	66
8093386	29*
8093388	82
8093389	88
8093390	83
Blank	94
DUP	92
LCS	82
MS	84
Limits:	54-145

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: AECOM Environment
Reported: 11/16/2015 11:45

Group Number: 1601713

Surrogate Quality Control

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

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Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 11487 Group # 1601713 Sample # 8093379-90

COC # 389611

Client Information				Matrix			Analysis Requested										For Lab Use Only																																																																	
Client: <u>AECOM</u>		Acct. #:		Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other: _____	Total # of Containers <u>RCRA Metals</u> <u>TPH-DRO</u> <u>VOCs</u> <u>PCBs</u>	Preservation Codes										FSC: _____																																																																		
Project Name/#: <u>Potomac Yard Metro Station</u>		PWSID #:				<table border="1" style="width:100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>																																																																											SCR#: <u>178602?</u>	
Project Manager: <u>Brendan McGuinness</u>		P.O. #:		Remarks																																																																														
Sampler: <u>Brendan McGuinness</u>		Quote #:		<u>RUSH</u> <u>5 DAY TAT.</u>																																																																														
State where samples were collected: <u>VA</u>		For Compliance: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																																																																																
Sample Identification		Collected		Grab	Composite	Soil <input checked="" type="checkbox"/>	Water	Other:	Total # of Containers	RCRA Metals	TPH-DRO	VOCs	PCBs																																																																					
Date	Time																																																																																	
<u>B-1-2-4</u>	<u>10.16.15</u>	<u>1030</u>		<u>X</u>					<u>7</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>																																																																					
<u>B-8-2-4</u>	<u>10.16.15</u>	<u>11:15</u>		<u>X</u>					<u>6</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>																																																																						
Turnaround Time (TAT) Requested (please circle) Standard _____ <u>Rush</u> _____ (Rush TAT is subject to laboratory approval and surcharge.)				Relinquished by <u>Brendan McGuinness</u>		Date <u>10.16.15</u>	Time <u>1300</u>	Received by _____		Date _____	Time _____																																																																							
Date results are needed: <u>5 DAY TAT</u>				Relinquished by _____		Date _____	Time _____	Received by _____		Date _____	Time _____																																																																							
E-mail address: <u>brendan.mcguinness@aecom.com</u>				Relinquished by _____		Date _____	Time _____	Received by _____		Date _____	Time _____																																																																							
Data Package Options (circle if required) Type I (EPA Level 3 Equivalent/non-CLP) _____ Type VI (Raw Data Only) _____ Type III (Reduced non-CLP) _____ TX TRRP-13 _____ NYSDEC Category A or B _____ MA MCP _____ CT RCP _____				Relinquished by _____		Date _____	Time _____	Received by _____		Date <u>10/16/15</u>	Time <u>1740</u>																																																																							
EDD Required? Yes No _____ If yes, format: _____				Relinquished by Commercial Carrier:		UPS _____ FedEx _____ Other _____		Temperature upon receipt <u>27-13°C</u>																																																																										
Site-Specific QC (MS/MSD/Dup)? Yes No _____ (If yes, indicate QC sample and submit triplicate sample volume.)				Relinquished by _____		Date _____	Time _____	Received by _____		Date _____	Time _____																																																																							

Client: AECOM

Delivery and Receipt Information

Delivery Method: ELLE Courier Arrival Timestamp: 10/16/2015 17:40
 Number of Packages: 2 Number of Projects: 1
 State/Province of Origin: VA

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

Unpacked by Jordan Woods (6698) at 21:37 on 10/16/2015

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.3	DT	Wet	Y	Bagged	N
2	DT146	0.7	DT	Wet	Y	Bagged	N

Container Quantity Discrepancy Details

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
B-6 - 3-5	8	7	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m³	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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APPENDIX C:

PHOTOGRAPHS OF FIELD WORK



Photo 1. Remote control DPT drill rig mobilizing to boring sites from Potomac Greens.



Photo 2. Very moist to saturated fly ash in sample liner at SB-6.



Photo 3. DPT drill rig located at SB-7.



Photo 4. DPT drill rig located at SB-4.



Photo 5. Fly ash in sample liner at 2 feet below ground at SB-4.



Photo 6. DPT drill rig at SB-2 at former oil/water separator pond.



Photo 7. View of DPT drill rig on SB-2 at former oil/water separator.



Photo 8. Close-up of fly ash fill at soil boring SB-2.



Photo 9. Close-up of petroleum impacted soil and ballast at 7.5 to 8 feet above original ground surface indicated by mottled clay in liner above.

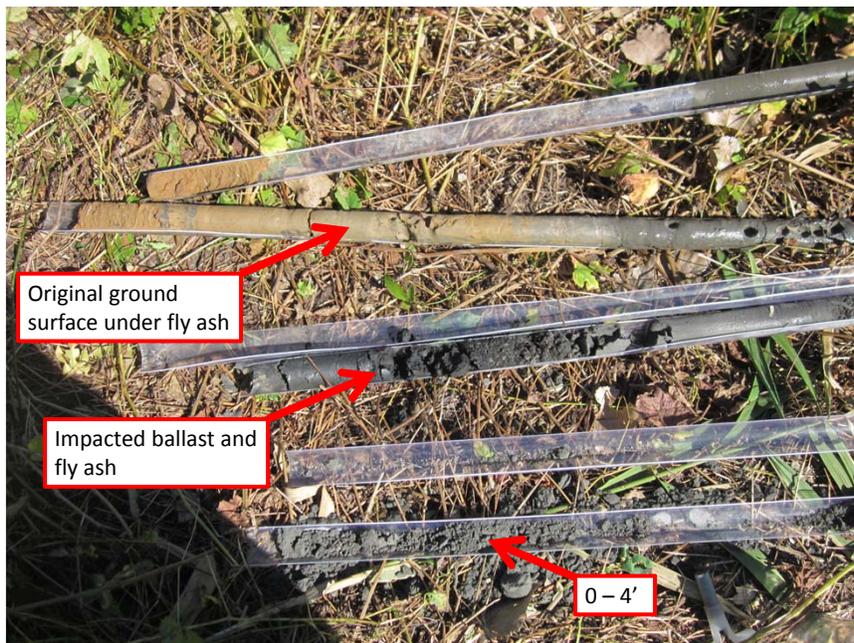


Photo 10. Grey fly ash with some ballast grades into brown mottled clay of original ground surface at 8 to 12 feet below ground at SB-2.