



**GROUNDWATER SAMPLING REPORT
FOR THE MARCH 2016 SAMPLING EVENT
PHILADELPHIA GAS WORKS
PASSYUNK FACILITY
3100 WEST PASSYUNK AVENUE
PHILADELPHIA, PENNSYLVANIA**

Leidos Project 307070.00.0000.1000.0100

Prepared for:

**Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, PA 19122**

April 2016

Groundwater Sampling Report
for the March 2016 Sampling Event
Philadelphia Gas Works
Passyunk Facility
3100 West Passyunk Avenue
Philadelphia, Pennsylvania

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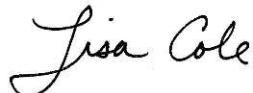
Prepared by:

Leidos, Inc.
180 Gordon Drive, Suite 109
Exton, PA 19341
(610) 594-3630

April 2016



Prepared by:



Lisa Cole
Staff Geologist

Reviewed by:



Matthew D. Machusick, P.G.
Project Manager

Leidos, Inc.

180 Gordon Drive, Suite 109 / Exton, PA 19341 / 610.594.3630

leidos.com

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1.0 INTRODUCTION

Leidos, Inc. (Leidos) has prepared this Groundwater Sampling Report (Report) for the Philadelphia Gas Works (PGW) to summarize and document the March 2016 monitoring well gauging, groundwater sampling, and related tasks conducted at the PGW Passyunk Facility (Site). The Site is located at 3100 West Passyunk Avenue, Philadelphia, Pennsylvania (**Figure 1**). **Figure 2** shows the groundwater monitoring well locations with reference to an aerial photograph.

1.1 Site Background

The Site is approximately 64 acres and is located in an area of mixed industrial, commercial, and residential uses. The Site is bounded by Passyunk Avenue to the south; Philadelphia Energy Solutions, LLC (PES) property to the north; the Schuylkill River and PES property to the west; and residential/commercial properties to the east. The Site has been owned and operated by PGW for over 100 years and has been used to manufacture, process, store, and distribute natural gas. The Site is currently used for liquefied natural gas (LNG) storage, vaporization, and gas distribution. In addition, the Site includes laboratory facilities, fleet maintenance, fueling, and parking.

Previous investigations by Weston Solutions, Inc. (Weston) and others have identified the presence of volatile and semi-volatile organic compounds (VOCs and SVOCs) and metals in soil and groundwater at concentrations above Pennsylvania Department of Environmental Protection (PADEP) medium-specific concentrations (MSC). In addition, phase-separated hydrocarbons (product) have been detected in groundwater, and PGW is currently operating a product recovery system.

The Site is in the process of voluntary remediation and monitoring in general accordance with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2). As part of the process, PGW is seeking to determine site-specific cleanup goals for the Site. The current investigation is intended to assess the contaminant concentrations at pertinent Site wells.

1.2 Site Topographic and Hydrogeologic Characteristics

Site topography is generally flat with a gentle slope toward the Schuylkill River. Ground surface elevations are between approximately 20 to 40 feet above mean sea level (ft amsl). The Site is located in the Atlantic Coastal Plain physiographic province and is underlain by the Trenton Gravel Formation. Site investigations observed a soil profile (0 to 10 feet [ft]) comprised of fill material, sandy to silty sediments, and soils. Deeper sediments consist of unconsolidated, interbedded, gravel, sand, silt, and clay.

Recent depth-to-groundwater measurements range from approximately 21 to 33 feet below the top of the inner casing (ft TIC) with resulting groundwater elevations of approximately 0.5 to 11 ft amsl. Data indicate the hydraulic gradient in the shallow aquifer generally trends southwest toward the Schuylkill River. Data from the deeper wells indicate the hydraulic gradient in the deeper aquifer trends southwest toward the Schuylkill River.

1.3 Scope of Work

This Report presents and summarizes the groundwater gauging and groundwater sampling event conducted between March 3 and 18, 2016.

2.0 METHODOLOGY

2.1 Monitoring Well Gauging

During groundwater sampling activities on March 2 and 3, 2016, Leidos gauged the depth to water at the following monitoring well network:

- MW-01D & MW-01S
- MW-02D & MW-02S
- MW-03D & MW-03S
- MW-04S
- MW-05S
- MW-06S
- MW-07S
- MW-10S
- MW-11S
- MW-12D & MW-12S
- MW-42D & MW-42R

Wells with high historical concentrations of hydrocarbon contamination and/or wells with organic vapor odors were screened for product with an interphase probe. The depth to groundwater and total well depth were measured at each well with an electronic water level meter. Total depths were compared to historical data to determine whether well development was warranted. Well total depths and groundwater depths were recorded in field logbooks.

2.2 Groundwater Sampling

After monitoring and recording groundwater depth, the wells were purged and sampled via low-flow methodology in general accordance with the guidance provided in the PADEP Groundwater Monitoring Guidance Manual (2001) and the United States Environmental Protection Agency (USEPA) Region I Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (1996). Groundwater samples were submitted to Eurofins Lancaster Laboratories, LLC, for analysis of dissolved metals via USEPA Method SW-846 6010B/7000 Series, VOCs via USEPA Method SW-846 8260B, and SVOCs via USEPA Method SW-846 8270C. Quality assurance/quality control (QA/QC) samples included a duplicate sample, a rinse blank sample, and a trip blank sample. Monitoring well MW-03D was sampled on March 18, 2016, as the original sample from this well was misplaced.

2.3 Investigation-Derived Waste

Purge water derived from sampling was collected in 55-gallon drums and stored onsite pending future offsite disposal. Each drum was labeled with pertinent project details including date, contents, and generator contact information. The drums were placed on secondary containment with a capacity of approximately 110 percent total drum volume.

3.0 RESULTS

3.1 Monitoring Well Gauging

During the gauging event, product was not detected in any Site well. Measured total depths did not indicate the need for sediment removal and/or well development. **Table 1** below presents the results of the monitoring well gauging. Groundwater elevations and inferred elevation contours are presented for the shallow and deep aquifers on **Figures 3** and **4**. Field data collected during monitoring well gauging and sampling are included in **Appendix A**.

Table 1. Groundwater Elevations: March 2-3, 2016

Well ID	Easting	Northing	Top of Inner Casing Elevation (ft)	Depth to Water (ft TIC)	Total Depth (ft TIC)	Groundwater Elevation (ft)	Aquifer Zone
MW-01D	2,683,465.240	224,133.562	33.57	32.92	76.83	0.65	Deep
MW-01S	2,683,457.178	224,134.605	33.22	25.48	34.66	7.74	Shallow
MW-02D	2,683,917.577	224,285.832	35.16	33.08	82.70	2.08	Deep
MW-02S	2,683,927.594	224,288.315	35.23	25.65	35.45	9.58	Shallow
MW-03D	2,684,691.380	224,483.090	34.73	32.96	85.50	1.77	Deep
MW-03S	2,684,683.310	224,481.500	34.49	25.18	34.83	9.31	Shallow
MW-04S	2,685,043.870	224,934.393	31.34	22.44	36.32	8.90	Shallow
MW-05S	2,685,403.726	225,420.163	33.19	25.94	37.56	7.25	Shallow
MW-06S	2,685,347.530	224,948.150	32.09	23.89	33.35	8.20	Shallow
MW-07S	2,685,066.930	224,605.930	29.09	22.85	34.67	6.24	Shallow
MW-10S	2,685,131.701	225,178.850	33.62	24.85	33.48	8.77	Shallow
MW-11S	2,685,404.935	224,755.228	30.32	22.04	28.85	8.28	Shallow
MW-12D	2,685,290.315	224,520.078	30.07	28.08	75.65	1.99	Deep
MW-12S	2,685,295.012	224,520.765	29.85	21.56	33.10	8.29	Shallow
MW-42D	2,684,363.750	225,540.440	33.69	30.85	69.75	2.84	Deep
MW-42R	2,684,370.420	225,556.920	33.11	22.20	29.65	10.91	Shallow

Notes: Elevations are provided in feet above mean sea level (NAVD88)
Northing/Easting are provided in PA State Plane South feet (NAD83)

3.2 Groundwater Sampling

Results of groundwater sampling indicate benzene, toluene, ethylbenzene, and xylenes (BTEX), as well as several other VOCs and SVOCs, are present in multiple wells. Several metals were detected in Site wells including detections of arsenic, lead, and thallium at concentrations greater than applicable MSCs. Results of the groundwater sampling are presented in **Table 2** (VOCs), **Table 3** (SVOCs), and **Table 4** (metals). Copies of the laboratory results are included in **Appendix B**.

3.2.1 Volatile Organic Compounds

Samples contained detections of one or more of the following compounds: acetone, benzene, chloroform, 1,1-dichloroethane, cis-1,2-dichloroethene, ethylbenzene, toluene, trichloroethene, and total xylenes.

Several samples contained detections of compounds at concentrations greater than applicable MSCs.

Figure 5 presents the VOC detections above the MSCs for groundwater in nonresidential used aquifers.

Provided below is a summary of pertinent VOC analytical results:

- The samples from MW-02D, MW-03D, MW-05S, and MW-12D did not contain detections above the MSCs.
- **Benzene:**
 - The samples from MW-01D, MW-01S, MW-03S, MW-04S, MW-06S, MW-07S, MW-10S, MW-11S, and MW-12S contained benzene concentrations greater than the MSC for groundwater in nonresidential **non-used** aquifers (500 micrograms per liter [$\mu\text{g}/\text{L}$]) and nonresidential **used** aquifers (5 $\mu\text{g}/\text{L}$).
 - The samples from MW-02S, MW-42D, and MW-42R contained benzene concentrations greater than the MSC for groundwater in nonresidential **used** aquifers.
- **Ethylbenzene:** The samples from MW-03S, MW-04S, MW-06S, MW-07S, MW-10S, MW-12S, and MW-42R contained ethylbenzene concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (700 $\mu\text{g}/\text{L}$).
- **Toluene:** The samples from MW-04S, MW-06S, and MW-10S contained toluene concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (1,000 $\mu\text{g}/\text{L}$).
- **Xylenes:** The sample from MW-10S contained total xylene at a concentration of 18,000 $\mu\text{g}/\text{L}$, which is greater than the MSC for groundwater in nonresidential **used** aquifers (10,000 $\mu\text{g}/\text{L}$).

3.2.2 Semi-Volatile Organic Compounds

Multiple SVOCs were detected in the groundwater samples. Anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, and naphthalene were detected at concentrations greater than applicable MSCs. **Figure 6** presents the SVOC detections above the MSCs for groundwater in nonresidential **used** aquifers. Provided below is a summary of pertinent SVOC analytical results:

- Samples from MW-01D, MW-01S, MW-02D, MW-03D, MW-05S, MW-12D, and MW-42D did not contain detections above the MSCs.
- **Anthracene:** The sample collected from MW-10S contained a concentration (78 $\mu\text{g}/\text{L}$) greater than the MSC for groundwater in nonresidential **used** aquifers (66 $\mu\text{g}/\text{L}$).
- **Benzo(a)anthracene:**
 - The samples collected from MW-10S and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (3.6 $\mu\text{g}/\text{L}$).
 - The sample collected from MW-10S contained a concentration (38 $\mu\text{g}/\text{L}$) greater than the MSC for groundwater in nonresidential **non-used** aquifers (11 $\mu\text{g}/\text{L}$).

- **Benzo(a)pyrene:**
 - The samples from MW-10S and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (0.2 and 3.8 µg/L, respectively).
 - The samples from MW-02S, MW-03S, MW-04S, MW-06S, and MW-42R contained concentrations greater than the MSC for groundwater in nonresidential **used** aquifers.
- **Benzo(b)fluoranthene:** The samples from MW-04S, MW-10S, and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (1.2 µg/L for both).
- **Benzo(g,h,i)perylene:** The samples from MW-02S, MW-03S, MW-04S, MW-06S, MW-10S, MW-12S, and MW-42R contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (0.26 µg/L for both).
- **Benzo(k)fluoranthene:** The samples from MW-04S, MW-10S, and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (0.55 µg/L for both).
- **Chrysene:** The samples from MW-04S, MW-10S, and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (1.9 µg/L for both).
- **Dibenz(a,h)anthracene:** The samples from MW-10S and MW-12S contained concentrations greater than the MSC for groundwater in non-residential **used** and **non-used** aquifers (0.36 and 0.6 µg/L, respectively).
- **Indeno(1,2,3-cd)pyrene:** The sample from MW-10S contained a concentration (8 µg/L) greater than the MSC for groundwater in **used** aquifers (3.6 µg/L).
- **2-Methylnaphthalene:** The samples from MW-03S, MW-04S, MW-06S, MW-07S, MW-10S, and MW-12S contained concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (410 µg/L for both).
- **Naphthalene:** The samples from MW-02S, MW-03S, MW-04S, MW-06S, MW-07S, MW-10S, MW-11S, MW-12S, and MW-42R contained naphthalene concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (100 µg/L).

3.2.3 Metals

Arsenic, cadmium, chromium, copper, lead, nickel, silver, thallium, and zinc were detected in the samples. Arsenic, lead, and thallium were detected at concentrations above the nonresidential MSC for groundwater in **used** aquifers. Provided below is a summary of pertinent metals analytical results:

- The samples from MW-01D, MW-01S, MW-02D, MW-02S, MW-03S, MW-05S, MW-06S, MW-07S, MW-10S, and MW-11S did not contain detections above the MSCs.
- **Arsenic:** The samples collected from MW-04S, MW-12S, MW-42D, and MW-42R contained concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (0.01 milligrams per liter [mg/L]).
- **Lead:** The samples collected from MW-03D and MW-12D contained estimated concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (0.005 mg/L).

- **Thallium:** The sample collected from MW-03D contained an estimated concentration (0.0139 mg/L) greater than the MSC for groundwater in nonresidential **used** aquifers (0.002 mg/L).

3.3 Investigation-Derived Waste

Approximately 90 gallons of investigation-derived waste (IDW) fluids were produced during groundwater sampling at the Site. IDW was stored in two 55-gallon drums. The drums were placed on secondary containment with a capacity of approximately 110 percent total drum volume. Purge water from wells MW-01D, MW-01S, MW-03S, MW-04S, MW-06S, MW-07S, MW-10S, and MW-12S was segregated and placed in a 55-gallon drum inside of a drum over-pack. Purge water and IDW fluids from other wells were stored in separate 55-gallon drums.

4.0 CONCLUSIONS, RECOMMENDATIONS, AND FUTURE ACTIVITIES

4.1 Conclusions and Recommendations

Sample results indicate concentrations greater than applicable MSCs for VOCs, SVOCs, and dissolved metals at multiple wells. Based on the compounds and concentrations detected, it is likely that benzene will serve as the primary driver for regulatory closure of the groundwater concern. Of the VOCs detected, benzene has one of the lowest MSCs, and multiple samples exceeded the MSC for used aquifers and non-used aquifers. Furthermore, most of the wells with SVOCs and dissolved metals concentrations greater than MSCs also had benzene concentrations greater than the MSC.

The March 2016 analytical results are similar to previous sampling events with a few exceptions. Benzene concentrations at MW-06S and MW-11S have declined substantially since December 2015, while concentrations at MW-01S, MW-03S, and MW-04S have increased considerably. Ethylbenzene concentrations at MW-02S and MW-42R have declined since December 2015, while concentrations have increased slightly in most other wells. Naphthalene concentrations at MW-02S and MW-42R have declined substantially while concentrations in MW-10S and MW-11S have nearly doubled. Current metals analyses indicate arsenic and lead have shown a decline in frequency and concentration since December 2015, while thallium results show an increase in concentration in MW-03D.

Leidos recommends continued groundwater monitoring to establish long-term trends in contaminant concentrations.

4.2 Future Activities

The next quarterly sampling event is scheduled for June 2016. No additional activities are currently planned for this Site.

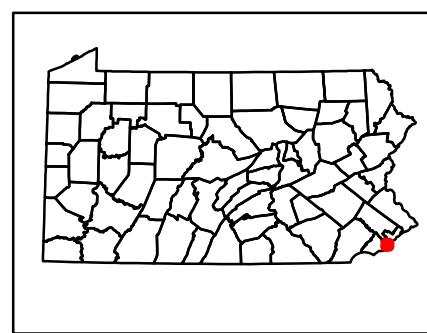
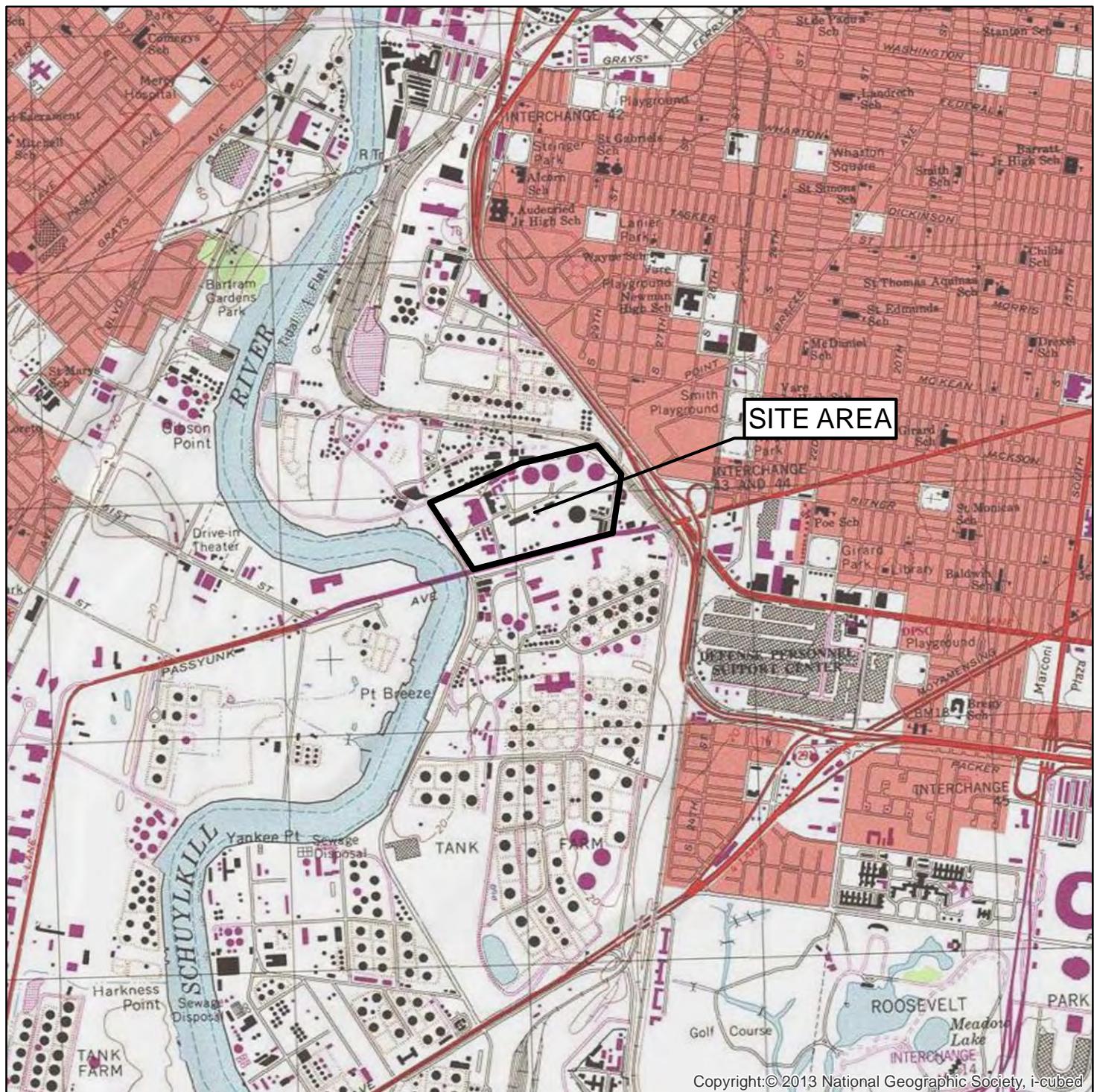
5.0 REFERENCES

Pennsylvania Department of Environmental Protection (PADEP) (2001). "Groundwater Monitoring Guidance Manual." PADEP. Document Number 383-3000-001.

United States Environmental Protection Agency (USEPA) (1996). "Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells." USEPA revision 2.



FIGURES



0 1,000 2,000 4,000
Feet



Philadelphia Gas Works Passyunk Property - Philadelphia, PA

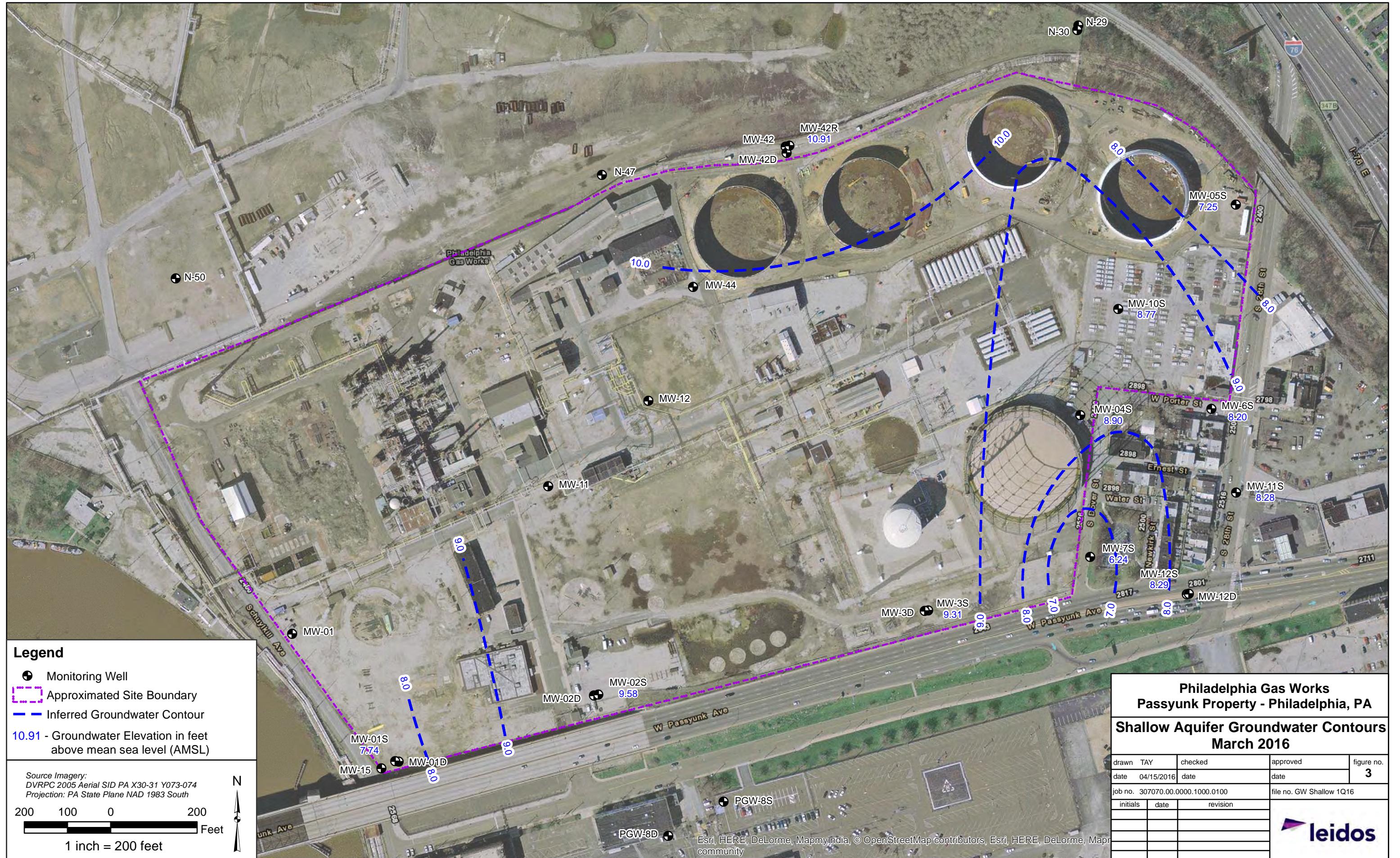
Site Location Map

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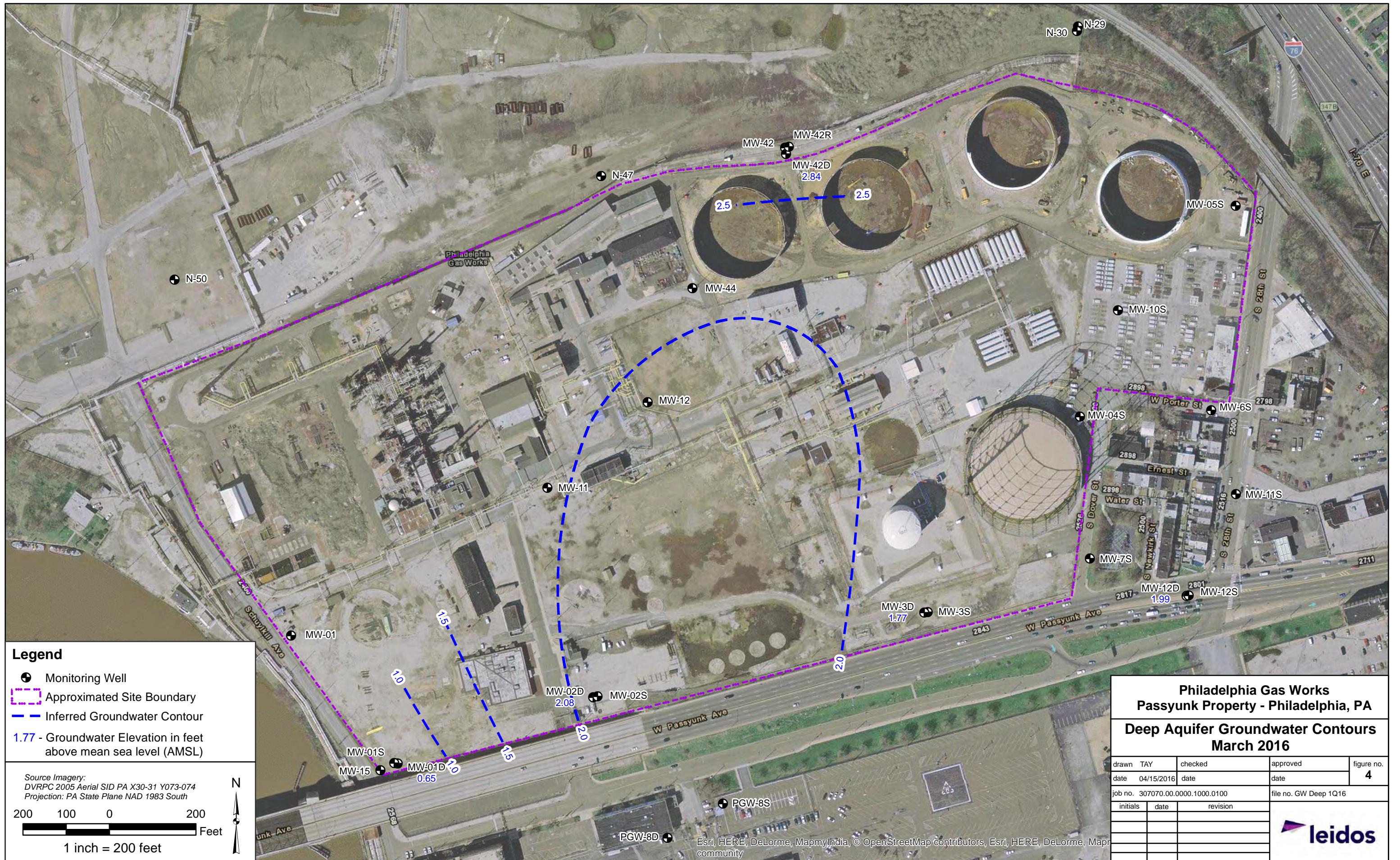
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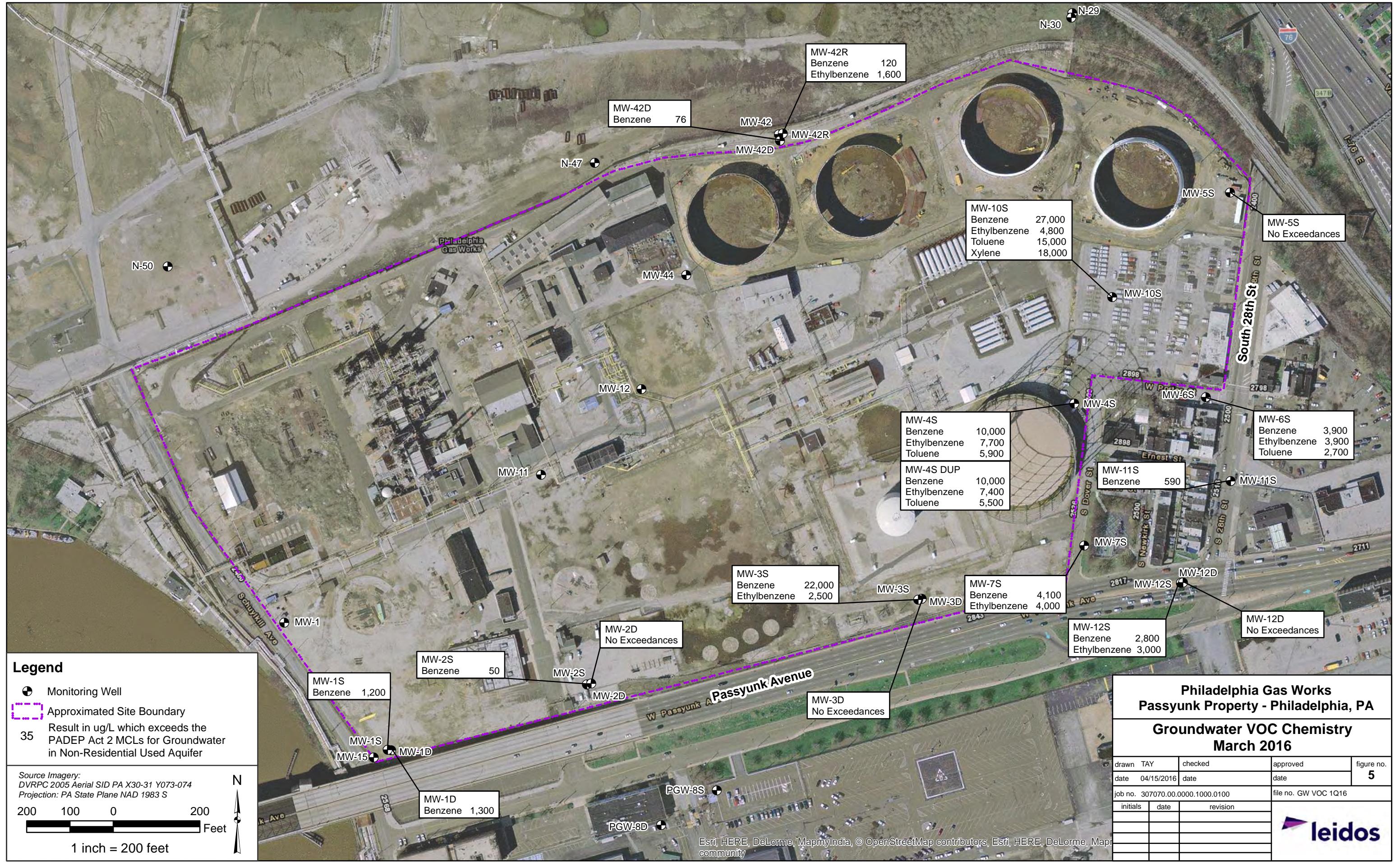




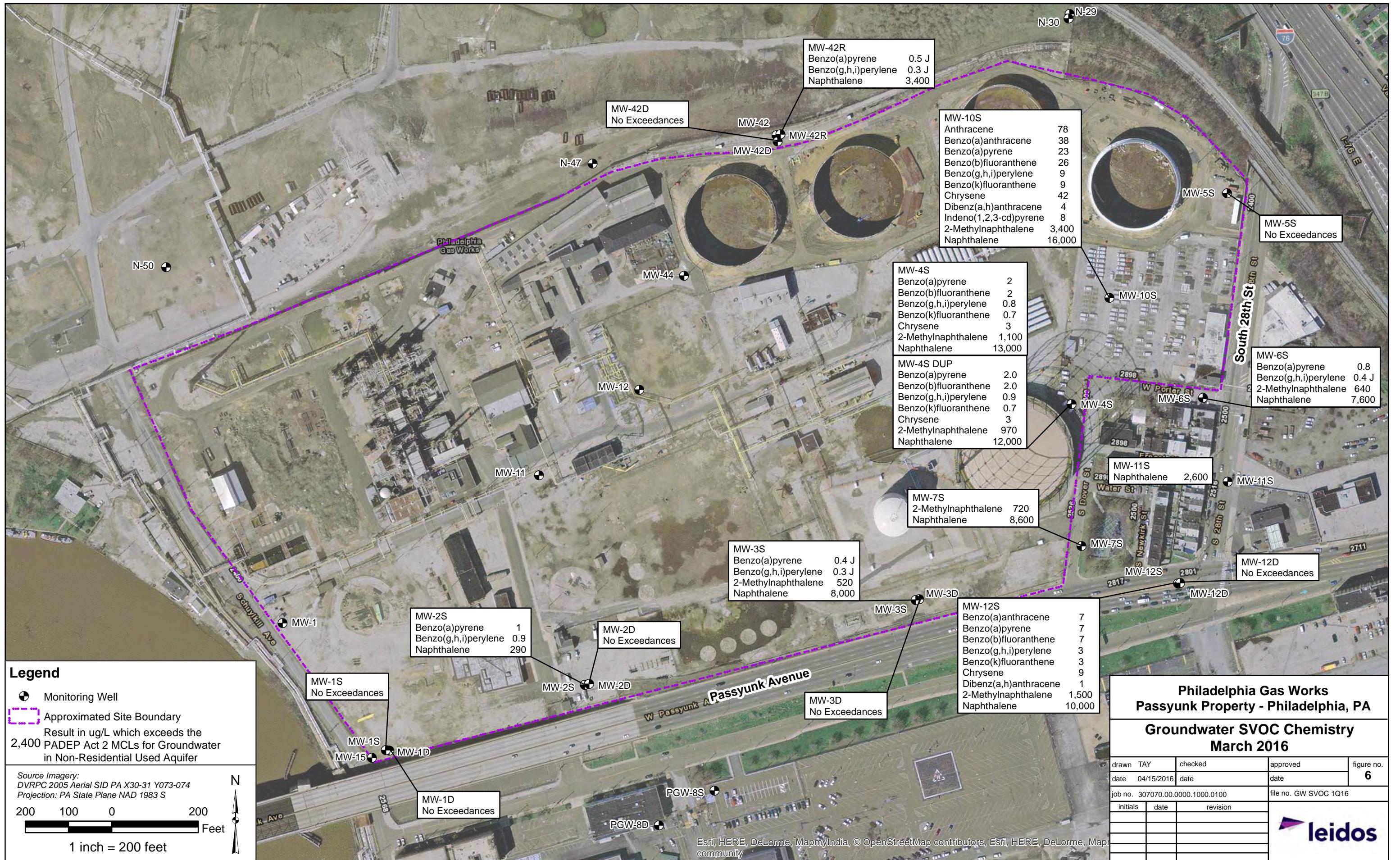


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TABLES

Leidos, Inc.

180 Gordon Drive, Suite 109 / Exton, PA 19341 / 610.594.3630

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Table 2
 Groundwater Sample Results
 Volatile Organic Compounds
 Philadelphia Gas Works - Passyunk Facility
 Philadelphia, Pennsylvania
 March 2, 3, 18, 2016

Sample ID	PADEP MSCs for Groundwater in Non-Residential Used Aquifer	PADEP MSCs for Groundwater in Non-Residential Non-Use Aquifer	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04S	MW-04S DUP	MW-05S	MW-06S	MW-07S	MW-10S	MW-11S	MW-12D	MW-12S	MW-42D	MW-42R	Rinse Blank	Trip Blank	
Acetone	92,000	920,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	80	N.D.	N.D.	
Benzene	5	500	1,300	1,200	N.D.	50	N.D.	22,000	10,000	10,000	4	3,900	4,100	27,000	590	N.D.	2,800	76	120	N.D.	N.D.	
Bromodichloromethane	80	80	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Bromoform	100	10,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Bromomethane	10	1,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
2-Butanone	4,000	400,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Carbon Disulfide	6,200	6,200	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Carbon Tetrachloride	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Chlorobenzene	100	10,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Chloroethane	900	90,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Chloroform	80	800	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1	N.D.	
Chloromethane	3	300	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Dibromochloromethane	100	10,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
1,1-Dichloroethane	160	1,600	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1	J	N.D.	N.D.	N.D.	N.D.	
1,2-Dichloroethane	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
1,1-Dichloroethene	7	70	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
cis-1,2-Dichloroethene	70	700	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	4	J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
trans-1,2-Dichloroethene	100	1,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
1,2-Dichloropropane	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
cis-1,3-Dichloropropene	26	2,600	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
trans-1,3-Dichloropropene	NA	NA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Ethylbenzene	700	70,000	7	30	N.D.	390	N.D.	2,500	7,700	7,400	0.9	J	3,900	4,000	4,800	480	N.D.	3,000	N.D.	1,600	N.D.	N.D.
2-Hexanone	44	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
4-Methyl-2-pentanone	8,200	820,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Methylene Chloride	5	500	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Styrene	100	10,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
1,1,2,2-Tetrachloroethane	4.3	430	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrachloroethene	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Toluene	1,000	100,000	3	1	J	N.D.	1	N.D.	N.D.	5,900	5,500	N.D.	2,700	51	15,000	7	N.D.	38	N.D.	10	N.D.	N.D.
1,1,1-Trichloroethane	200	2,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
1,1,2-Trichloroethane	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Trichloroethene	5	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2	N.D.	N.D.	N.D.	N.D.
Vinyl Chloride	2	20	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Xylene (Total)	10,000	180,000	17	17	N.D.	49	N.D.	510	8,100	8,200	N.D.	5,500	5,200	18,000	45	N.D.	2,200	0.8	J	270	N.D.	N.D.

Notes

All concentrations in micrograms per liter.

NA = Not Available

N.D. = Not Detected above the method detection limit

BOLD = Result above the PADEP Act 2 MSCs for Groundwater in Non-Residential Used Aquifer Standard

BOLD WITH SHADING = Result Above the PADEP Act 2 MSCs for Groundwater in Non-Residential Non-Use Aquifer Standard

VOCs = Volatile Organic Compounds

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Table 3
 Groundwater Sample Results
 Semivolatile Organic Compounds
 Philadelphia Gas Works - Passyunk Facility
 Philadelphia, Pennsylvania
 March 2, 3, 18, 2016

Sample ID	PADEP MSCs for Groundwater in Non- Residential Used Aquifer	PADEP MSCs for Groundwater in Non- Residential Non-Use Aquifer	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04S	MW-04S DUP	MW-05S	MW-06S	MW-07S	MW-10S	MW-11S	MW-12D	MW-12S	MW-42D	MW-42R	Rinse Blank	
Acenaphthene	3,800	3,800	170	64	0.8	10	N.D.	57	130	120	N.D.	64	74	340	63	0.7	140	N.D.	74	N.D.	
Acenaphthylene	6,100	16,000	1	1	N.D.	4	N.D.	7	29	27	N.D.	33	11	67	1	0.1 J	6	N.D.	15	N.D.	
Anthracene	66	66	5	2	N.D.	1	N.D.	4	7	8	N.D.	3	4	78	2	N.D.	17	N.D.	6	N.D.	
Benzo(a)anthracene	3.6	11	N.D.	N.D.	N.D.	0.6	0.3 J	0.7	3	3	N.D.	1	N.D.	38	0.3 J	N.D.	7	N.D.	0.7	N.D.	
Benzo(a)pyrene	0.2	3.8	N.D.	N.D.	0.1 J	1	0.1 J	0.4 J	2	2	N.D.	0.8	N.D.	23	0.2 J	N.D.	7	N.D.	0.5 J	N.D.	
Benzo(b)fluoranthene	1.2	1.2	N.D.	N.D.	0.2 J	1	0.2 J	0.5	2	2	N.D.	0.9	N.D.	26	0.3 J	N.D.	7	N.D.	0.5 J	N.D.	
Benzo(g,h,i)perylene	0.26	0.26	N.D.	N.D.	0.2 J	0.9	N.D.	0.3 J	0.8	0.9	N.D.	0.4 J	N.D.	9	N.D.	N.D.	3	N.D.	0.3 J	N.D.	
Benzo(k)fluoranthene	0.55	0.55	N.D.	N.D.	N.D.	0.4 J	N.D.	0.2 J	0.7	0.7	N.D.	0.3 J	N.D.	9	N.D.	N.D.	3	N.D.	0.2 J	N.D.	
4-Bromophenyl-phenylether	NA	NA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Butylbenzylphthalate	1,400	2,700	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Di-n-butylphthalate	10,000	400,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Carbazole	130	1,200	N.D.	N.D.	12	N.D.	14	N.D.	67	57	55	N.D.	40	79	31	40	N.D.	82	N.D.	30	N.D.
4-Chloro-3-methylphenol	510	510	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
4-Chloroaniline	13	13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
bis(2-Chloroethoxy)methane	NA	0.29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
bis(2-Chloroethyl)ether	0.76	76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
2-Chloronaphthalene	8,200	8,200	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
2-Chlorophenol	40	40	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
4-Chlorophenyl-phenylether	NA	NA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
2,2'-oxybis(1-Chloropropane)	300	30,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Chrysene	1.9	1.9	N.D.	N.D.	0.1 J	0.9	0.3 J	0.8	3	3	N.D.	1	N.D.	42	0.4 J	N.D.	9	N.D.	0.8	N.D.	
Dibenz(a,h)anthracene	0.36	0.6	N.D.	N.D.	N.D.	0.2 J	N.D.	0.1 J	0.3 J	0.3 J	N.D.	0.2 J	N.D.	4	N.D.	N.D.	1	N.D.	N.D.	N.D.	
Dibenzofuran	100	4,500	6	10	N.D.	1	N.D.	15	17	16	N.D.	8	18	61	12	N.D.	31	N.D.	13	N.D.	
1,2-Dichlorobenzene	600	60,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
1,3-Dichlorobenzene	600	60,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
1,4-Dichlorobenzene	75	7,500	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
3,3'-Dichlorobenzidine	5.8	3,100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2,4-Dichlorophenol	20	20,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Diethylphthalate	82,000	1,100,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2,4-Dimethylphenol	2,000	2,000,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	13	N.D.	N.D.	N.D.	25	0.5 J	0.8 J	4	N.D.	0.7 J	
Dimethylphthalate	NA	NA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
4,6-Dinitro-2-methylphenol	85	85	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2,4-Dinitrophenol	200	200,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2,4-Dinitrotoluene	8.4	8,400	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2,6-Dinitrotoluene	100	100,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
bis(2-Ethylhexyl)phthalate	6	290	N.D.	N.D.	N.D.	N.D.	2 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Fluoranthene	260	260	2	0.2 J	N.D.	0.9	0.2 J	2	7	8	N.D.	3	2	100	2	N.D.	16	N.D.	4	N.D.	
Fluorene	1,900	1,900	38	25	N.D.	4	N.D.	28	37	35	N.D.	17	36	230	23	0.1 J	67	N.D.	24	N.D.	
Hexachlorobenzene	1	6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Hexachlorobutadiene	33	2,900	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Hexachlorocyclopentadiene	50	1,800	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Hexachloroethane	1	100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Indeno(1,2,3-cd)pyrene	3.6	62	N.D.	N.D.	0.1 J	0.7	N.D.	0.2 J	0.7	0.8	N.D.	0.3 J	N.D.	8	N.D.	N.D.	3	N.D.	0.3 J	N.D.	
Isophorone	100	100,000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
2-Methylnaphthalene	410	410	49	7	N.D.	28	N.D.	520	1,100</b												

Table 4
Groundwater Sample Results
Dissolved Metals
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
March 2, 3, 18, 2016

Sample ID	PADEP MSCs for Groundwater in Non-Residential Used Aquifer	PADEP MSCs for Groundwater in Non-Residential Non-Use Aquifer	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04S	MW-04S DUP	MW-05S	MW-06S	MW-07S	MW-10S	MW-11S	MW-12D	MW-12S	MW-42D	MW-42R	Rinse Blank
Antimony	0.006	6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Arsenic	0.01	10	N.D.	N.D.	N.D.	0.0080 J	N.D.	N.D.	0.0106 J	0.0123 J	N.D.	N.D.	0.0094 J	0.0088 J	N.D.	N.D.	0.0128 J	0.0135 J	0.0326	N.D.
Beryllium	0.004	4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium	0.005	5	N.D.	N.D.	0.011	N.D.	0.00079 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0015 J	N.D.	N.D.	N.D.	N.D.
Chromium	0.1	100	N.D.	N.D.	N.D.	N.D.	0.0027 J	0.0029 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Copper	1	1,000	0.0034 J	0.0035 J	0.0045 J	0.0033 J	N.D.	0.0042 J	N.D.	0.0036 J	0.0049 J	N.D.	0.0035 J	N.D.	0.0032 J	0.0050 J	0.0040 J	0.0037 J	0.0038 J	0.0076 J
Lead	0.005	5	N.D.	N.D.	N.D.	N.D.	0.0059 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0092 J	N.D.	N.D.	N.D.	N.D.
Mercury	0.002	2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nickel	0.1	100	N.D.	N.D.	N.D.	N.D.	0.0038 J	0.0072 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Selenium	0.05	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Silver	0.1	100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0147	N.D.	N.D.	N.D.	N.D.
Thallium	0.002	2	N.D.	N.D.	N.D.	N.D.	N.D.	0.0139 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Zinc	2	2,000	N.D.	0.0100 J	N.D.	0.0159 J	0.0161 J	0.0056 J	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0049 J	N.D.	N.D.	N.D.	N.D.

Notes

All concentrations in milligrams per liter.

NA = Not analyzed

* = PADEP Secondary Maximum Contaminant Level

N.D. = Not Detected above the method detection limit

BOLD = Result above the PADEP Act 2 MSCs for Groundwater in Non-Residential Used Aquifer Standard, but below the PADEP Act 2 MSCs for Groundwater in Non-Residential Non-Use Aquifer Standard

BOLD WITH SHADING = Result Above the PADEP Act 2 MSCs for Groundwater in Non-Residential Non-Use Aquifer Standard

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



APPENDIX A

Field Data Sheets

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk (circle one)

Well ID: MW-1S

Date: 3/2/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1505	25.48	300	6.34	1.00	850.0	1.36	14.5	16	Initial
1510	25.78	300	6.23	1.03	540.1	—	15.7	21	
1515	25.78	300	6.41	1.16	272.0	—	16.1	-28	
1520	25.78	300	6.49	1.18	88.5	—	16.2	-47	
1525	25.78	300	6.49	1.12	84.0	—	16.4	-49	
1530	25.78	300	6.50	1.15	86.4	—	16.3	-50	~3

Comments: PID@wellhead: 0.0 ppm

Purge water placed in HAZ drum.

D.O. sensor stopped working; unable to collect.

Sample Method: Low Flow	Total Depth: 34.66 ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: 25.48 ft TIC
Well Casing Diameter: <u>2"</u> or 4" (circle one)	Total Purge Time: 25 min
Casing Material: PVC or Steel (circle one)	Total Purge Volume: 3 gal (approx.)

Sample Collection Information

Sample ID: MW - 1S

Collection Time: 1535

Analysis: VOC SVOO Metals (circle all that apply)

Preservatives: HCl (HNO3) none (circle all that apply)

Number of Bottles: 6

Initials BLO BAS

Page: 1 of 1



Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk (circle one)

Well ID: MW-3D

Date: 3/3/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0750	32.92	250	5.95	0.753	71.6	3.11	9.27	133	Initial
0755	32.92	250	5.96	1.11	67.8	2.12	9.92	85	1
0800	32.92	250	5.96	1.12	67.0	2.09	11.44	46	
0805	32.92	250	5.96	1.18	74.2	2.00	12.91	32	
0810	32.92	250	5.96	1.18	50.2	2.06	12.45	26	2.5
0815	32.92	250	5.95	1.19	41.5	1.97	12.39	17	
0820	32.92	250	5.94	1.22	25.9	1.94	12.45	14	
0825	32.92	250	5.95	1.24	11.5	1.92	12.41	9	
0830	32.92	250	5.95	1.25	7.7	1.96	12.30	9	4

Comments: Purgewater placed into a non-haz drum

P1D @ WH = 0.0

Sample Method: Low Flow	Total Depth: 55.50 ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: 32.96 ft TIC
Well Casing Diameter: 2" or 4" (circle one)	Total Purge Time: 46 min
Casing Material: PVC or Steel (circle one)	Total Purge Volume: 4 gal (approx.)

Sample Collection Information

Sample ID: MW-3D

Collection Time: 0835

Analysis: VOC (SVOC) Metals (circle all that apply)

Preservatives: HCl (X) HNO3 (none) (circle all that apply)

Number of Bottles: 6

Initials: SPS

Page: 1 of 1

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga Passyunk, 9th and Diamond (circle one)

Well ID: MW-3D

Date: 3/18/16

Time (5 min.)	Water Level (ft TIC)	Flow (mL/min)	pH	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1016	31.98	~400	7.40	1.24	10.5	0.45	14.63	52	Initial
1021	31.98		7.40	1.23	10.1	0.61	14.63	51	
1026	31.98		7.40	1.21	10.0	0.60	14.63	50	
1031	31.95	~350	7.38	1.19	9.80	0.59	14.61	50	
1036	31.95	~250	7.38	1.18	9.81	0.59	14.60	48	3 gal
1041	31.94		7.39	1.19	9.80	0.58	14.59	46	
1046	31.92		7.40	1.19	9.75	0.58	14.56	44	
1051	31.91		7.41	1.19	9.74	0.58	14.49	41	4 gal
1056	Collect Sample								

Comments:

Sample Method: Low Flow	Total Depth: <u>55.50</u> ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: <u>31.98</u> ft TIC
Well Casing Diameter: 2" or <u>4"</u> (circle one)	Total Purge Time: <u>35</u> min
Casing Material: <u>PVC</u> or Steel (circle one)	Total Purge Volume: <u>4</u> gal (approx.)

Sample Collection Information

Sample ID: <u>MW-3D</u>	Collection Time:
Analysis: <u>VOC SVOC</u> Metals (circle all that apply)	
Preservatives: <u>HCL HNO3</u> none (circle all that apply)	
Number of Bottles: <u>6</u>	
Initials <u>LC</u>	Page: <u>1</u> of <u>1</u>

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, (Passyunk) (circle one)

Well ID: MW-45

Date: 3/3/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min.)	pH (S.U.)	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1425	24.22	250	6.52	0.709	319	6.12	12.99	-65	Initial
1430	24.60	250	6.58	0.763	467	5.05	12.34	-84	
1435	24.98	250	6.60	0.755	446	4.09	13.08	-101	
1440	25.16	250	6.60	0.755	385	3.81	12.79	-106	
1445	25.34	250	6.58	0.752	349	3.22	12.99	-110	
1450	25.35	250	6.61	0.756	303	3.17	13.10	-117	2.5
1455	25.35	250	6.65	0.735	210	3.01	15.09	-123	
1500	25.35	250	6.70	0.712	158	2.92	14.99	-128	
1505	25.35	250	6.71	0.690	104	2.90	15.76	-132	
1510	25.35	250	6.74	0.692	111	2.81	15.80	-135	
1515	25.35	250	6.72	0.695	108	2.82	15.81	-140	4.5

Comments: Purge water placed into a "hot" drum

$$\text{PDI} @ \text{WH} = 0.3 \quad \text{BG} = 0.3$$

Sample Method: Low Flow	Total Depth: <u>26.32</u> ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: <u>22.44</u> ft TIC
Well Casing Diameter: <u>2"</u> or <u>4"</u> (circle one)	Total Purge Time: <u>40</u> min
Casing Material: <u>PVC</u> or <u>Steel</u> (circle one)	Total Purge Volume: <u>115</u> gal (approx.)

Sample Collection Information

Sample ID: MW-45

Collection Time: 1530

Analysis: VOC EVOC Metals (circle all that apply)Preservatives: HCl HNO3 none (circle all that apply)

Number of Bottles: 12 Collected MW-45 Dn here @ 1530

Initials: BR

Page: 1 of 1

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk (circle one)

Well ID: MW-65

Date: 3/3/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1315	23.89	200	6.67	1.47	>999	1.74	15.0	-82	Initial
1320	24.66	200	6.73	1.48	681.0	—	14.6	-117	
1325	27.37	200	6.75	1.46	403.2	—	14.5	-131	
1330	28.37	200	6.71	1.46	203.0	—	14.6	-118	
1335	29.02	200	6.70	1.45	52.0	—	14.2	-115	
1340	29.60	200	6.72	1.46	50.2	—	15.9	-119	
1345	29.60	200	6.73	1.44	48.7	—	15.3	-120	~3

Comments: PID@ well head: 0.0 ppm

Purge water placed in HAZ drum.

D.O. stopped working, unable to collect

Sample Method: Low Flow	Total Depth: <u>33.35</u> ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: <u>23.89</u> ft TIC
Well Casing Diameter: <u>2"</u> or 4" (circle one)	Total Purge Time: <u>30</u> min
Casing Material: PVC or Steel (circle one)	Total Purge Volume: <u>~3</u> gal (approx.)

Sample Collection Information

Sample ID: MW-65

Collection Time: 1350

Analysis: VOC (SVOC) Metals (circle all that apply)

Preservatives: HCl HNO3 none (circle all that apply)

Number of Bottles: 6

Initials SLE

Page: 1 of 1

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk (circle one)

Well ID: MW-12D

Date: 3/3/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1105	28.11	250	7.42	1.50	91.0	4.52	8.58	9	Initial
1110	28.16	250	6.18	1.89	109	3.66	10.27	24	
1115	28.19	250	5.65	1.95	52.50	3.11	13.76	18	1
1120	28.22	250	5.66	1.96	44.1	2.92	13.82	12	
1125	28.22	250	5.66	1.96	45.3	2.80	13.46	10	
1130	28.22	250	5.66	1.96	40.6	2.72	13.36	9	
1135	28.22	250	5.67	1.96	39.2	2.66	13.35	10	2.2

Comments: Purge water placed into non-HAZ drum

$$\text{PID} @ \text{WH} = 0.0$$

Sample Method: Low Flow	Total Depth: 75.65 ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: 28.05 ft TIC
Well Casing Diameter: 2" or 4" (circle one)	Total Purge Time: 30 min
Casing Material: PVC or Steel (circle one)	Total Purge Volume: 2.2 gal (approx.)

Sample Collection Information

Sample ID: MW-12D

Collection Time: 1140

Analysis: VOC SVOC Metals (circle all that apply)

Preservatives: HCl KNO3 none (circle all that apply)

Number of Bottles: 6

Initials: BKS

Page: 1 of 1

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk (circle one)

Well ID: MW-125

Date: 3/3/11e

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH	Cond (ms/cm)	Turb (ntu)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1105	21.56	200	6.83	1.44	340.0	2.62	13.5	-102	Initial
1110	21.60	200	6.85	1.45	214.0	0.14	14.5	-113	
1115	21.60	200	6.87	1.45	121.4	—	14.9	-122	
1120	21.60	200	6.87	1.44	177.0	—	15.2	-120	
1125	21.60	200	6.88	1.47	101.0	—	14.5	-125	
1130	21.60	200	6.88	1.47	99.9	—	14.1	-124	
1135	21.40	200	6.89	1.46	96.4	—	14.3	-123	~3

Comments: PID@wellhead : 0.0 ppm

Purge water placed in HAZ drum

D.O. sensor stopped working, unable to collect.

Sample Method: Low Flow	Total Depth: 33.10 ft TIC
Sampling Equipment: 2" Submersible Pump	Static Water Level: 21.56 ft TIC
Well Casing Diameter: (2") or 4" (circle one)	Total Purge Time: 31.30 min
Casing Material: (PVC) or Steel (circle one)	Total Purge Volume: ~3 gal (approx.)

Sample Collection Information

Sample ID: MW-125

Collection Time: 1140

Analysis: (VOO SVOC Metals) (circle all that apply)

Preservatives: (HCl) (HNO3) (none) (circle all that apply)

Number of Bottles: 6

Initials SLE

Page: 1 of 1



APPENDIX B

Laboratory Data



Lancaster Laboratories
Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Report Date: March 23, 2016

Project: PGW - Passyunk

Submittal Date: 03/04/2016
Group Number: 1637604
PO Number: PO10160257
Release Number: 178382
State of Sample Origin: PA

Client Sample Description

MW-01D Grab Groundwater
MW-01S Grab Groundwater
MW-02D Grab Groundwater
MW-02S Grab Groundwater
MW-03S Grab Groundwater
MW-04S Grab Groundwater
MW-04S DUP Grab Groundwater
MW-05S Grab Groundwater
MW-06S Grab Groundwater
MW-07S Grab Groundwater
MW-10S Grab Groundwater
MW-11S Grab Groundwater
MW-12D Grab Groundwater
MW-12S Grab Groundwater
MW-42D Grab Groundwater
MW-42R Grab Groundwater
Rinse Blank #3 Grab Water
Trip Blank Water

Lancaster Labs (LL) #

8272155
8272156
8272157
8272158
8272159
8272160
8272161
8272162
8272163
8272164
8272165
8272166
8272167
8272168
8272169
8272170
8272171
8272172

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 Leidos Engineering, LLC

Attn: Matt Machusick



Lancaster Laboratories
Environmental

Analysis Report

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Respectfully Submitted,

Lynn M. Frederiksen
Principal Specialist Group Leader

(717) 556-7255

Project Name: PGW - Passyunk
LL Group #: 1637604

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

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

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8270C, GC/MS Semivolatiles****Sample #s: 8272164, 8272168**

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Sample #s: 8272155

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

The following are the concentrations of the detected targets in the re-extracted sample:

Phenol	24.79ug/l
Naphthalene	3.91ug/l
2-Methylnaphthalene	48.78 ug/l
Acenaphthalene	166.1 ug/l
Dibenzofuran	5.92 ug/l
Fluorene	37.61 ug/l
Phenanthrene	29.02 ug/l
Anthracene	4.91 ug/l
Fluoranthene	2.07 ug/l
Pyrene	2.08 ug/l

Batch #: 16066WAJ026 (Sample number(s): 8272155-8272158 UNSPK: P270001)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8272155, 8272156, 8272157, 8272158

Batch #: 16066WAZ026 (Sample number(s): 8272169-8272170 UNSPK: 66WZUS)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Acenaphthene, Phenanthrene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Dimethylphthalate

Batch #: 16068WAQ026 (Sample number(s): 8272159-8272168)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8272159, 8272164, 8272165, 8272166, 8272167, 8272168

Batch #: 16069WAE026 (Sample number(s): 8272171 UNSPK: P272195)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: 2,4-Dimethylphenol, 2,4-Dinitrophenol

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: 2,4-Dinitrophenol

SW-846 6010B, Metals Dissolved

Sample #s: 8272167

Reporting limits were raised due to interference from the sample matrix.

Batch #: 160671848002 (Sample number(s): 8272155-8272171 UNSPK: P272151 BKG: P272151)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Copper

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Sample Description: MW-01D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272155
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	1,300	5	10	10
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	7	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	3	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	17	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	170	0.5	3	5
04678	Acenaphthylene	208-96-8	1	0.1	0.5	1
04678	Anthracene	120-12-7	5	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-01D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272155
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	6	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	2	0.1	0.5	1
04678	Fluorene	86-73-7	38	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	49	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	4	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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

Sample Description: MW-01D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272155
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	30	0.1	0.5	1
04678	Phenol	108-95-2	10	0.5	1	1
04678	Pyrene	129-00-0	2	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

The following are the concentrations of the detected targets in the re-extracted sample:

Phenol	24.79ug/l
Naphthalene	3.91ug/l
2-Methylnaphthalene	48.78 ug/l
Acenaphthalene	166.1 ug/l
Dibenzofuran	5.92 ug/l
Fluorene	37.61 ug/l
Phenanthrene	29.02 ug/l
Anthracene	4.91 ug/l
Fluoranthene	2.07 ug/l
Pyrene	2.08 ug/l

Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150
07053	Copper	7440-50-8	0.0034 J	0.0032	0.0100
07055	Lead	7439-92-1	N.D.	0.0051	0.0150
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200
07066	Silver	7440-22-4	N.D.	0.0018	0.0050
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200
		SW-846 7470A	mg/l	mg/l	mg/l
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020

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

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Sample Description: MW-01D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272155
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:55 by BAS Leidos Engineering, LLC
Submitted: 03/04/2016 18:39 6310 Allentown Blvd.
Reported: 03/23/2016 14:05 Harrisburg PA 17112

PSY1D

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 17:01	Linda C Pape	1
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 17:24	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 17:01	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160751AA	03/15/2016 17:24	Linda C Pape	10
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/13/2016 20:46	Catherine E Bachman	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/19/2016 18:15	Catherine E Bachman	5
00813	BNA Water Extraction	SW-846 3510C	1	16066WAJ026	03/08/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:37	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:13	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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



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Sample Description: MW-01S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272156
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 15:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	12	40	2
10335	Benzene	71-43-2	1,200	10	20	20
10335	Bromodichloromethane	75-27-4	N.D.	1	2	2
10335	Bromoform	75-25-2	N.D.	1	8	2
10335	Bromomethane	74-83-9	N.D.	1	2	2
10335	2-Butanone	78-93-3	N.D.	6	20	2
10335	Carbon Disulfide	75-15-0	N.D.	2	10	2
10335	Carbon Tetrachloride	56-23-5	N.D.	1	2	2
10335	Chlorobenzene	108-90-7	N.D.	1	2	2
10335	Chloroethane	75-00-3	N.D.	1	2	2
10335	Chloroform	67-66-3	N.D.	1	2	2
10335	Chloromethane	74-87-3	N.D.	1	2	2
10335	Dibromochloromethane	124-48-1	N.D.	1	2	2
10335	1,1-Dichloroethane	75-34-3	N.D.	1	2	2
10335	1,2-Dichloroethane	107-06-2	N.D.	1	2	2
10335	1,1-Dichloroethene	75-35-4	N.D.	1	2	2
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	1	2	2
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	1	2	2
10335	1,2-Dichloropropane	78-87-5	N.D.	1	2	2
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	2	2
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	2	2
10335	Ethylbenzene	100-41-4	30	1	2	2
10335	2-Hexanone	591-78-6	N.D.	6	20	2
10335	4-Methyl-2-pentanone	108-10-1	N.D.	6	20	2
10335	Methylene Chloride	75-09-2	N.D.	4	8	2
10335	Styrene	100-42-5	N.D.	2	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	2	2
10335	Tetrachloroethene	127-18-4	N.D.	1	2	2
10335	Toluene	108-88-3	1	J	2	2
10335	1,1,1-Trichloroethane	71-55-6	N.D.	1	2	2
10335	1,1,2-Trichloroethane	79-00-5	N.D.	1	2	2
10335	Trichloroethene	79-01-6	N.D.	1	2	2
10335	Vinyl Chloride	75-01-4	N.D.	1	2	2
10335	Xylene (Total)	1330-20-7	17	1	2	2
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	64	0.1	0.5	1
04678	Acenaphthylene	208-96-8	1	0.1	0.5	1
04678	Anthracene	120-12-7	2	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	12	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-01S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272156
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 15:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	10	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	0.2	J	0.1	1
04678	Fluorene	86-73-7	25	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	7	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	29	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-01S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272156
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 15:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phanthrene	85-01-8	4	0.1	0.5	1
04678	Phenol	108-95-2	3	0.5	1	1
04678	Pyrene	129-00-0	0.2 J	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0035 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	0.0100 J	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 17:48	Linda C Pape	2
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 18:11	Linda C Pape	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 17:48	Linda C Pape	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160751AA	03/15/2016 18:11	Linda C Pape	20
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/13/2016 21:15	Catherine E Bachman	1
00813	BNA Water Extraction	SW-846 3510C	1	16066WAJ026	03/08/2016 09:30	Bradley W VanLeuven	1

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



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Sample Description: MW-01S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272156
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/02/2016 15:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY1S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:40	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:15	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

Sample Description: MW-02D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272157
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 13:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor	
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l		
10335	Acetone	67-64-1	N.D.	6	20	1	
10335	Benzene	71-43-2	N.D.	0.5	1	1	
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1	
10335	Bromoform	75-25-2	N.D.	0.5	4	1	
10335	Bromomethane	74-83-9	N.D.	0.5	1	1	
10335	2-Butanone	78-93-3	N.D.	3	10	1	
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1	
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1	
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1	
10335	Chloroethane	75-00-3	N.D.	0.5	1	1	
10335	Chloroform	67-66-3	N.D.	0.5	1	1	
10335	Chloromethane	74-87-3	N.D.	0.5	1	1	
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1	
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1	
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1	
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1	
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1	
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1	
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1	
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1	
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1	
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1	
10335	2-Hexanone	591-78-6	N.D.	3	10	1	
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1	
10335	Methylene Chloride	75-09-2	N.D.	2	4	1	
10335	Styrene	100-42-5	N.D.	1	5	1	
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1	
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1	
10335	Toluene	108-88-3	N.D.	0.5	1	1	
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1	
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1	
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1	
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1	
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l		
04678	Acenaphthene	83-32-9	0.8	0.1	0.5	1	
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1	
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1	
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1	
04678	Benzo(a)pyrene	50-32-8	0.1	J	0.5	1	
04678	Benzo(b)fluoranthene	205-99-2	0.2	J	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.2	J	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1	
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1	
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1	
04678	Carbazole	86-74-8	N.D.	0.5	1	1	
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1	
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1	
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1	

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



Sample Description: MW-02D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272157
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 13:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.1 J	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.1 J	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-02D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272157
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 13:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	0.3 J	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	0.0110	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0045 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 11:54	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 11:54	Linda C Pape	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/13/2016 21:44	Catherine E Bachman	1
00813	BNA Water Extraction	SW-846 3510C	1	16066WAJ026	03/08/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1

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



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Sample Description: MW-02D Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272157
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/02/2016 13:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:44	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:17	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-02S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272158
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:10 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	50	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	390	5	10	10
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	1	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	49	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	10	0.1	0.5	1
04678	Acenaphthylene	208-96-8	4	0.1	0.5	1
04678	Anthracene	120-12-7	1	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	0.6	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	1	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	1	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.9	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.4	J	0.1	0.5
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	14	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-02S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272158
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:10 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.9	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	0.2	J	0.5	1
04678	Dibenzofuran	132-64-9	1	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	0.9	0.1	0.5	1
04678	Fluorene	86-73-7	4	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.7	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	28	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	290	1	5	10
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-02S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272158
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 14:10 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	3	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	2	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0080 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0033 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	0.0159 J	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 18:35	Linda C Pape	1
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 18:58	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 18:35	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160751AA	03/15/2016 18:58	Linda C Pape	10
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/13/2016 22:13	Catherine E Bachman	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAJ026	03/19/2016 18:44	Catherine E Bachman	10

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



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Sample Description: MW-02S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272158
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/02/2016 14:10 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY2S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16066WAJ026	03/08/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:47	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:19	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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



Sample Description: MW-03S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272159
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 08:25 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY3S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor	
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l		
10335	Acetone	67-64-1	N.D.	300	1,000	50	
10335	Benzene	71-43-2	22,000	250	500	500	
10335	Bromodichloromethane	75-27-4	N.D.	25	50	50	
10335	Bromoform	75-25-2	N.D.	25	200	50	
10335	Bromomethane	74-83-9	N.D.	25	50	50	
10335	2-Butanone	78-93-3	N.D.	150	500	50	
10335	Carbon Disulfide	75-15-0	N.D.	50	250	50	
10335	Carbon Tetrachloride	56-23-5	N.D.	25	50	50	
10335	Chlorobenzene	108-90-7	N.D.	25	50	50	
10335	Chloroethane	75-00-3	N.D.	25	50	50	
10335	Chloroform	67-66-3	N.D.	25	50	50	
10335	Chloromethane	74-87-3	N.D.	25	50	50	
10335	Dibromochloromethane	124-48-1	N.D.	25	50	50	
10335	1,1-Dichloroethane	75-34-3	N.D.	25	50	50	
10335	1,2-Dichloroethane	107-06-2	N.D.	25	50	50	
10335	1,1-Dichloroethene	75-35-4	N.D.	25	50	50	
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	25	50	50	
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	25	50	50	
10335	1,2-Dichloropropane	78-87-5	N.D.	25	50	50	
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	25	50	50	
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	25	50	50	
10335	Ethylbenzene	100-41-4	2,500	25	50	50	
10335	2-Hexanone	591-78-6	N.D.	150	500	50	
10335	4-Methyl-2-pentanone	108-10-1	N.D.	150	500	50	
10335	Methylene Chloride	75-09-2	N.D.	100	200	50	
10335	Styrene	100-42-5	N.D.	50	250	50	
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	25	50	50	
10335	Tetrachloroethene	127-18-4	N.D.	25	50	50	
10335	Toluene	108-88-3	N.D.	25	50	50	
10335	1,1,1-Trichloroethane	71-55-6	N.D.	25	50	50	
10335	1,1,2-Trichloroethane	79-00-5	N.D.	25	50	50	
10335	Trichloroethene	79-01-6	N.D.	25	50	50	
10335	Vinyl Chloride	75-01-4	N.D.	25	50	50	
10335	Xylene (Total)	1330-20-7	510	25	50	50	
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l		
04678	Acenaphthene	83-32-9	57	0.1	0.5	1	
04678	Acenaphthylene	208-96-8	7	0.1	0.5	1	
04678	Anthracene	120-12-7	4	0.1	0.5	1	
04678	Benzo(a)anthracene	56-55-3	0.7	0.1	0.5	1	
04678	Benzo(a)pyrene	50-32-8	0.4	J	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	0.5		0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.3	J	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.2	J	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
04678	Carbazole	86-74-8	67		0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.		2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1

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

Sample Description: MW-03S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272159
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 08:25 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY3S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.8	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	0.1	J 0.1	0.5	1
04678	Dibenzofuran	132-64-9	15	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	2	0.1	0.5	1
04678	Fluorene	86-73-7	28	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.2	J 0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	520	5	25	50
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	8,000	25	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-03S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272159
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 08:25 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY3S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	20	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	2	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	0.0029 J	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0042 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	0.0072 J	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	0.0056 J	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 06:05	Christopher G Torres	50
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 06:28	Christopher G Torres	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 06:05	Christopher G Torres	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 06:28	Christopher G Torres	500
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 10:35	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 04:08	William H Saadeh	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 14:02	Joseph M Gambler	250

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



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Sample Description: MW-03S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272159
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 08:25 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY3S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:50	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:21	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-04S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272160
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	120	400	20
10335	Benzene	71-43-2	10,000	100	200	200
10335	Bromodichloromethane	75-27-4	N.D.	10	20	20
10335	Bromoform	75-25-2	N.D.	10	80	20
10335	Bromomethane	74-83-9	N.D.	10	20	20
10335	2-Butanone	78-93-3	N.D.	60	200	20
10335	Carbon Disulfide	75-15-0	N.D.	20	100	20
10335	Carbon Tetrachloride	56-23-5	N.D.	10	20	20
10335	Chlorobenzene	108-90-7	N.D.	10	20	20
10335	Chloroethane	75-00-3	N.D.	10	20	20
10335	Chloroform	67-66-3	N.D.	10	20	20
10335	Chloromethane	74-87-3	N.D.	10	20	20
10335	Dibromochloromethane	124-48-1	N.D.	10	20	20
10335	1,1-Dichloroethane	75-34-3	N.D.	10	20	20
10335	1,2-Dichloroethane	107-06-2	N.D.	10	20	20
10335	1,1-Dichloroethene	75-35-4	N.D.	10	20	20
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	10	20	20
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	10	20	20
10335	1,2-Dichloropropane	78-87-5	N.D.	10	20	20
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	10	20	20
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	10	20	20
10335	Ethylbenzene	100-41-4	7,700	100	200	200
10335	2-Hexanone	591-78-6	N.D.	60	200	20
10335	4-Methyl-2-pentanone	108-10-1	N.D.	60	200	20
10335	Methylene Chloride	75-09-2	N.D.	40	80	20
10335	Styrene	100-42-5	N.D.	20	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	10	20	20
10335	Tetrachloroethene	127-18-4	N.D.	10	20	20
10335	Toluene	108-88-3	5,900	10	20	20
10335	1,1,1-Trichloroethane	71-55-6	N.D.	10	20	20
10335	1,1,2-Trichloroethane	79-00-5	N.D.	10	20	20
10335	Trichloroethene	79-01-6	N.D.	10	20	20
10335	Vinyl Chloride	75-01-4	N.D.	10	20	20
10335	Xylene (Total)	1330-20-7	8,100	10	20	20
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	130	5	25	50
04678	Acenaphthylene	208-96-8	29	0.1	0.5	1
04678	Anthracene	120-12-7	7	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	3	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	2	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	2	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.8	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.7	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	57	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-04S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272160
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	3	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	0.3 J	0.1	0.5	1
04678	Dibenzofuran	132-64-9	17	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	7	0.1	0.5	1
04678	Fluorene	86-73-7	37	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.7	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	1,100	5	25	50
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	21	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	13,000	25	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-04S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272160
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	36	0.1	0.5	1
04678	Phenol	108-95-2	18	0.5	1	1
04678	Pyrene	129-00-0	8	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0106 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 03:43	Christopher G Torres	20
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 04:07	Christopher G Torres	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 03:43	Christopher G Torres	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 04:07	Christopher G Torres	200
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 11:04	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 04:37	William H Saadeh	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 14:31	Joseph M Gambler	250

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



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Sample Description: MW-04S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272160
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:54	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:31	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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



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Sample Description: MW-04S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272161
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	120	400	20
10335	Benzene	71-43-2	10,000	100	200	200
10335	Bromodichloromethane	75-27-4	N.D.	10	20	20
10335	Bromoform	75-25-2	N.D.	10	80	20
10335	Bromomethane	74-83-9	N.D.	10	20	20
10335	2-Butanone	78-93-3	N.D.	60	200	20
10335	Carbon Disulfide	75-15-0	N.D.	20	100	20
10335	Carbon Tetrachloride	56-23-5	N.D.	10	20	20
10335	Chlorobenzene	108-90-7	N.D.	10	20	20
10335	Chloroethane	75-00-3	N.D.	10	20	20
10335	Chloroform	67-66-3	N.D.	10	20	20
10335	Chloromethane	74-87-3	N.D.	10	20	20
10335	Dibromochloromethane	124-48-1	N.D.	10	20	20
10335	1,1-Dichloroethane	75-34-3	N.D.	10	20	20
10335	1,2-Dichloroethane	107-06-2	N.D.	10	20	20
10335	1,1-Dichloroethene	75-35-4	N.D.	10	20	20
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	10	20	20
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	10	20	20
10335	1,2-Dichloropropane	78-87-5	N.D.	10	20	20
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	10	20	20
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	10	20	20
10335	Ethylbenzene	100-41-4	7,400	100	200	200
10335	2-Hexanone	591-78-6	N.D.	60	200	20
10335	4-Methyl-2-pentanone	108-10-1	N.D.	60	200	20
10335	Methylene Chloride	75-09-2	N.D.	40	80	20
10335	Styrene	100-42-5	N.D.	20	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	10	20	20
10335	Tetrachloroethene	127-18-4	N.D.	10	20	20
10335	Toluene	108-88-3	5,500	10	20	20
10335	1,1,1-Trichloroethane	71-55-6	N.D.	10	20	20
10335	1,1,2-Trichloroethane	79-00-5	N.D.	10	20	20
10335	Trichloroethene	79-01-6	N.D.	10	20	20
10335	Vinyl Chloride	75-01-4	N.D.	10	20	20
10335	Xylene (Total)	1330-20-7	8,200	10	20	20
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	120	0.1	0.5	1
04678	Acenaphthylene	208-96-8	27	0.1	0.5	1
04678	Anthracene	120-12-7	8	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	3	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	2	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	2	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.9	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.7	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	55	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-04S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272161
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	3	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	0.3 J	0.1	0.5	1
04678	Dibenzofuran	132-64-9	16	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	13	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	8	0.1	0.5	1
04678	Fluorene	86-73-7	35	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.8	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	970	5	25	50
04678	2-Methylphenol	95-48-7	7	0.5	1	1
04678	4-Methylphenol	106-44-5	16	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	12,000	25	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-04S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272161
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	36	0.1	0.5	1
04678	Phenol	108-95-2	13	0.5	1	1
04678	Pyrene	129-00-0	8	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0123 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0036 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 04:31	Christopher G Torres	20
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 04:54	Christopher G Torres	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 04:31	Christopher G Torres	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 04:54	Christopher G Torres	200
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 05:06	William H Saadeh	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 15:01	Joseph M Gambler	250
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/16/2016 00:19	William H Saadeh	1

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



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-04S DUP Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272161
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 15:30 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY4D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 04:57	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:33	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-05S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272162
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 09:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	4	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	0.9 J	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-05S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272162
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 09:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	0.3 J	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	4	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-05S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272162
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 09:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0049 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 12:18	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 12:18	Linda C Pape	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 12:01	Joseph M Gambler	1
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1

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



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Sample Description: MW-05S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272162
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 09:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY5S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:00	Elaine F Stoltzfus	1
00259 01848	Mercury ICP-WW, 3005A (tot rec) - U3	SW-846 7470A SW-846 3005A	1 1	160675713002 160671848002	03/08/2016 11:35 03/07/2016 17:05	Damary Valentin Barbara A Kane	1 1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-06S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272163
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 13:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY6S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	30	100	5
10335	Benzene	71-43-2	3,900	25	50	50
10335	Bromodichloromethane	75-27-4	N.D.	3	5	5
10335	Bromoform	75-25-2	N.D.	3	20	5
10335	Bromomethane	74-83-9	N.D.	3	5	5
10335	2-Butanone	78-93-3	N.D.	15	50	5
10335	Carbon Disulfide	75-15-0	N.D.	5	25	5
10335	Carbon Tetrachloride	56-23-5	N.D.	3	5	5
10335	Chlorobenzene	108-90-7	N.D.	3	5	5
10335	Chloroethane	75-00-3	N.D.	3	5	5
10335	Chloroform	67-66-3	N.D.	3	5	5
10335	Chloromethane	74-87-3	N.D.	3	5	5
10335	Dibromochloromethane	124-48-1	N.D.	3	5	5
10335	1,1-Dichloroethane	75-34-3	N.D.	3	5	5
10335	1,2-Dichloroethane	107-06-2	N.D.	3	5	5
10335	1,1-Dichloroethene	75-35-4	N.D.	3	5	5
10335	cis-1,2-Dichloroethene	156-59-2	4 J	3	5	5
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	3	5	5
10335	1,2-Dichloropropane	78-87-5	N.D.	3	5	5
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	3	5	5
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	3	5	5
10335	Ethylbenzene	100-41-4	3,900	25	50	50
10335	2-Hexanone	591-78-6	N.D.	15	50	5
10335	4-Methyl-2-pentanone	108-10-1	N.D.	15	50	5
10335	Methylene Chloride	75-09-2	N.D.	10	20	5
10335	Styrene	100-42-5	N.D.	5	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	3	5	5
10335	Tetrachloroethene	127-18-4	N.D.	3	5	5
10335	Toluene	108-88-3	2,700	25	50	50
10335	1,1,1-Trichloroethane	71-55-6	N.D.	3	5	5
10335	1,1,2-Trichloroethane	79-00-5	N.D.	3	5	5
10335	Trichloroethene	79-01-6	N.D.	3	5	5
10335	Vinyl Chloride	75-01-4	N.D.	3	5	5
10335	Xylene (Total)	1330-20-7	5,500	25	50	50
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	64	0.1	0.5	1
04678	Acenaphthylene	208-96-8	33	0.1	0.5	1
04678	Anthracene	120-12-7	3	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	1	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	0.8	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	0.9	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.4 J	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.3 J	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	40	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-06S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272163
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 13:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY6S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	1	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	0.2 J	0.1	0.5	1
04678	Dibenzofuran	132-64-9	8	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	11	32	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	3	0.1	0.5	1
04678	Fluorene	86-73-7	17	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.3 J	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	640	5	26	50
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	7,600	26	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	11	32	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-06S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272163
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 13:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY6S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	13	0.1	0.5	1
04678	Phenol	108-95-2	17	0.5	1	1
04678	Pyrene	129-00-0	3	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 01:23	Christopher G Torres	5
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 01:46	Christopher G Torres	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 01:23	Christopher G Torres	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 01:46	Christopher G Torres	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 12:30	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 05:35	William H Saadeh	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 15:30	Joseph M Gambler	250

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



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Sample Description: MW-06S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272163
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 13:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY6S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:04	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:37	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-07S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272164
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 12:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY7S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	60	200	10
10335	Benzene	71-43-2	4,100	50	100	100
10335	Bromodichloromethane	75-27-4	N.D.	5	10	10
10335	Bromoform	75-25-2	N.D.	5	40	10
10335	Bromomethane	74-83-9	N.D.	5	10	10
10335	2-Butanone	78-93-3	N.D.	30	100	10
10335	Carbon Disulfide	75-15-0	N.D.	10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.	5	10	10
10335	Chlorobenzene	108-90-7	N.D.	5	10	10
10335	Chloroethane	75-00-3	N.D.	5	10	10
10335	Chloroform	67-66-3	N.D.	5	10	10
10335	Chloromethane	74-87-3	N.D.	5	10	10
10335	Dibromochloromethane	124-48-1	N.D.	5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.	5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.	5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.	5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.	5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	5	10	10
10335	Ethylbenzene	100-41-4	4,000	50	100	100
10335	2-Hexanone	591-78-6	N.D.	30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.	30	100	10
10335	Methylene Chloride	75-09-2	N.D.	20	40	10
10335	Styrene	100-42-5	N.D.	10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	5	10	10
10335	Tetrachloroethene	127-18-4	N.D.	5	10	10
10335	Toluene	108-88-3	51	5	10	10
10335	1,1,1-Trichloroethane	71-55-6	N.D.	5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.	5	10	10
10335	Trichloroethene	79-01-6	N.D.	5	10	10
10335	Vinyl Chloride	75-01-4	N.D.	5	10	10
10335	Xylene (Total)	1330-20-7	5,200	5	10	10
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	74	0.1	0.5	1
04678	Acenaphthylene	208-96-8	11	0.1	0.5	1
04678	Anthracene	120-12-7	4	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	79	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-07S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272164
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 12:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY7S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	18	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	2	0.1	0.5	1
04678	Fluorene	86-73-7	36	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	720	5	26	50
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	8,600	26	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-07S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272164
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 12:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY7S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	27	0.1	0.5	1
04678	Phenol	108-95-2	2	0.5	1	1
04678	Pyrene	129-00-0	2	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0094 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0035 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 02:57	Christopher G Torres	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 03:20	Christopher G Torres	100

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



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Sample Description: MW-07S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272164
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 12:50 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY7S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 02:57	Christopher G Torres	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 03:20	Christopher G Torres	100
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 12:59	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 06:04	William H Saadeh	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 15:59	Joseph M Gambler	250
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:07	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:39	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272165
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	300	1,000	50
10335	Benzene	71-43-2	27,000	250	500	500
10335	Bromodichloromethane	75-27-4	N.D.	25	50	50
10335	Bromoform	75-25-2	N.D.	25	200	50
10335	Bromomethane	74-83-9	N.D.	25	50	50
10335	2-Butanone	78-93-3	N.D.	150	500	50
10335	Carbon Disulfide	75-15-0	N.D.	50	250	50
10335	Carbon Tetrachloride	56-23-5	N.D.	25	50	50
10335	Chlorobenzene	108-90-7	N.D.	25	50	50
10335	Chloroethane	75-00-3	N.D.	25	50	50
10335	Chloroform	67-66-3	N.D.	25	50	50
10335	Chloromethane	74-87-3	N.D.	25	50	50
10335	Dibromochloromethane	124-48-1	N.D.	25	50	50
10335	1,1-Dichloroethane	75-34-3	N.D.	25	50	50
10335	1,2-Dichloroethane	107-06-2	N.D.	25	50	50
10335	1,1-Dichloroethene	75-35-4	N.D.	25	50	50
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	25	50	50
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	25	50	50
10335	1,2-Dichloropropane	78-87-5	N.D.	25	50	50
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	25	50	50
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	25	50	50
10335	Ethylbenzene	100-41-4	4,800	25	50	50
10335	2-Hexanone	591-78-6	N.D.	150	500	50
10335	4-Methyl-2-pentanone	108-10-1	N.D.	150	500	50
10335	Methylene Chloride	75-09-2	N.D.	100	200	50
10335	Styrene	100-42-5	N.D.	50	250	50
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	25	50	50
10335	Tetrachloroethene	127-18-4	N.D.	25	50	50
10335	Toluene	108-88-3	15,000	25	50	50
10335	1,1,1-Trichloroethane	71-55-6	N.D.	25	50	50
10335	1,1,2-Trichloroethane	79-00-5	N.D.	25	50	50
10335	Trichloroethene	79-01-6	N.D.	25	50	50
10335	Vinyl Chloride	75-01-4	N.D.	25	50	50
10335	Xylene (Total)	1330-20-7	18,000	25	50	50
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	340	5	25	50
04678	Acenaphthylene	208-96-8	67	0.1	0.5	1
04678	Anthracene	120-12-7	78	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	38	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	23	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	26	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	9	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	9	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	31	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272165
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	42	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	4	0.1	0.5	1
04678	Dibenzofuran	132-64-9	61	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	25	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	100	0.1	0.5	1
04678	Fluorene	86-73-7	230	5	25	50
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	8	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	3,400	5	25	50
04678	2-Methylphenol	95-48-7	13	0.5	1	1
04678	4-Methylphenol	106-44-5	17	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	16,000	25	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272165
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	410	5	25	50
04678	Phenol	108-95-2	24	0.5	1	1
04678	Pyrene	129-00-0	100	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0088 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 05:18	Christopher G Torres	50
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 05:42	Christopher G Torres	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 05:18	Christopher G Torres	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 05:42	Christopher G Torres	500
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 13:28	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 07:43	Joseph M Gambler	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 16:28	Joseph M Gambler	250

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



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Sample Description: MW-10S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272165
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 14:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:17	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:41	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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



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Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272166
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 10:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	12	40	2
10335	Benzene	71-43-2	590	10	20	20
10335	Bromodichloromethane	75-27-4	N.D.	1	2	2
10335	Bromoform	75-25-2	N.D.	1	8	2
10335	Bromomethane	74-83-9	N.D.	1	2	2
10335	2-Butanone	78-93-3	N.D.	6	20	2
10335	Carbon Disulfide	75-15-0	N.D.	2	10	2
10335	Carbon Tetrachloride	56-23-5	N.D.	1	2	2
10335	Chlorobenzene	108-90-7	N.D.	1	2	2
10335	Chloroethane	75-00-3	N.D.	1	2	2
10335	Chloroform	67-66-3	N.D.	1	2	2
10335	Chloromethane	74-87-3	N.D.	1	2	2
10335	Dibromochloromethane	124-48-1	N.D.	1	2	2
10335	1,1-Dichloroethane	75-34-3	1 J	1	2	2
10335	1,2-Dichloroethane	107-06-2	N.D.	1	2	2
10335	1,1-Dichloroethene	75-35-4	N.D.	1	2	2
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	1	2	2
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	1	2	2
10335	1,2-Dichloropropane	78-87-5	N.D.	1	2	2
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	2	2
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	2	2
10335	Ethylbenzene	100-41-4	480	1	2	2
10335	2-Hexanone	591-78-6	N.D.	6	20	2
10335	4-Methyl-2-pentanone	108-10-1	N.D.	6	20	2
10335	Methylene Chloride	75-09-2	N.D.	4	8	2
10335	Styrene	100-42-5	N.D.	2	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	2	2
10335	Tetrachloroethene	127-18-4	N.D.	1	2	2
10335	Toluene	108-88-3	7	1	2	2
10335	1,1,1-Trichloroethane	71-55-6	N.D.	1	2	2
10335	1,1,2-Trichloroethane	79-00-5	N.D.	1	2	2
10335	Trichloroethene	79-01-6	N.D.	1	2	2
10335	Vinyl Chloride	75-01-4	N.D.	1	2	2
10335	Xylene (Total)	1330-20-7	45	1	2	2
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	63	0.1	0.5	1
04678	Acenaphthylene	208-96-8	1	0.1	0.5	1
04678	Anthracene	120-12-7	2	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	0.3 J	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	0.2 J	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	0.3 J	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	40	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272166
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 10:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.4 J	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	12	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	0.5 J	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	2	0.1	0.5	1
04678	Fluorene	86-73-7	23	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	110	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	2,600	5	25	50
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272166
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 10:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	7	0.1	0.5	1
04678	Phenol	108-95-2	0.5 J	0.5	1	1
04678	Pyrene	129-00-0	2	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0032 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/15/2016 23:48	Christopher G Torres	2
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 00:12	Christopher G Torres	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/15/2016 23:48	Christopher G Torres	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 00:12	Christopher G Torres	20
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 13:57	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 08:12	Joseph M Gambler	50

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



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Sample Description: MW-11S Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272166
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 10:35 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSY11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:20	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:43	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272167
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	2	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	0.7	0.1	0.5	1
04678	Acenaphthylene	208-96-8	0.1	J	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272167
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	0.8 J	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	0.1 J	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.3 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272167
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	0.0015 J	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0050 J	0.0032	0.0100	1
07055	Lead	7439-92-1	0.0092 J	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0125	0.0500	5
Reporting limits were raised due to interference from the sample matrix.						
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	0.0147	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/15/2016 23:25	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/15/2016 23:25	Christopher G Torres	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 14:26	Joseph M Gambler	1
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1

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



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Sample Description: MW-12D Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272167
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/16/2016 04:57	Matthew Machtinger	5
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:23	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:45	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272168
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	30	100	5
10335	Benzene	71-43-2	2,800	25	50	50
10335	Bromodichloromethane	75-27-4	N.D.	3	5	5
10335	Bromoform	75-25-2	N.D.	3	20	5
10335	Bromomethane	74-83-9	N.D.	3	5	5
10335	2-Butanone	78-93-3	N.D.	15	50	5
10335	Carbon Disulfide	75-15-0	N.D.	5	25	5
10335	Carbon Tetrachloride	56-23-5	N.D.	3	5	5
10335	Chlorobenzene	108-90-7	N.D.	3	5	5
10335	Chloroethane	75-00-3	N.D.	3	5	5
10335	Chloroform	67-66-3	N.D.	3	5	5
10335	Chloromethane	74-87-3	N.D.	3	5	5
10335	Dibromochloromethane	124-48-1	N.D.	3	5	5
10335	1,1-Dichloroethane	75-34-3	N.D.	3	5	5
10335	1,2-Dichloroethane	107-06-2	N.D.	3	5	5
10335	1,1-Dichloroethene	75-35-4	N.D.	3	5	5
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	3	5	5
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	3	5	5
10335	1,2-Dichloropropane	78-87-5	N.D.	3	5	5
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	3	5	5
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	3	5	5
10335	Ethylbenzene	100-41-4	3,000	25	50	50
10335	2-Hexanone	591-78-6	N.D.	15	50	5
10335	4-Methyl-2-pentanone	108-10-1	N.D.	15	50	5
10335	Methylene Chloride	75-09-2	N.D.	10	20	5
10335	Styrene	100-42-5	N.D.	5	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	3	5	5
10335	Tetrachloroethene	127-18-4	N.D.	3	5	5
10335	Toluene	108-88-3	38	3	5	5
10335	1,1,1-Trichloroethane	71-55-6	N.D.	3	5	5
10335	1,1,2-Trichloroethane	79-00-5	N.D.	3	5	5
10335	Trichloroethene	79-01-6	N.D.	3	5	5
10335	Vinyl Chloride	75-01-4	N.D.	3	5	5
10335	Xylene (Total)	1330-20-7	2,200	3	5	5
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	140	5	25	50
04678	Acenaphthylene	208-96-8	6	0.1	0.5	1
04678	Anthracene	120-12-7	17	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	7	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	7	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	7	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	3	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	3	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	82	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272168
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846	8270C	ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	9	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	1	0.1	0.5	1
04678	Dibenzofuran	132-64-9	31	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	4	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	16	0.1	0.5	1
04678	Fluorene	86-73-7	67	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	3	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	1,500	5	25	50
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	2	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	10,000	25	130	250
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272168
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	77	0.1	0.5	1
04678	Phenol	108-95-2	5	0.5	1	1
04678	Pyrene	129-00-0	16	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0128 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0040 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	0.0049 J	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 02:10	Christopher G Torres	5
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 02:33	Christopher G Torres	50

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



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Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272168
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 11:40 by BAS

Leidos Engineering, LLC

6310 Allentown Blvd.

Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS12S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 02:10	Christopher G Torres	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 02:33	Christopher G Torres	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/14/2016 14:55	Joseph M Gambler	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 08:41	Joseph M Gambler	50
04678	TCL SW846 8270C Water	SW-846 8270C	1	16068WAQ026	03/15/2016 16:57	Joseph M Gambler	250
00813	BNA Water Extraction	SW-846 3510C	1	16068WAQ026	03/09/2016 09:30	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:27	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:47	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-42D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272169
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 12:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	76	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	0.8	J	0.5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-42D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272169
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 12:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	11	32	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.5 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	11	32	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-42D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272169
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 12:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	0.1 J	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	0.3 J	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0135 J	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0037 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 12:41	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 12:41	Linda C Pape	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAZ026	03/12/2016 06:32	Catherine E Bachman	1
00813	BNA Water Extraction	SW-846 3510C	1	16066WAZ026	03/08/2016 09:00	Jessica M Velez	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1

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



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Sample Description: MW-42D Grab Groundwater
PGW - PassyunkLL Sample # WW 8272169
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/02/2016 12:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:30	Elaine F Stoltzfus	1
00259 01848	Mercury ICP-WW, 3005A (tot rec) - U3	SW-846 7470A SW-846 3005A	1 1	160675713002 160671848002	03/08/2016 11:49 03/07/2016 17:05	Damary Valentin Barbara A Kane	1 1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272170
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 11:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42R

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	80	12	40	2
10335	Benzene	71-43-2	120	1	2	2
10335	Bromodichloromethane	75-27-4	N.D.	1	2	2
10335	Bromoform	75-25-2	N.D.	1	8	2
10335	Bromomethane	74-83-9	N.D.	1	2	2
10335	2-Butanone	78-93-3	N.D.	6	20	2
10335	Carbon Disulfide	75-15-0	N.D.	2	10	2
10335	Carbon Tetrachloride	56-23-5	N.D.	1	2	2
10335	Chlorobenzene	108-90-7	N.D.	1	2	2
10335	Chloroethane	75-00-3	N.D.	1	2	2
10335	Chloroform	67-66-3	N.D.	1	2	2
10335	Chloromethane	74-87-3	N.D.	1	2	2
10335	Dibromochloromethane	124-48-1	N.D.	1	2	2
10335	1,1-Dichloroethane	75-34-3	N.D.	1	2	2
10335	1,2-Dichloroethane	107-06-2	N.D.	1	2	2
10335	1,1-Dichloroethene	75-35-4	N.D.	1	2	2
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	1	2	2
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	1	2	2
10335	1,2-Dichloropropane	78-87-5	N.D.	1	2	2
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	2	2
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	2	2
10335	Ethylbenzene	100-41-4	1,600	10	20	20
10335	2-Hexanone	591-78-6	N.D.	6	20	2
10335	4-Methyl-2-pentanone	108-10-1	N.D.	6	20	2
10335	Methylene Chloride	75-09-2	N.D.	4	8	2
10335	Styrene	100-42-5	N.D.	2	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	2	2
10335	Tetrachloroethene	127-18-4	N.D.	1	2	2
10335	Toluene	108-88-3	10	1	2	2
10335	1,1,1-Trichloroethane	71-55-6	N.D.	1	2	2
10335	1,1,2-Trichloroethane	79-00-5	N.D.	1	2	2
10335	Trichloroethene	79-01-6	N.D.	1	2	2
10335	Vinyl Chloride	75-01-4	N.D.	1	2	2
10335	Xylene (Total)	1330-20-7	270	1	2	2
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	74	0.1	0.5	1
04678	Acenaphthylene	208-96-8	15	0.1	0.5	1
04678	Anthracene	120-12-7	6	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	0.7	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	0.5	J	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	0.5	J	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	0.3	J	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	0.2	J	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	30	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272170
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 11:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42R

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.8	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	13	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	0.7 J	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	4	0.1	0.5	1
04678	Fluorene	86-73-7	24	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	0.3 J	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	200	1	5	10
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	2	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	3,400	10	51	100
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8272170
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016 11:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42R

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	30	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	3	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	0.0326	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0038 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 00:36	Christopher G Torres	2
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/16/2016 00:59	Christopher G Torres	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/16/2016 00:36	Christopher G Torres	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T160752AA	03/16/2016 00:59	Christopher G Torres	20
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAZ026	03/12/2016 07:01	Catherine E Bachman	1

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



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Sample Description: MW-42R Grab Groundwater
PGW - Passyunk**LL Sample #** WW 8272170
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/02/2016 11:55 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PS42R

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAZ026	03/13/2016 13:53	Catherine E Bachman	10
04678	TCL SW846 8270C Water	SW-846 8270C	1	16066WAZ026	03/13/2016 14:22	Catherine E Bachman	100
00813	BNA Water Extraction	SW-846 3510C	1	16066WAZ026	03/08/2016 09:00	Jessica M Velez	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:33	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	160675713002	03/08/2016 11:55	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160671848002	03/07/2016 17:05	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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

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Sample Description: Rinse Blank #3 Grab Water
PGW - Passyunk

LL Sample # WW 8272171
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 16:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSYR3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	1	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

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Sample Description: Rinse Blank #3 Grab Water
PGW - Passyunk

LL Sample # WW 8272171
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 16:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSYR3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: Rinse Blank #3 Grab Water
PGW - Passyunk

LL Sample # WW 8272171
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/03/2016 16:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSYR3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00064	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0020	0.0150	1
07053	Copper	7440-50-8	0.0076 J	0.0032	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0084	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160752AA	03/15/2016 23:01	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160752AA	03/15/2016 23:01	Christopher G Torres	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16069WAE026	03/11/2016 00:28	Ankitaben A Patel	1
00813	BNA Water Extraction	SW-846 3510C	1	16069WAE026	03/09/2016 16:00	Ryan A Schafran	1
07044	Antimony	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1

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



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Sample Description: Rinse Blank #3 Grab Water
PGW - PassyunkLL Sample # WW 8272171
LL Group # 1637604
Account # 02732**Project Name:** PGW - Passyunk

Collected: 03/03/2016 16:00 by BAS

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSYR3

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07047	Beryllium	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	160671848002	03/15/2016 05:37	Elaine F Stoltzfus	1
00259 01848	Mercury ICP-WW, 3005A (tot rec) - U3	SW-846 7470A SW-846 3005A	1 1	160675713002 160671848002	03/08/2016 10:54 03/07/2016 17:05	Damary Valentin Barbara A Kane	1 1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160675713002	03/07/2016 18:40	Barbara A Kane	1

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



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Sample Description: Trip Blank Water
PGW - Passyunk

LL Sample # WW 8272172
LL Group # 1637604
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/02/2016

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/04/2016 18:39

Reported: 03/23/2016 14:05

PSYT3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160751AA	03/15/2016 11:07	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160751AA	03/15/2016 11:07	Linda C Pape	1

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

Quality Control Summary

Client Name: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

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.

Method Blank

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
Batch number: T160751AA	Sample number(s): 8272155-8272158,8272162,8272169,8272172		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: T160752AA	Sample number(s): 8272159-8272161,8272163-8272168,8272170-8272171		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5

*- 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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: 16066WAJ026	Sample number(s): 8272155-8272158		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
Batch number: 16066WAZ026	Sample number(s): 8272169-8272170		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1

*- Outside of specification

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

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
Batch number: 16068WAQ026	Sample number(s): 8272159-8272168		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5

*- Outside of specification

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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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5

*- Outside of specification

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Quality Control Summary

Client Name: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
Batch number: 16069WAE026	Sample number(s): 8272171		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzo[furan]	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1

*- Outside of specification

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Quality Control Summary

Client Name: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
Naphthalene	0.2 J	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
	mg/l	mg/l	mg/l
Batch number: 160671848002	Sample number(s): 8272155-8272171		
Antimony	N.D.	0.0062	0.0200
Arsenic	N.D.	0.0078	0.0200
Beryllium	N.D.	0.0011	0.0050
Cadmium	N.D.	0.00064	0.0050
Chromium	N.D.	0.0020	0.0150
Copper	N.D.	0.0032	0.0100
Lead	N.D.	0.0051	0.0150
Nickel	N.D.	0.0025	0.0100
Selenium	N.D.	0.0082	0.0200
Silver	N.D.	0.0018	0.0050
Thallium	N.D.	0.0084	0.0300
Zinc	N.D.	0.0039	0.0200
Batch number: 160675713002	Sample number(s): 8272155-8272171		
Mercury	N.D.	0.000050	0.00020

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: T160751AA	Sample number(s): 8272155-8272158,8272162,8272169,8272172								
Acetone	150	198.17	150	176.39	132	118	58-138	12	30
Benzene	20	19.93	20	20.6	100	103	78-120	3	30
Bromodichloromethane	20	19.62	20	19.86	98	99	80-120	1	30
Bromoform	20	17.77	20	18.43	89	92	67-120	4	30
Bromomethane	20	19.47	20	19.53	97	98	53-130	0	30
2-Butanone	150	164.52	150	158.06	110	105	62-131	4	30
Carbon Disulfide	20	18.27	20	18.28	91	91	58-120	0	30
Carbon Tetrachloride	20	21.6	20	21.64	108	108	74-130	0	30
Chlorobenzene	20	19.96	20	20.72	100	104	80-120	4	30
Chloroethane	20	18.69	20	18.83	93	94	56-120	1	30

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Quality Control Summary

Client Name: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chloroform	20	21.15	20	20.94	106	105	80-120	1	30
Chloromethane	20	18.48	20	18.72	92	94	65-129	1	30
Dibromochloromethane	20	19.38	20	19.95	97	100	78-120	3	30
1,1-Dichloroethane	20	20.31	20	20.58	102	103	80-120	1	30
1,2-Dichloroethane	20	20.69	20	20.82	103	104	72-127	1	30
1,1-Dichloroethene	20	19.76	20	19.93	99	100	76-124	1	30
cis-1,2-Dichloroethene	20	20.75	20	20.47	104	102	80-120	1	30
trans-1,2-Dichloroethene	20	20.81	20	20.74	104	104	80-120	0	30
1,2-Dichloropropane	20	21.16	20	21.61	106	108	80-120	2	30
cis-1,3-Dichloropropene	20	20.64	20	21.02	103	105	80-120	2	30
trans-1,3-Dichloropropene	20	20.86	20	21.55	104	108	76-120	3	30
Ethylbenzene	20	20.96	20	21.42	105	107	78-120	2	30
2-Hexanone	100	101.92	100	106.74	102	107	35-138	5	30
4-Methyl-2-pentanone	100	102.31	100	102.74	102	103	47-133	0	30
Methylene Chloride	20	19.52	20	19.68	98	98	77-121	1	30
Styrene	20	20.22	20	21.77	101	109	80-120	7	30
1,1,2,2-Tetrachloroethane	20	19.87	20	19.97	99	100	72-120	0	30
Tetrachloroethene	20	20.45	20	22.35	102	112	80-129	9	30
Toluene	20	19.76	20	21.03	99	105	80-120	6	30
1,1,1-Trichloroethane	20	19.07	20	18.77	95	94	66-126	2	30
1,1,2-Trichloroethane	20	19.29	20	20.34	96	102	80-120	5	30
Trichloroethene	20	20.24	20	21.07	101	105	80-120	4	30
Vinyl Chloride	20	19.47	20	19.78	97	99	69-120	2	30
Xylene (Total)	60	60.48	60	64.18	101	107	80-120	6	30
Batch number: T160752AA	Sample number(s): 8272159-8272161,8272163-8272168,8272170-8272171								
Acetone	150	155.39	150	149.86	104	100	58-138	4	30
Benzene	20	21.01	20	20.46	105	102	78-120	3	30
Bromodichloromethane	20	19.53	20	19.26	98	96	80-120	1	30
Bromoform	20	18.51	20	17.99	93	90	67-120	3	30
Bromomethane	20	20.45	20	19.94	102	100	53-130	3	30
2-Butanone	150	146.71	150	148.23	98	99	62-131	1	30
Carbon Disulfide	20	18.22	20	18.07	91	90	58-120	1	30
Carbon Tetrachloride	20	22.01	20	20.97	110	105	74-130	5	30
Chlorobenzene	20	21.35	20	20.57	107	103	80-120	4	30
Chloroethane	20	19.32	20	18.92	97	95	56-120	2	30
Chloroform	20	21.33	20	21.26	107	106	80-120	0	30
Chloromethane	20	18.99	20	18.63	95	93	65-129	2	30
Dibromochloromethane	20	19.26	20	19.3	96	96	78-120	0	30
1,1-Dichloroethane	20	20.83	20	20.62	104	103	80-120	1	30
1,2-Dichloroethane	20	21.13	20	20.87	106	104	72-127	1	30
1,1-Dichloroethene	20	20.31	20	20	102	100	76-124	2	30
cis-1,2-Dichloroethene	20	20.89	20	20.79	104	104	80-120	0	30
trans-1,2-Dichloroethene	20	21.18	20	21.46	106	107	80-120	1	30
1,2-Dichloropropane	20	21.24	20	21.22	106	106	80-120	0	30
cis-1,3-Dichloropropene	20	20.52	20	20.44	103	102	80-120	0	30
trans-1,3-Dichloropropene	20	21.51	20	21.52	108	108	76-120	0	30
Ethylbenzene	20	22.1	20	21.5	111	107	78-120	3	30
2-Hexanone	100	100.8	100	102.7	101	103	35-138	2	30
4-Methyl-2-pentanone	100	99.45	100	99.33	99	99	47-133	0	30
Methylene Chloride	20	20.12	20	19.63	101	98	77-121	2	30
Styrene	20	21.88	20	21.38	109	107	80-120	2	30
1,1,2,2-Tetrachloroethane	20	19.42	20	18.99	97	95	72-120	2	30
Tetrachloroethene	20	22.57	20	21.69	113	108	80-129	4	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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Toluene	20	21.26	20	20.71	106	104	80-120	3	30
1,1,1-Trichloroethane	20	19.65	20	18.75	98	94	66-126	5	30
1,1,2-Trichloroethane	20	20.42	20	20.01	102	100	80-120	2	30
Trichloroethene	20	21.1	20	20.74	106	104	80-120	2	30
Vinyl Chloride	20	19.83	20	19.08	99	95	69-120	4	30
Xylene (Total)	60	65.28	60	65.59	109	109	80-120	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16066WAJ026		Sample number(s): 8272155-8272158							
Acenaphthene	50	52.71			105		69-123		
Acenaphthylene	50	54.85			110		67-125		
Anthracene	50	52.81			106		68-126		
Benzo(a)anthracene	50	50.55			101		69-133		
Benzo(a)pyrene	50	50.88			102		68-126		
Benzo(b)fluoranthene	50	51.4			103		71-131		
Benzo(g,h,i)perylene	50	56.11			112		62-132		
Benzo(k)fluoranthene	50	53.12			106		72-128		
4-Bromophenyl-phenylether	50	51.84			104		64-129		
Butylbenzylphthalate	50	48.07			96		56-124		
Di-n-butylphthalate	50	50.49			101		61-125		
Carbazole	50	54.26			109		64-126		
4-Chloro-3-methylphenol	50	52.38			105		65-125		
4-Chloroaniline	50	44.66			89		45-115		
bis(2-Chloroethoxy)methane	50	53.29			107		67-124		
bis(2-Chloroethyl)ether	50	51.42			103		65-120		
2-Chloronaphthalene	50	51.71			103		57-126		
2-Chlorophenol	50	52.7			105		59-120		
4-Chlorophenyl-phenylether	50	50.81			102		67-125		
2,2'-oxybis(1-Chloropropane)	50	51.36			103		56-128		
Chrysene	50	52.3			105		71-136		
Dibenzo(a,h)anthracene	50	57.1			114		64-133		
Dibenzofuran	50	52.02			104		67-120		
1,2-Dichlorobenzene	50	47.97			96		53-119		
1,3-Dichlorobenzene	50	45.54			91		53-111		
1,4-Dichlorobenzene	50	46.37			93		34-123		
3,3'-Dichlorobenzidine	50	34.09			68		39-118		
2,4-Dichlorophenol	50	52.52			105		66-126		
Diethylphthalate	50	46.92			94		55-124		
2,4-Dimethylphenol	50	49.23			98		63-117		
Dimethylphthalate	50	37.6			75		26-133		
4,6-Dinitro-2-methylphenol	50	53.07			106		64-124		
2,4-Dinitrophenol	100	95.18			95		42-129		
2,4-Dinitrotoluene	50	53.13			106		71-131		
2,6-Dinitrotoluene	50	54.25			109		71-133		
bis(2-Ethylhexyl)phthalate	50	48.75			98		66-130		
Fluoranthene	50	52.86			106		68-129		
Fluorene	50	51.59			103		71-127		
Hexachlorobenzene	50	50.01			100		64-128		
Hexachlorobutadiene	50	40.78			82		23-129		
Hexachlorocyclopentadiene	100	57.28			57		10-101		
Hexachloroethane	50	42.85			86		23-121		
Indeno(1,2,3-cd)pyrene	50	54.53			109		62-128		
Isophorone	50	54.71			109		68-125		

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2-Methylnaphthalene	50	49.97			100		61-117		
2-Methylphenol	50	50.73			101		54-122		
4-Methylphenol	50	49.75			100		44-114		
Naphthalene	50	50.81			102		62-121		
2-Nitroaniline	50	53.19			106		68-130		
3-Nitroaniline	50	50			100		58-122		
4-Nitroaniline	50	44.94			90		61-111		
Nitrobenzene	50	52.91			106		70-121		
2-Nitrophenol	50	55.15			110		67-131		
4-Nitrophenol	50	32.24			64		11-88		
N-Nitroso-di-n-propylamine	50	51.26			103		63-121		
N-Nitrosodiphenylamine	50	53.07			106		65-125		
Di-n-octylphthalate	50	55.17			110		73-131		
Pentachlorophenol	50	47.15			94		53-133		
Phenanthrene	50	51.34			103		65-120		
Phenol	50	31.35			63		19-82		
Pyrene	50	50.5			101		68-118		
1,2,4-Trichlorobenzene	50	47.91			96		59-117		
2,4,5-Trichlorophenol	50	53.24			106		68-126		
2,4,6-Trichlorophenol	50	54.14			108		71-130		
Batch number: 16066WAZ026	Sample number(s): 8272169-8272170								
Acenaphthene	50	50.61			101		69-123		
Acenaphthylene	50	54.13			108		67-125		
Anthracene	50	50.18			100		68-126		
Benzo(a)anthracene	50	52.5			105		69-133		
Benzo(a)pyrene	50	50.25			100		68-126		
Benzo(b)fluoranthene	50	49.92			100		71-131		
Benzo(g,h,i)perylene	50	55.38			111		62-132		
Benzo(k)fluoranthene	50	51.32			103		72-128		
4-Bromophenyl-phenylether	50	51.33			103		64-129		
Butylbenzylphthalate	50	49.51			99		56-124		
Di-n-butylphthalate	50	47.49			95		61-125		
Carbazole	50	50.61			101		64-126		
4-Chloro-3-methylphenol	50	50.04			100		65-125		
4-Chloroaniline	50	44.02			88		45-115		
bis(2-Chloroethoxy)methane	50	51			102		67-124		
bis(2-Chloroethyl)ether	50	48.87			98		65-120		
2-Chloronaphthalene	50	46.15			92		57-126		
2-Chlorophenol	50	49.88			100		59-120		
4-Chlorophenyl-phenylether	50	46.55			93		67-125		
2,2'-oxybis(1-Chloropropane)	50	47.64			95		56-128		
Chrysene	50	53.96			108		71-136		
Dibenzo(a,h)anthracene	50	55.15			110		64-133		
Dibenzofuran	50	50.3			101		67-120		
1,2-Dichlorobenzene	50	44.99			90		53-119		
1,3-Dichlorobenzene	50	42.26			85		53-111		
1,4-Dichlorobenzene	50	43.52			87		34-123		
3,3'-Dichlorobenzidine	50	42.25			85		39-118		
2,4-Dichlorophenol	50	50.38			101		66-126		
Diethylphthalate	50	44.5			89		55-124		
2,4-Dimethylphenol	50	44.15			88		63-117		
Dimethylphthalate	50	41.44			83		26-133		
4,6-Dinitro-2-methylphenol	50	52.82			106		64-124		

*- 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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2,4-Dinitrophenol	100	102.24			102		42-129		
2,4-Dinitrotoluene	50	48.55			97		71-131		
2,6-Dinitrotoluene	50	52.06			104		71-133		
bis(2-Ethylhexyl)phthalate	50	51.06			102		66-130		
Fluoranthene	50	49.07			98		68-129		
Fluorene	50	48.96			98		71-127		
Hexachlorobenzene	50	53			106		64-128		
Hexachlorobutadiene	50	38.74			77		23-129		
Hexachlorocyclopentadiene	100	57.81			58		10-101		
Hexachloroethane	50	38.24			76		23-121		
Indeno(1,2,3-cd)pyrene	50	52.53			105		62-128		
Isophorone	50	51.18			102		68-125		
2-Methylnaphthalene	50	46.43			93		61-117		
2-Methylphenol	50	48.29			97		54-122		
4-Methylphenol	50	45.51			91		44-114		
Naphthalene	50	47.96			96		62-121		
2-Nitroaniline	50	50.26			101		68-130		
3-Nitroaniline	50	47.83			96		58-122		
4-Nitroaniline	50	46.01			92		61-111		
Nitrobenzene	50	49.42			99		70-121		
2-Nitrophenol	50	52.57			105		67-131		
4-Nitrophenol	50	32.6			65		11-88		
N-Nitroso-di-n-propylamine	50	48.79			98		63-121		
N-Nitrosodiphenylamine	50	50.85			102		65-125		
Di-n-octylphthalate	50	49.27			99		73-131		
Pentachlorophenol	50	51.25			103		53-133		
Phenanthrone	50	49.78			100		65-120		
Phenol	50	32.9			66		19-82		
Pyrene	50	49.92			100		68-118		
1,2,4-Trichlorobenzene	50	44.75			90		59-117		
2,4,5-Trichlorophenol	50	52.46			105		68-126		
2,4,6-Trichlorophenol	50	56.25			113		71-130		
Batch number: 16068WAQ026	Sample number(s): 8272159-8272168								
Acenaphthene	50	49.35	50	51.95	99	104	69-123	5	30
Acenaphthylene	50	50.92	50	54.64	102	109	67-125	7	30
Anthracene	50	49.69	50	53.4	99	107	68-126	7	30
Benzo(a)anthracene	50	51.6	50	55.15	103	110	69-133	7	30
Benzo(a)pyrene	50	48.98	50	52.07	98	104	68-126	6	30
Benzo(b)fluoranthene	50	49.28	50	53.16	99	106	71-131	8	30
Benzo(g,h,i)perylene	50	50.92	50	53.64	102	107	62-132	5	30
Benzo(k)fluoranthene	50	51.02	50	53.19	102	106	72-128	4	30
4-Bromophenyl-phenylether	50	49.7	50	52.94	99	106	64-129	6	30
Butylbenzylphthalate	50	46.36	50	48.12	93	96	56-124	4	30
Di-n-butylphthalate	50	48.8	50	52.17	98	104	61-125	7	30
Carbazole	50	51.85	50	54.61	104	109	64-126	5	30
4-Chloro-3-methylphenol	50	48.78	50	51.1	98	102	65-125	5	30
4-Chloroaniline	50	44.18	50	45	88	90	45-115	2	30
bis(2-Chloroethoxy)methane	50	47.96	50	51.82	96	104	67-124	8	30
bis(2-Chloroethyl)ether	50	46.54	50	48.89	93	98	65-120	5	30
2-Chloronaphthalene	50	48.71	50	51.24	97	102	57-126	5	30
2-Chlorophenol	50	48.2	50	49.5	96	99	59-120	3	30
4-Chlorophenyl-phenylether	50	47.56	50	50.44	95	101	67-125	6	30
2,2'-oxybis(1-Chloropropane)	50	44.33	50	46.63	89	93	56-128	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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chrysene	50	52.64	50	55.53	105	111	71-136	5	30
Dibenz(a,h)anthracene	50	53.21	50	56.26	106	113	64-133	6	30
Dibenzofuran	50	48.69	50	51.32	97	103	67-120	5	30
1,2-Dichlorobenzene	50	43.41	50	46.23	87	92	53-119	6	30
1,3-Dichlorobenzene	50	41.49	50	43.61	83	87	53-111	5	30
1,4-Dichlorobenzene	50	42.25	50	44.28	85	89	34-123	5	30
3,3'-Dichlorobenzidine	50	36	50	35.15	72	70	39-118	2	30
2,4-Dichlorophenol	50	49.05	50	51.4	98	103	66-126	5	30
Diethylphthalate	50	40.86	50	42.84	82	86	55-124	5	30
2,4-Dimethylphenol	50	45.39	50	48.06	91	96	63-117	6	30
Dimethylphthalate	50	27.77	50	28.22	56	56	26-133	2	30
4,6-Dinitro-2-methylphenol	50	53.73	50	57.51	107	115	64-124	7	30
2,4-Dinitrophenol	100	92.16	100	94.99	92	95	42-129	3	30
2,4-Dinitrotoluene	50	49.5	50	51.96	99	104	71-131	5	30
2,6-Dinitrotoluene	50	51.31	50	54.04	103	108	71-133	5	30
bis(2-Ethylhexyl)phthalate	50	49.91	50	52.54	100	105	66-130	5	30
Fluoranthene	50	52.15	50	54.99	104	110	68-129	5	30
Fluorene	50	47.95	50	50.34	96	101	71-127	5	30
Hexachlorobenzene	50	50.26	50	53.58	101	107	64-128	6	30
Hexachlorobutadiene	50	36.46	50	40.63	73	81	23-129	11	30
Hexachlorocyclopentadiene	100	54.79	100	57.95	55	58	10-101	6	30
Hexachloroethane	50	37.75	50	40.16	75	80	23-121	6	30
Indeno(1,2,3-cd)pyrene	50	49.69	50	52.56	99	105	62-128	6	30
Isophorone	50	48.83	50	52.22	98	104	68-125	7	30
2-Methylnaphthalene	50	45.33	50	48.93	91	98	61-117	8	30
2-Methylphenol	50	46.33	50	47.93	93	96	54-122	3	30
4-Methylphenol	50	43.19	50	44.58	86	89	44-114	3	30
Naphthalene	50	46.05	50	49.58	92	99	62-121	7	30
2-Nitroaniline	50	51.12	50	54.74	102	109	68-130	7	30
3-Nitroaniline	50	48.66	50	49.41	97	99	58-122	2	30
4-Nitroaniline	50	42.7	50	43.67	85	87	61-111	2	30
Nitrobenzene	50	47.46	50	50.76	95	102	70-121	7	30
2-Nitrophenol	50	52.4	50	56.29	105	113	67-131	7	30
4-Nitrophenol	50	29.22	50	29.74	58	59	11-88	2	30
N-Nitroso-di-n-propylamine	50	46.44	50	48.77	93	98	63-121	5	30
N-Nitrosodiphenylamine	50	48.53	50	51.42	97	103	65-125	6	30
Di-n-octylphthalate	50	51.94	50	55.04	104	110	73-131	6	30
Pentachlorophenol	50	58.2	50	59.55	116	119	53-133	2	30
Phenanthrene	50	48.58	50	51.64	97	103	65-120	6	30
Phenol	50	26.36	50	28.75	53	57	19-82	9	30
Pyrene	50	47.44	50	50.15	95	100	68-118	6	30
1,2,4-Trichlorobenzene	50	43.27	50	46.74	87	93	59-117	8	30
2,4,5-Trichlorophenol	50	51.78	50	53.21	104	106	68-126	3	30
2,4,6-Trichlorophenol	50	52.54	50	54.36	105	109	71-130	3	30
Batch number: 16069WAE026	Sample number(s): 8272171								
Acenaphthene	50	51.38			103		69-123		
Acenaphthylene	50	53.66			107		67-125		
Anthracene	50	52.98			106		68-126		
Benzo(a)anthracene	50	43.57			87		69-133		
Benzo(a)pyrene	50	53.17			106		68-126		
Benzo(b)fluoranthene	50	55.41			111		71-131		
Benzo(g,h,i)perylene	50	54.55			109		62-132		
Benzo(k)fluoranthene	50	58.94			118		72-128		

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Bromophenyl-phenylether	50	52.03			104		64-129		
Butylbenzylphthalate	50	39.21			78		56-124		
Di-n-butylphthalate	50	48.32			97		61-125		
Carbazole	50	53.47			107		64-126		
4-Chloro-3-methylphenol	50	52.36			105		65-125		
4-Chloroaniline	50	46.15			92		45-115		
bis(2-Chloroethoxy)methane	50	50.83			102		67-124		
bis(2-Chloroethyl)ether	50	49.31			99		65-120		
2-Chloronaphthalene	50	48.15			96		57-126		
2-Chlorophenol	50	50.12			100		59-120		
4-Chlorophenyl-phenylether	50	50.43			101		67-125		
2,2'-oxybis(1-Chloropropane)	50	46.88			94		56-128		
Chrysene	50	44.59			89		71-136		
Dibenz(a,h)anthracene	50	54.76			110		64-133		
Dibenzofuran	50	50.93			102		67-120		
1,2-Dichlorobenzene	50	44.5			89		53-119		
1,3-Dichlorobenzene	50	42.93			86		53-111		
1,4-Dichlorobenzene	50	42.82			86		34-123		
3,3'-Dichlorobenzidine	50	30.66			61		39-118		
2,4-Dichlorophenol	50	53			106		66-126		
Diethylphthalate	50	45.86			92		55-124		
2,4-Dimethylphenol	50	48.93			98		63-117		
Dimethylphthalate	50	37.23			74		26-133		
4,6-Dinitro-2-methylphenol	50	53.5			107		64-124		
2,4-Dinitrophenol	100	99.31			99		42-129		
2,4-Dinitrotoluene	50	51.12			102		71-131		
2,6-Dinitrotoluene	50	52.45			105		71-133		
bis(2-Ethylhexyl)phthalate	50	40.71			81		66-130		
Fluoranthene	50	53.6			107		68-129		
Fluorene	50	50.3			101		71-127		
Hexachlorobenzene	50	51.21			102		64-128		
Hexachlorobutadiene	50	42.79			86		23-129		
Hexachlorocyclopentadiene	100	51.93			52		10-101		
Hexachloroethane	50	39.13			78		23-121		
Indeno(1,2,3-cd)pyrene	50	52			104		62-128		
Isophorone	50	50.65			101		68-125		
2-Methylnaphthalene	50	46.73			93		61-117		
2-Methylphenol	50	46.84			94		54-122		
4-Methylphenol	50	45.29			91		44-114		
Naphthalene	50	47.55			95		62-121		
2-Nitroaniline	50	51.71			103		68-130		
3-Nitroaniline	50	49.89			100		58-122		
4-Nitroaniline	50	46.89			94		61-111		
Nitrobenzene	50	48.9			98		70-121		
2-Nitrophenol	50	55.25			111		67-131		
4-Nitrophenol	50	25.27			51		11-88		
N-Nitroso-di-n-propylamine	50	48.29			97		63-121		
N-Nitrosodiphenylamine	50	52.08			104		65-125		
Di-n-octylphthalate	50	61.66			123		73-131		
Pentachlorophenol	50	51.77			104		53-133		
Phenanthrene	50	51.43			103		65-120		
Phenol	50	25.75			51		19-82		
Pyrene	50	50.95			102		68-118		

*- Outside of specification

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(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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2,4-Trichlorobenzene	50	45.81			92		59-117		
2,4,5-Trichlorophenol	50	53.84			108		68-126		
2,4,6-Trichlorophenol	50	56.22			112		71-130		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 160671848002	Sample number(s): 8272155-8272171								
Antimony	0.500	0.487			97		80-120		
Arsenic	0.150	0.153			102		80-120		
Beryllium	0.0500	0.0499			100		80-120		
Cadmium	0.0500	0.0513			103		80-120		
Chromium	0.200	0.200			100		80-120		
Copper	0.250	0.256			102		80-120		
Lead	0.150	0.156			104		80-120		
Nickel	0.500	0.517			103		80-120		
Selenium	0.150	0.143			95		80-120		
Silver	0.0500	0.0484			97		80-120		
Thallium	0.150	0.165			110		80-120		
Zinc	0.500	0.505			101		80-120		
Batch number: 160675713002	Sample number(s): 8272155-8272171								
Mercury	0.00100	0.000866			87		80-120		

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 16066WAJ026	Sample number(s): 8272155-8272158 UNSPK: P270001									
Acenaphthene	N.D.	50.4	47.53	50.4	53.2	94	106	69-123	11	30
Acenaphthylene	N.D.	50.4	49.32	50.4	54.56	98	108	67-125	10	30
Anthracene	N.D.	50.4	48.81	50.4	54.16	97	107	68-126	10	30
Benzo(a)anthracene	N.D.	50.4	47.33	50.4	51.5	94	102	69-133	8	30
Benzo(a)pyrene	N.D.	50.4	47.76	50.4	52.14	95	103	68-126	9	30
Benzo(b)fluoranthene	N.D.	50.4	48.74	50.4	54.02	97	107	71-131	10	30
Benzo(g,h,i)perylene	N.D.	50.4	51.64	50.4	56.12	102	111	62-132	8	30
Benzo(k)fluoranthene	N.D.	50.4	49.86	50.4	54.57	99	108	72-128	9	30
4-Bromophenyl-phenylether	N.D.	50.4	47.97	50.4	52.58	95	104	64-129	9	30
Butylbenzylphthalate	N.D.	50.4	45.12	50.4	49.44	90	98	56-124	9	30
Di-n-butylphthalate	N.D.	50.4	47.51	50.4	52.41	94	104	61-125	10	30
Carbazole	N.D.	50.4	49.57	50.4	55.72	98	111	64-126	12	30
4-Chloro-3-methylphenol	N.D.	50.4	49.96	50.4	54.05	99	107	65-125	8	30
4-Chloroaniline	N.D.	50.4	40.35	50.4	42.86	80	85	45-115	6	30
bis(2-Chloroethoxy)methane	N.D.	50.4	47.71	50.4	53.04	95	105	67-124	11	30
bis(2-Chloroethyl)ether	N.D.	50.4	46.25	50.4	51.25	92	102	65-120	10	30
2-Chloronaphthalene	N.D.	50.4	47.43	50.4	51.14	94	101	57-126	8	30
2-Chlorophenol	N.D.	50.4	48.65	50.4	49.87	97	99	59-120	2	30
4-Chlorophenyl-phenylether	N.D.	50.4	47.09	50.4	51.33	93	102	67-125	9	30
2,2'-oxybis(1-Chloropropane)	N.D.	50.4	44.77	50.4	50.72	89	101	56-128	12	30
Chrysene	N.D.	50.4	48.64	50.4	52.65	96	104	71-136	8	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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Dibenz(a,h)anthracene	N.D.	50.4	52.49	50.4	57.43	104	114	64-133	9	30
Dibenzofuran	N.D.	50.4	47.26	50.4	52.22	94	104	67-120	10	30
1,2-Dichlorobenzene	N.D.	50.4	42.39	50.4	48.53	84	96	53-119	14	30
1,3-Dichlorobenzene	N.D.	50.4	40.92	50.4	45.87	81	91	53-111	11	30
1,4-Dichlorobenzene	N.D.	50.4	41.59	50.4	46.84	83	93	34-123	12	30
3,3'-Dichlorobenzidine	N.D.	50.4	28.83	50.4	30.14	57	60	39-118	4	30
2,4-Dichlorophenol	N.D.	50.4	49.71	50.4	50.72	99	101	66-126	2	30
Diethylphthalate	N.D.	50.4	42.31	50.4	46.75	84	93	55-124	10	30
2,4-Dimethylphenol	N.D.	50.4	39.38	50.4	41.68	78	83	63-117	6	30
Dimethylphthalate	N.D.	50.4	34.79	50.4	38.1	69	76	26-133	9	30
4,6-Dinitro-2-methylphenol	N.D.	50.4	47.54	50.4	49.94	94	99	64-124	5	30
2,4-Dinitrophenol	N.D.	100.81	71.51	100.81	79.49	71	79	42-129	11	30
2,4-Dinitrotoluene	N.D.	50.4	46.99	50.4	52.58	93	104	71-131	11	30
2,6-Dinitrotoluene	N.D.	50.4	47.69	50.4	54.29	95	108	71-133	13	30
bis(2-Ethylhexyl)phthalate	N.D.	50.4	46.3	50.4	50.54	92	100	66-130	9	30
Fluoranthene	N.D.	50.4	49.65	50.4	54.42	99	108	68-129	9	30
Fluorene	N.D.	50.4	46.76	50.4	51.54	93	102	71-127	10	30
Hexachlorobenzene	N.D.	50.4	46.73	50.4	51.56	93	102	64-128	10	30
Hexachlorobutadiene	N.D.	50.4	37.41	50.4	40.85	74	81	23-129	9	30
Hexachlorocyclopentadiene	N.D.	100.81	58.09	100.81	63.83	58	63	10-101	9	30
Hexachloroethane	N.D.	50.4	37.64	50.4	43.45	75	86	23-121	14	30
Indeno(1,2,3-cd)pyrene	N.D.	50.4	49.52	50.4	54.37	98	108	62-128	9	30
Isophorone	N.D.	50.4	50.63	50.4	58.43	100	116	68-125	14	30
2-Methylnaphthalene	N.D.	50.4	44.83	50.4	52.31	89	104	61-117	15	30
2-Methylphenol	N.D.	50.4	45.92	50.4	48.65	91	97	54-122	6	30
4-Methylphenol	N.D.	50.4	43.88	50.4	48.7	87	97	44-114	10	30
Naphthalene	N.D.	50.4	45.62	50.4	51.39	91	102	62-121	12	30
2-Nitroaniline	N.D.	50.4	48.7	50.4	54.31	97	108	68-130	11	30
3-Nitroaniline	N.D.	50.4	45.62	50.4	49.13	91	97	58-122	7	30
4-Nitroaniline	N.D.	50.4	39.85	50.4	41.6	79	83	61-111	4	30
Nitrobenzene	N.D.	50.4	47.04	50.4	55.57	93	110	70-121	17	30
2-Nitrophenol	N.D.	50.4	56.12	50.4	59.79	111	119	67-131	6	30
4-Nitrophenol	N.D.	50.4	31.47	50.4	33.39	62	66	11-88	6	30
N-Nitroso-di-n-propylamine	N.D.	50.4	43.61	50.4	53.55	87	106	63-121	20	30
N-Nitrosodiphenylamine	N.D.	50.4	47.89	50.4	54.25	95	108	65-125	12	30
Di-n-octylphthalate	N.D.	50.4	52.52	50.4	59.66	104	118	73-131	13	30
Pentachlorophenol	N.D.	50.4	35.75	50.4	40.96	71	81	53-133	14	30
Phenanthrene	N.D.	50.4	47.53	50.4	52.09	94	103	65-120	9	30
Phenol	N.D.	50.4	30.59	50.4	30.84	61	61	19-82	1	30
Pyrene	N.D.	50.4	46.67	50.4	51.62	93	102	68-118	10	30
1,2,4-Trichlorobenzene	N.D.	50.4	43.32	50.4	48.27	86	96	59-117	11	30
2,4,5-Trichlorophenol	N.D.	50.4	50.7	50.4	52.06	101	103	68-126	3	30
2,4,6-Trichlorophenol	N.D.	50.4	52.09	50.4	53.65	103	106	71-130	3	30
Batch number: 16066WAZ026	Sample number(s): 8272169-8272170 UNSPK: P66WZUS									
Acenaphthene	73.22	50.4	130.38	51.02	138.15	113	127*	69-123	6	30
Acenaphthylene	1.08	50.4	54.07	51.02	59.32	105	114	67-125	9	30
Anthracene	3.95	50.4	56.26	51.02	59	104	108	68-126	5	30
Benzo(a)anthracene	0.417	50.4	54.04	51.02	58.9	106	115	69-133	9	30
Benzo(a)pyrene	0.244	50.4	49.96	51.02	52.17	99	102	68-126	4	30
Benzo(b)fluoranthene	0.421	50.4	49.58	51.02	53.48	98	104	71-131	8	30
Benzo(g,h,i)perylene	N.D.	50.4	52.27	51.02	55.02	104	108	62-132	5	30
Benzo(k)fluoranthene	0.176	50.4	51.87	51.02	52.54	103	103	72-128	1	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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
4-Bromophenyl-phenylether	N.D.	50.4	51.21	51.02	54.43	102	107	64-129	6	30
Butylbenzylphthalate	N.D.	50.4	51.46	51.02	51.26	102	100	56-124	0	30
Di-n-butylphthalate	N.D.	50.4	49.31	51.02	52.58	98	103	61-125	6	30
Carbazole	27.71	50.4	81.27	51.02	88.16	106	118	64-126	8	30
4-Chloro-3-methylphenol	N.D.	50.4	53.1	51.02	52.74	105	103	65-125	1	30
4-Chloroaniline	N.D.	50.4	46.61	51.02	49.85	92	98	45-115	7	30
bis(2-Chloroethoxy)methane	N.D.	50.4	49.91	51.02	55.06	99	108	67-124	10	30
bis(2-Chloroethyl)ether	N.D.	50.4	45.48	51.02	48.39	90	95	65-120	6	30
2-Chloronaphthalene	N.D.	50.4	47.11	51.02	51.96	93	102	57-126	10	30
2-Chlorophenol	N.D.	50.4	50.68	51.02	50.75	101	99	59-120	0	30
4-Chlorophenyl-phenylether	N.D.	50.4	47	51.02	50.61	93	99	67-125	7	30
2,2'-oxybis(1-Chloropropane)	N.D.	50.4	47.14	51.02	49.87	94	98	56-128	6	30
Chrysene	0.525	50.4	55.25	51.02	59.43	109	115	71-136	7	30
Dibenz(a,h)anthracene	N.D.	50.4	52.53	51.02	54.6	104	107	64-133	4	30
Dibenzofuran	28.18	50.4	84.45	51.02	88.35	112	118	67-120	5	30
1,2-Dichlorobenzene	N.D.	50.4	44.75	51.02	48	89	94	53-119	7	30
1,3-Dichlorobenzene	N.D.	50.4	42.27	51.02	44.2	84	87	53-111	4	30
1,4-Dichlorobenzene	N.D.	50.4	43.13	51.02	46.14	86	90	34-123	7	30
3,3'-Dichlorobenzidine	N.D.	50.4	47.91	51.02	53.68	95	105	39-118	11	30
2,4-Dichlorophenol	N.D.	50.4	52.36	51.02	54.57	104	107	66-126	4	30
Diethylphthalate	N.D.	50.4	42.26	51.02	38.31	84	75	55-124	10	30
2,4-Dimethylphenol	0.648	50.4	48.58	51.02	50.78	95	98	63-117	4	30
Dimethylphthalate	N.D.	50.4	41.57	51.02	26.68	82	52	26-133	44*	30
4,6-Dinitro-2-methylphenol	N.D.	50.4	55.84	51.02	56.88	111	111	64-124	2	30
2,4-Dinitrophenol	N.D.	100.81	102.41	102.04	99.08	102	97	42-129	3	30
2,4-Dinitrotoluene	N.D.	50.4	46.77	51.02	46.91	93	92	71-131	0	30
2,6-Dinitrotoluene	N.D.	50.4	47.46	51.02	49.5	94	97	71-133	4	30
bis(2-Ethylhexyl)phthalate	N.D.	50.4	49.79	51.02	54.55	99	107	66-130	9	30
Fluoranthene	6.70	50.4	59.64	51.02	65.01	105	114	68-129	9	30
Fluorene	36.26	50.4	86.77	51.02	90.93	100	107	71-127	5	30
Hexachlorobenzene	N.D.	50.4	58.02	51.02	61.06	115	120	64-128	5	30
Hexachlorobutadiene	N.D.	50.4	40.52	51.02	42.35	80	83	23-129	4	30
Hexachlorocyclopentadiene	N.D.	100.81	77.84	102.04	87.22	77	85	10-101	11	30
Hexachloroethane	N.D.	50.4	39.41	51.02	41.38	78	81	23-121	5	30
Indeno(1,2,3-cd)pyrene	N.D.	50.4	50.17	51.02	52.54	100	103	62-128	5	30
Isophorone	N.D.	50.4	50.85	51.02	55.47	101	109	68-125	9	30
2-Methylnaphthalene	N.D.	50.4	47.55	51.02	50.46	94	99	61-117	6	30
2-Methylphenol	N.D.	50.4	49.01	51.02	49.25	97	97	54-122	0	30
4-Methylphenol	N.D.	50.4	49.25	51.02	47.8	98	94	44-114	3	30
Naphthalene	N.D.	50.4	47.63	51.02	51.67	94	101	62-121	8	30
2-Nitroaniline	N.D.	50.4	47.94	51.02	51.51	95	101	68-130	7	30
3-Nitroaniline	N.D.	50.4	48.06	51.02	47.41	95	93	58-122	1	30
4-Nitroaniline	N.D.	50.4	45.9	51.02	47.59	91	93	61-111	4	30
Nitrobenzene	N.D.	50.4	49.6	51.02	54.75	98	107	70-121	10	30
2-Nitrophenol	N.D.	50.4	52.9	51.02	55.55	105	109	67-131	5	30
4-Nitrophenol	N.D.	50.4	37.01	51.02	35.56	73	70	11-88	4	30
N-Nitroso-di-n-propylamine	N.D.	50.4	49.1	51.02	50.98	97	100	63-121	4	30
N-Nitrosodiphenylamine	N.D.	50.4	51.9	51.02	55.59	103	109	65-125	7	30
Di-n-octylphthalate	N.D.	50.4	49.39	51.02	50.4	98	99	73-131	2	30
Pentachlorophenol	N.D.	50.4	61.26	51.02	60.78	122	119	53-133	1	30
Phenanthrene	16.33	50.4	76.31	51.02	83.21	119	131*	65-120	9	30
Phenol	N.D.	50.4	37.63	51.02	35.2	75	69	19-82	7	30
Pyrene	5.43	50.4	53.79	51.02	57.08	96	101	68-118	6	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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,2,4-Trichlorobenzene	N.D.	50.4	45.23	51.02	48.73	90	96	59-117	7	30
2,4,5-Trichlorophenol	N.D.	50.4	51.8	51.02	53.15	103	104	68-126	3	30
2,4,6-Trichlorophenol	N.D.	50.4	58.07	51.02	61.06	115	120	71-130	5	30
Batch number: 16069WAE026	Sample number(s): 8272171 UNSPK: P272195									
Acenaphthene	N.D.	52.08	57.36	51.23	53.14	110	104	69-123	8	30
Acenaphthylene	N.D.	52.08	60.31	51.23	55.97	116	109	67-125	7	30
Anthracene	N.D.	52.08	58.33	51.23	54.41	112	106	68-126	7	30
Benzo(a)anthracene	N.D.	52.08	51.45	51.23	47.57	99	93	69-133	8	30
Benzo(a)pyrene	N.D.	52.08	52.92	51.23	50.01	102	98	68-126	6	30
Benzo(b)fluoranthene	N.D.	52.08	57.23	51.23	57.82	110	113	71-131	1	30
Benzo(g,h,i)perylene	N.D.	52.08	58.09	51.23	51.66	112	101	62-132	12	30
Benzo(k)fluoranthene	N.D.	52.08	61.09	51.23	59.89	117	117	72-128	2	30
4-Bromophenyl-phenylether	N.D.	52.08	56.73	51.23	53.52	109	104	64-129	6	30
Butylbenzylphthalate	N.D.	52.08	47.05	51.23	42.55	90	83	56-124	10	30
Di-n-butylphthalate	N.D.	52.08	54.44	51.23	49.94	105	97	61-125	9	30
Carbazole	N.D.	52.08	59.73	51.23	54.95	115	107	64-126	8	30
4-Chloro-3-methylphenol	N.D.	52.08	38.44	51.23	37.56	74	73	65-125	2	30
4-Chloroaniline	N.D.	52.08	50.23	51.23	47.46	96	93	45-115	6	30
bis(2-Chloroethoxy)methane	N.D.	52.08	57.66	51.23	51.66	111	101	67-124	11	30
bis(2-Chloroethyl)ether	N.D.	52.08	54.21	51.23	50.58	104	99	65-120	7	30
2-Chloronaphthalene	N.D.	52.08	53.63	51.23	50.65	103	99	57-126	6	30
2-Chlorophenol	N.D.	52.08	45.42	51.23	43.64	87	85	59-120	4	30
4-Chlorophenyl-phenylether	N.D.	52.08	54.83	51.23	51.79	105	101	67-125	6	30
2,2'-oxybis(1-Chloropropane)	N.D.	52.08	53.31	51.23	49.59	102	97	56-128	7	30
Chrysene	N.D.	52.08	52.94	51.23	48.48	102	95	71-136	9	30
Dibenz(a,h)anthracene	N.D.	52.08	60.35	51.23	53.81	116	105	64-133	11	30
Dibenzofuran	N.D.	52.08	56.09	51.23	52.52	108	103	67-120	7	30
1,2-Dichlorobenzene	N.D.	52.08	53.23	51.23	48.45	102	95	53-119	9	30
1,3-Dichlorobenzene	N.D.	52.08	50.52	51.23	46.3	97	90	53-111	9	30
1,4-Dichlorobenzene	N.D.	52.08	51.79	51.23	47.01	99	92	34-123	10	30
3,3'-Dichlorobenzidine	N.D.	52.08	35.35	51.23	33.72	68	66	39-118	5	30
2,4-Dichlorophenol	N.D.	52.08	45.56	51.23	42.49	87	83	66-126	7	30
Diethylphthalate	N.D.	52.08	48.94	51.23	44.9	94	88	55-124	9	30
2,4-Dimethylphenol	N.D.	52.08	28.86	51.23	24.23	55*	47*	63-117	17	30
Dimethylphthalate	N.D.	52.08	40.33	51.23	35.33	77	69	26-133	13	30
4,6-Dinitro-2-methylphenol	N.D.	52.08	53.02	51.23	43.13	102	84	64-124	21	30
2,4-Dinitrophenol	N.D.	104.17	68.76	102.46	31.15	66	30*	42-129	75*	30
2,4-Dinitrotoluene	N.D.	52.08	56.92	51.23	51.89	109	101	71-131	9	30
2,6-Dinitrotoluene	N.D.	52.08	58.74	51.23	53.19	113	104	71-133	10	30
bis(2-Ethylhexyl)phthalate	N.D.	52.08	48.24	51.23	43.04	93	84	66-130	11	30
Fluoranthene	N.D.	52.08	57.98	51.23	53.19	111	104	68-129	9	30
Fluorene	N.D.	52.08	54.6	51.23	52.02	105	102	71-127	5	30
Hexachlorobenzene	N.D.	52.08	55.96	51.23	52.65	107	103	64-128	6	30
Hexachlorobutadiene	N.D.	52.08	47.94	51.23	44.29	92	86	23-129	8	30
Hexachlorocyclopentadiene	N.D.	104.17	67.74	102.46	64.74	65	63	10-101	5	30
Hexachloroethane	N.D.	52.08	49.2	51.23	44.46	94	87	23-121	10	30
Indeno(1,2,3-cd)pyrene	N.D.	52.08	56.48	51.23	50.1	108	98	62-128	12	30
Isophorone	N.D.	52.08	57.41	51.23	53.21	110	104	68-125	8	30
2-Methylnaphthalene	N.D.	52.08	54.47	51.23	49.62	105	97	61-117	9	30
2-Methylphenol	N.D.	52.08	33.17	51.23	32.3	64	63	54-122	3	30
4-Methylphenol	N.D.	52.08	32.69	51.23	31.31	63	61	44-114	4	30
Naphthalene	N.D.	52.08	54.85	51.23	50.57	105	99	62-121	8	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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
2-Nitroaniline	N.D.	52.08	55.73	51.23	52.97	107	103	68-130	5	30
3-Nitroaniline	N.D.	52.08	55.03	51.23	51.16	106	100	58-122	7	30
4-Nitroaniline	N.D.	52.08	49.95	51.23	48.34	96	94	61-111	3	30
Nitrobenzene	N.D.	52.08	55.77	51.23	52.27	107	102	70-121	6	30
2-Nitrophenol	N.D.	52.08	58.3	51.23	57.43	112	112	67-131	1	30
4-Nitrophenol	N.D.	52.08	29.55	51.23	23.33	57	46	11-88	24	30
N-Nitroso-di-n-propylamine	N.D.	52.08	54.62	51.23	50.71	105	99	63-121	7	30
N-Nitrosodiphenylamine	N.D.	52.08	56.57	51.23	53.6	109	105	65-125	5	30
Di-n-octylphthalate	N.D.	52.08	62.82	51.23	60.1	121	117	73-131	4	30
Pentachlorophenol	N.D.	52.08	32.5	51.23	28.5	62	56	53-133	13	30
Phenanthrene	N.D.	52.08	56.51	51.23	52.75	108	103	65-120	7	30
Phenol	N.D.	52.08	23.62	51.23	23	45	45	19-82	3	30
Pyrene	N.D.	52.08	55.16	51.23	52.1	106	102	68-118	6	30
1,2,4-Trichlorobenzene	N.D.	52.08	54.54	51.23	49.14	105	96	59-117	10	30
2,4,5-Trichlorophenol	N.D.	52.08	47.18	51.23	46.81	91	91	68-126	1	30
2,4,6-Trichlorophenol	N.D.	52.08	40.69	51.23	39.14	78	76	71-130	4	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 160671848002		Sample number(s): 8272155-8272171 UNSPK: P272151								
Antimony	N.D.	0.500	0.510	0.500	0.498	102	100	75-125	2	20
Arsenic	0.0205	0.150	0.174	0.150	0.170	103	99	75-125	3	20
Beryllium	N.D.	0.0500	0.0503	0.0500	0.0500	101	100	75-125	1	20
Cadmium	N.D.	0.0500	0.0504	0.0500	0.0499	101	100	75-125	1	20
Chromium	N.D.	0.200	0.198	0.200	0.197	99	98	75-125	0	20
Copper	N.D.	0.250	0.257	0.250	0.254	103	101	75-125	1	20
Lead	N.D.	0.150	0.154	0.150	0.151	103	101	75-125	2	20
Nickel	N.D.	0.500	0.500	0.500	0.495	100	99	75-125	1	20
Selenium	N.D.	0.150	0.148	0.150	0.143	99	95	75-125	4	20
Silver	N.D.	0.0500	0.0507	0.0500	0.0492	101	98	75-125	3	20
Thallium	N.D.	0.150	0.158	0.150	0.158	106	105	75-125	0	20
Zinc	N.D.	0.500	0.502	0.500	0.501	100	100	75-125	0	20
Batch number: 160675713002		Sample number(s): 8272155-8272171 UNSPK: 8272171								
Mercury	N.D.	0.00100	0.000875	0.00100	0.000855	87	86	80-120	2	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 160671848002				
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	0.0205	0.0171	18 (1)	20
Beryllium	N.D.	N.D.	0 (1)	20
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	N.D.	N.D.	0 (1)	20
Copper	N.D.	0.00327	200* (1)	20
Lead	N.D.	N.D.	0 (1)	20
Nickel	N.D.	N.D.	0 (1)	20
Selenium	N.D.	N.D.	0 (1)	20

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Silver	N.D.	N.D.	0 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Zinc	N.D.	N.D.	0 (1)	20
Batch number: 160675713002	Sample number(s): 8272155-8272171 BKG: 8272171			
Mercury	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

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

Analysis Name: PPL/TCL Volatiles in Water
Batch number: T160751AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8272155	100	106	103	106
8272156	100	100	104	105
8272157	99	99	101	98
8272158	99	99	101	103
8272162	99	95	102	100
8272169	100	101	101	99
8272172	99	94	104	101
Blank	99	96	100	100
LCS	102	99	100	102
LCSD	99	97	104	105
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PPL/TCL Volatiles in Water
Batch number: T160752AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8272159	99	97	104	103
8272160	99	99	104	104
8272161	97	98	102	101
8272163	99	101	104	100
8272164	97	102	101	101
8272165	97	100	103	102
8272166	100	100	100	103
8272167	99	98	100	100
8272168	98	102	101	102
8272170	100	101	102	101
8272171	99	98	102	99
Blank	99	97	102	101
LCS	99	101	105	105
LCSD	98	99	103	105
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 8270C Water
Batch number: 16066WAJ026

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 14:05

Group Number: 1637604

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8272155	35	40	59	17*	84	85
8272156	6*	12	9*	91	88	89
8272157	5*	4*	31	83	82	85
8272158	58	51	80	1*	85	86
Blank	57	40	82	74	74	77
LCS	73	50	93	90	89	77
MS	63	50	87	79	79	81
MSD	66	50	89	95	89	87
Limits:	10-103	10-85	22-150	46-128	61-112	41-125

Analysis Name: TCL SW846 8270C Water
Batch number: 16066WAZ026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8272169	56	63	84	89	87	90
8272170	72	66	95	93	93	93
Blank	71	54	91	86	87	86
LCS	72	56	86	86	89	91
MS	77	64	85	84	87	87
MSD	76	59	85	93	93	88
Limits:	10-103	10-85	22-150	46-128	61-112	41-125

Analysis Name: TCL SW846 8270C Water
Batch number: 16068WAQ026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8272159	4*	3*	3*	92	80	79
8272160	39	40	79	115	89	91
8272161	37	36	85	106	86	93
8272162	60	44	88	86	88	92
8272163	41	37	86	91	77	78
8272164	6*	4*	12*	106	88	93
8272165	34	45	95	2*	75	88
8272166	8*	7*	44	45*	82	88
8272167	66	58	95	0*	86	89
8272168	51	44	99	27*	81	87
Blank	62	45	93	78	78	94
LCS	65	47	95	84	86	86
LCSD	69	51	100	90	89	87
Limits:	10-103	10-85	22-150	46-128	61-112	41-125

Analysis Name: TCL SW846 8270C Water
Batch number: 16069WAE026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8272171	51	34	90	79	84	89
Blank	57	37	96	96	95	102
LCS	60	41	99	86	88	92
MS	50	36	60	95	93	95
MSD	49	35	59	89	88	86
Limits:	10-103	10-85	22-150	46-128	61-112	41-125

*- 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.

Environmental Analysis Request/Chain of Custody



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Acct. # 02732 Group # 1637604 Sample # 8272155-72

COC 1 of 2

COC # 492418

Client Information				Matrix			Analysis Requested				For Lab Use Only					
Client:		Acct. #:		Matrix			Preservation Codes									
Leidos, Inc.		02732		Sediment <input checked="" type="checkbox"/>	Potable <input type="checkbox"/>	Ground <input checked="" type="checkbox"/>	Surface <input type="checkbox"/>	TCL 3.2	VOCs	3.2		FSC:				
Project Name/#:		PWSID #:		Soil <input type="checkbox"/>	Water <input type="checkbox"/>	NPDES <input type="checkbox"/>	Other: _____	TCL 3.2	Semi-Vocs			SCR#:				
Project Manager:		P.O. #:		Grab <input type="checkbox"/>	Composite <input type="checkbox"/>			PPL metals								
Sampler:		Quote #:														
State where samples were collected:		For Compliance:		Yes <input type="checkbox"/>	No <input type="checkbox"/>											
Sample Identification				Collected		Grab	Composite	Soil <input type="checkbox"/>	Water <input type="checkbox"/>	NPDES <input type="checkbox"/>	Other: _____	Total # of Containers	Preservation Codes			
				Date	Time											
MW-01D	3/2/16	1455	X		X			6	X	X	X					
MW-01S	3/2/16	1535	X		X			6	X	X	X					
MW-02D	3/2/16	1330	X		X			6	X	X	X					
MW-02S	3/2/16	1410	X		X			6	X	X	X					
MW-03D *	3/3/16	0835	X		X			6	X	X	X					
MW-03S	3/3/16	0825	X		X			7	X	X	X					
MW-04S	3/3/16	1530	X		X			10	X	X	X					
MW-04S DUP	3/3/16	1530	X		X			6	X	X	X					
MW-05S	3/3/16	0940	X		X			6	X	X	X					
MW-06S	3/3/16	1350	X		X			6	X	X	X					
Turnaround Time (TAT) Requested (please circle)								Relinquished by		Date	Time	Received by	Date	Time		
(Standard)								<i>Both Hep Storage</i>		-	-	/				
Rush								<i>Bal AD</i>		Date 3/4/16	Time 0800	<i>Gene</i>	Date 3.4.16	Time 1330		
(Rush TAT is subject to laboratory approval and surcharge.)								<i>Gene PA</i>		Date 3.4.16	Time 1339		Date	Time		
Date results are needed: _____								Relinquished by		Date	Time	Received by	Date	Time		
E-mail address: _____								Relinquished by		Date	Time	Received by	Date	Time		
Data Package Options (circle if required)								Relinquished by		Date	Time	Received by	Date	Time		
Type I (EPA Level 3 Equivalent/non-CLP)	Type VI (Raw Data Only)			EDD Required? Yes		No	Relinquished by		Commercial Carrier: UPS FedEx Other							
Type III (Reduced non-CLP)	NJ DKQP	TX TRRP-13	If yes, format: _____													
NYSDEC Category A or B	MA MCP	CT RCP	Site-Specific QC (MS/MSD/Dup)? Yes		No			Temperature upon receipt <i>out-out</i> °C								
(If yes, indicate QC sample and submit triplicate sample volume.)																

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Environmental Analysis Request/Chain of Custody



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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 02732 Group # 1637604 Sample # 8272155-72 COC 2 of 2

COC # 492421

Client Information				Matrix				Analysis Requested				For Lab Use Only	
Client:		Acct. #:		Matrix				Analysis Requested				Preservation Codes	
Leidos, Inc.		02732		<input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Other:				TCL VOCs 3.2 TCL 3.2 Semi VOCs PPL metals					
Project Name/#:		PWSID #:										FSC: SCR#: 184243	
Project Manager:		P.O. #:										Preservation Codes	
Matt Machusick		178382										H=HCl T=Thiosulfate N=NHO ₃ B=NaOH S=H ₂ SO ₄ O=Other	
Sampler:		Quote #:										Remarks	
BAS + SLE												PPL metals were field filtered	
State where samples were collected:		PA		For Compliance:		Yes <input type="checkbox"/> No <input type="checkbox"/>							
Sample Identification				Collected				Grab <input type="checkbox"/> Soil <input type="checkbox"/> Composite	Date	Time	Total # of Containers		
MW-07S	3/3/16	1250	X			X	4	X	X	X			
MW-10S	3/3/16	1455	X			X	7	X	X	X			
MW-11S	3/3/16	1035	X			X	6	X	X	X			
MW-12D	3/3/16	1140	X			X	6	X	X	X			
MW-12S	3/3/16	1140	X			X	6	X	X	X			
MW-42D	3/2/16	1200	X			X	6	X	X	X			
MW-42R	3/2/16	1155	X			X	6	X	X	X			
Rinse blank #2	3/2/16	11010	X			X	6	X	X	X			
Rinse blank #3	3/3/16	1400	X			X	4	X	X	X			
Trip Blank	—	—				X	2	X	X	X			
Turnaround Time (TAT) Requested (please circle)													
<input checked="" type="radio"/> Standard <input type="radio"/> Rush													
(Rush TAT is subject to laboratory approval and surcharge.)													
Date results are needed:													
E-mail address:													
Data Package Options (circle if required)													
Type I (EPA Level 3 Equivalent/non-CLP)	Type VI (Raw Data Only)												
Type III (Reduced non-CLP)	NJ DKQP	TX TRRP-13											
				EDD Required? <input checked="" type="radio"/> Yes <input type="radio"/> No								Relinquished by Commercial Carrier:	
				If yes, format: _____								UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/>	
				Site-Specific QC (MS/MSD/Dup)? Yes <input type="checkbox"/> No <input type="checkbox"/>								Temperature upon receipt <input type="checkbox"/> 0.4-0.8	
				(If yes, indicate QC sample and submit triplicate sample volume.)									

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7044 1115

Client: Leidos**Passyunk****Delivery and Receipt Information**

Delivery Method:	<u>ELLE Courier</u>	Arrival Timestamp:	<u>03/04/2016 18:39</u>
Number of Packages:	<u>3</u>	Number of Projects:	<u>2</u>
State/Province of Origin:	<u>PA</u>		

Arrival Condition Summary

Shipping Container Sealed:	No	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	No
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	2
Samples Intact:	Yes	Trip Blank Type:	HCI
Missing Samples:	Yes *	Air Quality Samples Present:	No
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Jordan Woods (6698) at 20:34 on 03/04/2016

Samples Chilled Details: Passyunk

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	0.4	DT	Wet	Y	Bagged	N
2	DT146	0.7	DT	Wet	Y	Bagged	N
3	DT146	0.6	DT	Wet	Y	Bagged	N

Missing Sample Details: Passyunk

*	<u>Sample ID on COC</u>	<u>Comments</u>
	MW-3D	

General Comments:	Rec'd 1 filtered Metals Batch QC bottle each for samples MW-3S and MW-10S
-------------------	---

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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Lancaster Laboratories
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Analysis Report

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ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Report Date: March 23, 2016

Project: PGW - Passyunk

Submittal Date: 03/18/2016
Group Number: 1642234
PO Number: P010160257
State of Sample Origin: PA

Client Sample Description

MW-3D Grab Groundwater
Trip Blank Water

Lancaster Labs (LL) #

8293127
8293128

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 Leidos Engineering, LLC

Attn: Matt Machusick

Respectfully Submitted,

Lynn M. Frederiksen
Principal Specialist Group Leader

(717) 556-7255

Project Name: PGW - Passyunk
LL Group #: 1642234

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

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

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 6010B, Metals Dissolved**

Batch #: 160791848001 (Sample number(s): 8293127 UNSPK: P293353 BKG: P293353)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Lead

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Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8293127
LL Group # 1642234
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/18/2016 10:56 by LC

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/18/2016 16:34

Reported: 03/23/2016 16:46

PSS3D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	0.3 J	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	0.1 J	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	0.2 J	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	2	4	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1

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

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8293127
LL Group # 1642234
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/18/2016 10:56 by LC

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/18/2016 16:34

Reported: 03/23/2016 16:46

PSS3D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
04678	Chrysene	218-01-9	0.3 J	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	2 J	2	5	1
04678	Fluoranthene	206-44-0	0.2 J	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					

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



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Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8293127
LL Group # 1642234
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/18/2016 10:56 by LC

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/18/2016 16:34

Reported: 03/23/2016 16:46

PSS3D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/l	ug/l	ug/l	
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	0.7	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0062	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0078	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.0011	0.0050	1
07049	Cadmium	7440-43-9	0.00079 J	0.00064	0.0050	1
07051	Chromium	7440-47-3	0.0027 J	0.0020	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0032	0.0100	1
07055	Lead	7439-92-1	0.0059 J	0.0051	0.0150	1
07061	Nickel	7440-02-0	0.0038 J	0.0025	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0082	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0018	0.0050	1
07022	Thallium	7440-28-0	0.0139 J	0.0084	0.0300	1
07072	Zinc	7440-66-6	0.0161 J	0.0039	0.0200	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

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160813AA	03/22/2016 02:20	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160813AA	03/22/2016 02:20	Kevin A Sposito	1
04678	TCL SW846 8270C Water	SW-846 8270C	1	16079WAE026	03/22/2016 18:26	Catherine E Bachman	1
00813	BNA Water Extraction	SW-846 3510C	1	16079WAE026	03/21/2016 09:00	Jessica M Velez	1
07044	Antimony	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07035	Arsenic	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07049	Cadmium	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1

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



Lancaster Laboratories
Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8293127
LL Group # 1642234
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/18/2016 10:56 by LC

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/18/2016 16:34

Reported: 03/23/2016 16:46

PSS3D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07053	Copper	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07061	Nickel	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07022	Thallium	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
07072	Zinc	SW-846 6010B	1	160791848001	03/22/2016 12:58	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	160795713002	03/22/2016 10:18	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	160791848001	03/21/2016 10:41	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	160795713002	03/21/2016 13:25	James L Mertz	1

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



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Sample Description: Trip Blank Water
PGW - Passyunk

LL Sample # WW 8293128
LL Group # 1642234
Account # 02732

Project Name: PGW - Passyunk

Collected: 03/18/2016

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 03/18/2016 16:34

Reported: 03/23/2016 16:46

PSSTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	T160813AA	03/21/2016 22:02	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T160813AA	03/21/2016 22:02	Kevin A Sposito	1

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

Quality Control Summary

Client Name: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

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.

Method Blank

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
Batch number: T160813AA	Sample number(s): 8293127-8293128		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: 16079WAE026	Sample number(s): 8293127		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5

*- 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.

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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
	mg/l	mg/l	mg/l
Batch number: 160791848001	Sample number(s): 8293127		
Antimony	N.D.	0.0062	0.0200
Arsenic	N.D.	0.0078	0.0200
Beryllium	N.D.	0.0011	0.0050
Cadmium	N.D.	0.00064	0.0050
Chromium	N.D.	0.0020	0.0150
Copper	N.D.	0.0032	0.0100
Lead	N.D.	0.0051	0.0150
Nickel	N.D.	0.0025	0.0100
Selenium	N.D.	0.0082	0.0200
Silver	N.D.	0.0018	0.0050
Thallium	N.D.	0.0084	0.0300
Zinc	N.D.	0.0039	0.0200
Batch number: 160795713002	Sample number(s): 8293127		
Mercury	N.D.	0.000050	0.00020

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: T160813AA	Sample number(s): 8293127-8293128								
Acetone	150	161.54	150	200.15	108	133	58-138	21	30
Benzene	20	20.45	20	20.5	102	102	78-120	0	30
Bromodichloromethane	20	20.52	20	19.73	103	99	80-120	4	30
Bromoform	20	16.45	20	16.54	82	83	67-120	1	30
Bromomethane	20	20.4	20	20.01	102	100	53-130	2	30
2-Butanone	150	155.91	150	165.11	104	110	62-131	6	30
Carbon Disulfide	20	17.93	20	17.6	90	88	58-120	2	30
Carbon Tetrachloride	20	24.03	20	23.25	120	116	74-130	3	30
Chlorobenzene	20	20.51	20	20.28	103	101	80-120	1	30
Chloroethane	20	19.79	20	19.41	99	97	56-120	2	30
Chloroform	20	22.32	20	22.05	112	110	80-120	1	30
Chloromethane	20	18.82	20	18.35	94	92	65-129	3	30
Dibromochloromethane	20	18.94	20	17.8	95	89	78-120	6	30
1,1-Dichloroethane	20	20.77	20	20.56	104	103	80-120	1	30
1,2-Dichloroethane	20	24.33	20	23.64	122	118	72-127	3	30
1,1-Dichloroethene	20	19.63	20	19.71	98	99	76-124	0	30
cis-1,2-Dichloroethene	20	20.73	20	20.84	104	104	80-120	1	30
trans-1,2-Dichloroethene	20	21.2	20	20.41	106	102	80-120	4	30
1,2-Dichloropropane	20	22.43	20	22.35	112	112	80-120	0	30
cis-1,3-Dichloropropene	20	20.65	20	20.12	103	101	80-120	3	30
trans-1,3-Dichloropropene	20	20.73	20	20.47	104	102	76-120	1	30
Ethylbenzene	20	21.11	20	20.61	106	103	78-120	2	30
2-Hexanone	100	100.78	100	101.7	101	102	35-138	1	30
4-Methyl-2-pentanone	100	101.8	100	100.92	102	101	47-133	1	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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Methylene Chloride	20	19.48	20	19.37	97	97	77-121	1	30
Styrene	20	20.77	20	20.5	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	20	18.8	20	18.38	94	92	72-120	2	30
Tetrachloroethene	20	21.83	20	20.81	109	104	80-129	5	30
Toluene	20	20.35	20	19.74	102	99	80-120	3	30
1,1,1-Trichloroethane	20	20.97	20	20.2	105	101	66-126	4	30
1,1,2-Trichloroethane	20	20.58	20	19.85	103	99	80-120	4	30
Trichloroethene	20	22.09	20	21.7	110	109	80-120	2	30
Vinyl Chloride	20	20.58	20	19.94	103	100	69-120	3	30
Xylene (Total)	60	62.54	60	61.07	104	102	80-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16079WAE026	Sample number(s): 8293127								
Acenaphthene	50	52.32			105		69-123		
Acenaphthylene	50	56.51			113		67-125		
Anthracene	50	52.13			104		68-126		
Benzo(a)anthracene	50	50.71			101		69-133		
Benzo(a)pyrene	50	50.54			101		68-126		
Benzo(b)fluoranthene	50	50.87			102		71-131		
Benzo(g,h,i)perylene	50	53.2			106		62-132		
Benzo(k)fluoranthene	50	51.42			103		72-128		
4-Bromophenyl-phenylether	50	51.66			103		64-129		
Butylbenzylphthalate	50	49.85			100		56-124		
Di-n-butylphthalate	50	50.84			102		61-125		
Carbazole	50	52.83			106		64-126		
4-Chloro-3-methylphenol	50	51.93			104		65-125		
4-Chloroaniline	50	43.26			87		45-115		
bis(2-Chloroethoxy)methane	50	51.56			103		67-124		
bis(2-Chloroethyl)ether	50	49.85			100		65-120		
2-Chloronaphthalene	50	51.83			104		57-126		
2-Chlorophenol	50	49.72			99		59-120		
4-Chlorophenyl-phenylether	50	49.48			99		67-125		
2,2'-oxybis(1-Chloropropane)	50	49.47			99		56-128		
Chrysene	50	51.22			102		71-136		
Dibenz(a,h)anthracene	50	53.19			106		64-133		
Dibenzo-furan	50	51.17			102		67-120		
1,2-Dichlorobenzene	50	50.98			102		53-119		
1,3-Dichlorobenzene	50	48.22			96		53-111		
1,4-Dichlorobenzene	50	50.08			100		34-123		
3,3'-Dichlorobenzidine	50	37.45			75		39-118		
2,4-Dichlorophenol	50	52.26			105		66-126		
Diethylphthalate	50	52.22			104		55-124		
2,4-Dimethylphenol	50	49.21			98		63-117		
Dimethylphthalate	50	51.04			102		26-133		
4,6-Dinitro-2-methylphenol	50	56.03			112		64-124		
2,4-Dinitrophenol	100	114.31			114		42-129		
2,4-Dinitrotoluene	50	52.53			105		71-131		
2,6-Dinitrotoluene	50	52.48			105		71-133		
bis(2-Ethylhexyl)phthalate	50	48.67			97		66-130		
Fluoranthene	50	50.88			102		68-129		
Fluorene	50	50.03			100		71-127		
Hexachlorobenzene	50	51.99			104		64-128		
Hexachlorobutadiene	50	44.28			89		23-129		

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorocyclopentadiene	100	99.03			99		10-101		
Hexachloroethane	50	44.9			90		23-121		
Indeno(1,2,3-cd)pyrene	50	50.21			100		62-128		
Isophorone	50	52.76			106		68-125		
2-Methylnaphthalene	50	48.98			98		61-117		
2-Methylphenol	50	48.84			98		54-122		
4-Methylphenol	50	46.44			93		44-114		
Naphthalene	50	50.4			101		62-121		
2-Nitroaniline	50	50.61			101		68-130		
3-Nitroaniline	50	47.2			94		58-122		
4-Nitroaniline	50	48.98			98		61-111		
Nitrobenzene	50	51.38			103		70-121		
2-Nitrophenol	50	52.85			106		67-131		
4-Nitrophenol	50	35.56			71		11-88		
N-Nitroso-di-n-propylamine	50	50.72			101		63-121		
N-Nitrosodiphenylamine	50	52.29			105		65-125		
Di-n-octylphthalate	50	51.68			103		73-131		
Pentachlorophenol	50	63.16			126		53-133		
Phenanthrone	50	49.06			98		65-120		
Phenol	50	32.29			65		19-82		
Pyrene	50	49.55			99		68-118		
1,2,4-Trichlorobenzene	50	50.09			100		59-117		
2,4,5-Trichlorophenol	50	55.02			110		68-126		
2,4,6-Trichlorophenol	50	55.89			112		71-130		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 160791848001		Sample number(s): 8293127							
Antimony	0.500	0.487			97		80-120		
Arsenic	0.150	0.154			103		80-120		
Beryllium	0.0500	0.0473			95		80-120		
Cadmium	0.0500	0.0513			103		80-120		
Chromium	0.200	0.193			96		80-120		
Copper	0.250	0.250			100		80-120		
Lead	0.150	0.150			100		80-120		
Nickel	0.500	0.511			102		80-120		
Selenium	0.150	0.144			96		80-120		
Silver	0.0500	0.0497			99		80-120		
Thallium	0.150	0.178			119		80-120		
Zinc	0.500	0.492			98		80-120		
Batch number: 160795713002		Sample number(s): 8293127							
Mercury	0.00100	0.00107			107		80-120		

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
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Batch number: 16079WAE026 Sample number(s): 8293127 UNSPK: P288032

*- 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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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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Acenaphthene	N.D.	51.65	51.17	51.23	51.56	99	101	69-123	1	30
Acenaphthylene	N.D.	51.65	54.88	51.23	54.45	106	106	67-125	1	30
Anthracene	N.D.	51.65	50.3	51.23	52.13	97	102	68-126	4	30
Benzo(a)anthracene	N.D.	51.65	52.36	51.23	51.64	101	101	69-133	1	30
Benzo(a)pyrene	N.D.	51.65	50.62	51.23	50.13	98	98	68-126	1	30
Benzo(b)fluoranthene	N.D.	51.65	51.34	51.23	51.26	99	100	71-131	0	30
Benzo(g,h,i)perylene	N.D.	51.65	53.06	51.23	53.26	103	104	62-132	0	30
Benzo(k)fluoranthene	N.D.	51.65	51.66	51.23	51.72	100	101	72-128	0	30
4-Bromophenyl-phenylether	N.D.	51.65	51.04	51.23	52.87	99	103	64-129	4	30
Butylbenzylphthalate	N.D.	51.65	47.39	51.23	46.97	92	92	56-124	1	30
Di-n-butylphthalate	N.D.	51.65	46.72	51.23	48.6	90	95	61-125	4	30
Carbazole	1.32	51.65	51.6	51.23	53.79	97	102	64-126	4	30
4-Chloro-3-methylphenol	N.D.	51.65	54.49	51.23	54.91	105	107	65-125	1	30
4-Chloroaniline	N.D.	51.65	35.52	51.23	32.44	69	63	45-115	9	30
bis(2-Chloroethoxy)methane	N.D.	51.65	53.35	51.23	53.37	103	104	67-124	0	30
bis(2-Chloroethyl)ether	N.D.	51.65	48.57	51.23	49.79	94	97	65-120	2	30
2-Chloronaphthalene	N.D.	51.65	49.89	51.23	50.46	97	98	57-126	1	30
2-Chlorophenol	N.D.	51.65	48.71	51.23	49.16	94	96	59-120	1	30
4-Chlorophenyl-phenylether	N.D.	51.65	48.5	51.23	48.79	94	95	67-125	1	30
2,2'-oxybis(1-Chloropropane)	N.D.	51.65	47.33	51.23	49.05	92	96	56-128	4	30
Chrysene	N.D.	51.65	52.73	51.23	52.14	102	102	71-136	1	30
Dibenz(a,h)anthracene	N.D.	51.65	52.55	51.23	53.1	102	104	64-133	1	30
Dibenzofuran	N.D.	51.65	51.23	51.23	51	99	100	67-120	0	30
1,2-Dichlorobenzene	N.D.	51.65	48.98	51.23	49.56	95	97	53-119	1	30
1,3-Dichlorobenzene	N.D.	51.65	46.66	51.23	48.32	90	94	53-111	3	30
1,4-Dichlorobenzene	N.D.	51.65	47.86	51.23	49.38	93	96	34-123	3	30
3,3'-Dichlorobenzidine	N.D.	51.65	33.18	51.23	30.43	64	59	39-118	9	30
2,4-Dichlorophenol	N.D.	51.65	52.55	51.23	54.14	102	106	66-126	3	30
Diethylphthalate	N.D.	51.65	49.03	51.23	45.96	95	90	55-124	6	30
2,4-Dimethylphenol	1.57	51.65	52.51	51.23	52.38	99	99	63-117	0	30
Dimethylphthalate	N.D.	51.65	40.01	51.23	40.8	77	80	26-133	2	30
4,6-Dinitro-2-methylphenol	N.D.	51.65	56.45	51.23	57.91	109	113	64-124	3	30
2,4-Dinitrophenol	N.D.	103.31	115.11	102.46	116.96	111	114	42-129	2	30
2,4-Dinitrotoluene	N.D.	51.65	51.89	51.23	52.25	100	102	71-131	1	30
2,6-Dinitrotoluene	N.D.	51.65	52.6	51.23	52.64	102	103	71-133	0	30
bis(2-Ethylhexyl)phthalate	N.D.	51.65	49.19	51.23	49.71	95	97	66-130	1	30
Fluoranthene	N.D.	51.65	48.8	51.23	50.38	94	98	68-129	3	30
Fluorene	N.D.	51.65	49.53	51.23	49.34	96	96	71-127	0	30
Hexachlorobenzene	N.D.	51.65	51.16	51.23	53.09	99	104	64-128	4	30
Hexachlorobutadiene	N.D.	51.65	47.12	51.23	48.29	91	94	23-129	2	30
Hexachlorocyclopentadiene	N.D.	103.31	72.97	102.46	74.35	71	73	10-101	2	30
Hexachloroethane	N.D.	51.65	44.51	51.23	47.9	86	94	23-121	7	30
Indeno(1,2,3-cd)pyrene	N.D.	51.65	50.68	51.23	51.24	98	100	62-128	1	30
Isophorone	N.D.	51.65	54.38	51.23	54.32	105	106	68-125	0	30
2-Methylnaphthalene	2.82	51.65	52.37	51.23	52.67	96	97	61-117	1	30
2-Methylphenol	5.76	51.65	51.74	51.23	51.5	89	89	54-122	0	30
4-Methylphenol	5.76	51.65	49.76	51.23	48.13	85	83	44-114	3	30
Naphthalene	90.71	51.65	137.57	51.23	143.06	91	102	62-121	4	30
2-Nitroaniline	N.D.	51.65	52.02	51.23	53.53	101	104	68-130	3	30
3-Nitroaniline	N.D.	51.65	43.81	51.23	41.23	85	80	58-122	6	30
4-Nitroaniline	N.D.	51.65	45.12	51.23	42.17	87	82	61-111	7	30
Nitrobenzene	N.D.	51.65	52.21	51.23	52.81	101	103	70-121	1	30
2-Nitrophenol	N.D.	51.65	52.64	51.23	53.77	102	105	67-131	2	30

*- Outside of specification

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(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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
4-Nitrophenol	N.D.	51.65	36.13	51.23	34.27	70	67	11-88	5	30
N-Nitroso-di-n-propylamine	N.D.	51.65	48.84	51.23	50.29	95	98	63-121	3	30
N-Nitrosodiphenylamine	N.D.	51.65	51.54	51.23	54.18	100	106	65-125	5	30
Di-n-octylphthalate	N.D.	51.65	52.44	51.23	52.24	102	102	73-131	0	30
Pentachlorophenol	N.D.	51.65	63.7	51.23	67.49	123	132	53-133	6	30
Phenanthrene	N.D.	51.65	48.1	51.23	51.1	93	100	65-120	6	30
Phenol	1.19	51.65	29.45	51.23	27.25	55	51	19-82	8	30
Pyrene	N.D.	51.65	50.21	51.23	49.73	97	97	68-118	1	30
1,2,4-Trichlorobenzene	N.D.	51.65	50.07	51.23	51.16	97	100	59-117	2	30
2,4,5-Trichlorophenol	N.D.	51.65	53.58	51.23	54.59	104	107	68-126	2	30
2,4,6-Trichlorophenol	N.D.	51.65	56.31	51.23	56.38	109	110	71-130	0	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 160791848001	Sample number(s): 8293127 UNSPK: P293353									
Antimony	N.D.	0.500	0.499	0.500	0.494	100	99	75-125	1	20
Arsenic	0.0205	0.150	0.171	0.150	0.179	100	106	75-125	5	20
Beryllium	N.D.	0.0500	0.0490	0.0500	0.0497	98	99	75-125	1	20
Cadmium	0.000810	0.0500	0.0515	0.0500	0.0518	101	102	75-125	1	20
Chromium	N.D.	0.200	0.196	0.200	0.201	98	100	75-125	2	20
Copper	N.D.	0.250	0.258	0.250	0.261	103	105	75-125	1	20
Lead	0.00711	0.150	0.153	0.150	0.155	97	98	75-125	1	20
Nickel	N.D.	0.500	0.500	0.500	0.503	100	101	75-125	1	20
Selenium	N.D.	0.150	0.149	0.150	0.145	99	97	75-125	2	20
Silver	N.D.	0.0500	0.0510	0.0500	0.0514	102	103	75-125	1	20
Thallium	N.D.	0.150	0.170	0.150	0.175	113	116	75-125	3	20
Zinc	0.0598	0.500	0.556	0.500	0.557	99	99	75-125	0	20
Batch number: 160795713002	Sample number(s): 8293127 UNSPK: P292644									
Mercury	N.D.	0.00100	0.00110	0.00100	0.00110	110	110	80-120	0	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 160791848001 Sample number(s): 8293127 BKG: P293353				
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	0.0205	0.0190	7 (1)	20
Beryllium	N.D.	N.D.	0 (1)	20
Cadmium	0.000810	0.000740	9 (1)	20
Chromium	N.D.	N.D.	0 (1)	20
Copper	N.D.	N.D.	0 (1)	20
Lead	0.00711	0.00575	21* (1)	20
Nickel	N.D.	N.D.	0 (1)	20
Selenium	N.D.	N.D.	0 (1)	20
Silver	N.D.	N.D.	0 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Zinc	0.0598	0.0608	2 (1)	20
Batch number: 160795713002	Sample number(s): 8293127 BKG: P292644			

*- 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: Leidos Engineering, LLC
Reported: 03/23/2016 16:46

Group Number: 1642234

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Mercury	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

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

Analysis Name: PPL/TCL Volatiles in Water
Batch number: T160813AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8293127	93	94	100	101
8293128	108	102	101	101
Blank	102	96	101	103
LCS	103	98	99	106
LCSD	103	99	99	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 8270C Water
Batch number: 16079WAE026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8293127	68	59	91	46	94	77
Blank	71	54	105	99	103	90
LCS	76	59	107	99	99	87
MS	71	52	103	97	95	86
MSD	69	49	104	98	97	86
Limits:	10-103	10-85	22-150	46-128	61-112	41-125

*- 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.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 2732 Group # 1642234 Sample # 8293127-28

Client: <u>Leidos</u> Project Name #: <u>PGW - Passyunk</u> Site ID #: <u></u> Project Manager: <u>Matt Machusick</u> P.O. #: <u>P010160257</u> Sampler: <u>Lisa Cole</u> PWSID #: <u></u> Phone #: <u>610 594 4370</u> Quote #: <u></u> State where samples were collected: <u>PA</u> For Compliance: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				Matrix <input checked="" type="checkbox"/> Tissue <input type="checkbox"/> <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Water <input type="checkbox"/> Other: Total # of Containers		Analyses Requested Preservation Codes <u>VOCs</u> <u>SemiVacs</u> <u>TCL 3.2</u> <u>TCL 3.2</u> <u>PPL Metals</u>						For Lab Use Only SF #: _____ SCR #: _____	
Sample Identification <u>MW-3D</u> <u>Trip blank</u>				Collection Date <u>3/18/16</u> Time <u>1056</u> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Tissue <input checked="" type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other: <u></u>									
Turnaround Time Requested (TAT) (please check): Standard <input type="checkbox"/> Rush <input checked="" type="checkbox"/> (Rush TAT is subject to laboratory approval and surcharges.)				Relinquished by: <u>SL</u> Date <u>3/18/16</u> Time <u>1415</u>		Received by: <u>JMC</u> Date <u>3.18.16</u> Time <u>1415</u>							
Date results are needed: Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> E-mail Address: <u>machusickm@leidos.com</u> Phone: <u></u>				Relinquished by: <u>Gen Ross</u> Date <u>3.18.16</u> Time <u>1634</u>									
Data Package Options (please check if required) Type I (Validation/non-CLP) <input type="checkbox"/> MA MCP <input type="checkbox"/> Type III (Reduced non-CLP) <input type="checkbox"/> CT RCP <input type="checkbox"/> Type VI (Raw Data Only) <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/> NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B				Relinquished by: Date <u></u> Time <u></u>		Received by: Date <u></u> Time <u></u>							
EDD Required? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, format: _____				Relinquished by Commercial Carrier: UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/>		Temperature upon receipt <u>0.6</u> °C							

Client: Leidos**Delivery and Receipt Information**

Delivery Method: ELLE Courier Arrival Timestamp: 03/18/2016 16:34
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: PA

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:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Jordan Woods (6698) at 17:55 on 03/18/2016

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	DT121	0.6	DT	Wet	Y	Bagged	N

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.

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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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