

SITE INVESTIGATION REPORT

**200 ASH STREET
BLOCK 1405, LOT 6
DELANCO TOWNSHIP
BURLINGTON COUNTY, NEW JERSEY**

Prepared for:

Township of Delanco
770 Coopertown Road
Delanco, NJ 08075



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1.0 INTRODUCTION

Environmental Resolutions, Inc. (ERI) has prepared this report to document the findings of a Site Investigation (SI) that has been conducted at 200 Ash Street, situated on Block 1405, Lot 6, in Delanco Township, Burlington County, New Jersey (the Site). The following areas of concern (AOCs) were identified during a Phase I Environmental Site Assessment/Preliminary Assessment (Phase I/PA) completed for the Site by ERI in January 2020:

- AOC-1: Former Oil House
- AOC-2: Former Powerhouse
- AOC-3: Loading Dock
- AOC-4: Former Dwelling/Office Building
- AOC-5: Historic Fill

It was recommended that a SI be completed for AOC-1 through AOC-5. The results of the investigation of these AOCs are included in this report. The investigation has been conducted in general accordance with the *Technical Requirements for Site Remediation*, N.J.A.C. 7:26E. Based on the findings of the Site Investigation, recommendations for additional actions are presented.

2.0 PHYSICAL SETTING

2.1 Site Description

The Site property is situated on Block 1405, Lot 6 in Delanco Township, Burlington County, NJ and comprises approximately 0.75 acres. The Site is located on the south side of Rancocas Ave, to the southwest of the intersection of Rancocas Ave and Ash St. The Site consists of a vacant, three-story brick warehouse building and surrounding lawn area. The Site location is depicted on **Figure 1: USGS Location Map** and **Figure 2: 2015 Aerial Photograph**.

2.2 Surface Waters

The Rancocas Creek borders the Site to the south. The Delaware River is located approximately 2,000 feet to the northwest.

2.3 Hydrogeologic Setting

The Site is located within a mapped outcrop of the Potomac Formation. The Potomac Formation comprises the base of the Potomac-Raritan-Magothy (PRM) aquifer, which is an important public water resource of the New Jersey Coastal Plain. In New Jersey, the Cretaceous-aged PRM is generally considered a single hydrogeologic unit or aquifer system (Fusillo, Voronin, 1980). There are several physically distinguishable units within the PRM aquifer system; however, individual formations may not be distinguishable over wide areas. Generally, lower, middle, and upper sand-and-gravel aquifers separated by clay-and-silt confining units have been recognized.

2.4 Land Use

The properties adjoining the Site are residential and commercial. Four dwellings are located adjacently to the west, followed by Buttonwood Street and additional dwellings. Rancocas Ave borders the Site to the north, followed by residences. Ash St. forms the eastern boundary of the Site, followed by dwellings and a commercial lot containing several structures. The Rancocas Creek borders the Site to the south.

2.5 Utilities

The Site and vicinity are serviced by public water and sewer.

3.0 SITE INVESTIGATION

3.1 Technical Overview

The Site Investigation was conducted to assess AOCs 1 through 5. Samples were collected by advancing soil borings using a direct-push sampling unit. The direct-push sampler utilized a 1-3/4" outer diameter polyethylene insert to obtain five-foot long continuous soil samples. A photoionization detector (PID) was used to screen the soil for volatile vapors. Subsurface conditions are depicted on the Boring Logs included in **Appendix A**. The boring locations are shown on **Figure 3: Site Investigation Map**.

Sampling was performed in accordance with N.J.A.C. 7:26E and the NJDEP *Field Sampling Procedures Manual* (August 2005) with. A stainless-steel trowel was used to collect soil samples and to transfer the samples to laboratory-supplied glassware. Soil samples collected for volatile organic compounds analysis were collected using disposable EnCore® samplers. Based on field indicators of contamination, groundwater samples were obtained at some of the AOCs using temporary well points. Temporary well points were installed using the Passively Placed Narrow Diameter Point method described in the NJDEP *Alternative Ground Water Sampling Techniques Guide* (April 1994). Temporary well points were purged with a peristaltic pump and groundwater samples were collected using disposable bailers.

A summary of the SI execution and findings are provided in the following sections arranged by AOC. Soil results are shown on **Table 1: Soil Analytical Results**. Groundwater results are shown on **Table 2: Groundwater Analytical Results**. Soil results are compared to the NJDEP Residential Soil Remediation Standards (RSRS), Non-Residential Soil Remediation Standards (NRSRS), and Impact to Groundwater Soil Screening Levels (IGWSSL). Groundwater results are compared to the Groundwater Quality Standards (GWQS).

3.1.1 Reliability of Data

Samples collected by ERI were analyzed by TestAmerica (NJDEP Certification No. 12028) of Edison, New Jersey. Results were documented in a laboratory report that was prepared in accordance with NJDEP reduced laboratory deliverable requirements (N.J.A.C. 7:26E - Appendix A). ERI has reviewed the laboratory report including the non-conformance summary/narrative. Based on review of the laboratory report the laboratory data appears to be reliable as indicated by compliance with sample holding times and precision accuracy criteria for each analytical method and the results of the analyses of blanks, within the limitations noted in the laboratory reports. No significant events or seasonal variations occurred which may have influenced results. A copy of the laboratory report is provided in **Appendix B**.

3.2 AOC-1: Former Oil House

3.2.1 Description of AOC

This AOC was identified on the 1915 Sanborn Map. The oil house was located adjacent to the south end of the main warehouse building.

3.2.2 *Soil Sampling*

One soil boring, A-2, was advanced at this AOC. The boring was advanced to a depth of 10 feet below the ground surface (ft-bgs). PID readings were not encountered in the boring. Groundwater was encountered at a depth of 4 ft-bgs.

One soil sample, A-2, was collected from native soil at a depth of 2.5-3 ft-bgs and analyzed for non-fractionated extractable petroleum hydrocarbons (EPH).

3.2.3 *Findings*

EPH was detected in A-2 at a concentration of 86 mg/kg, which does not exceed the NJDEP action limit of 2,300 mg/kg for Category 2 EPH.

The results are not indicative of on-site discharges related to the former oil house.

3.3 **AOC-2: Former Powerhouse**

3.3.1 *Description of AOC*

This AOC was identified on the 1927 and 1935 Sanborn Maps. The powerhouse was located to the south of the main warehouse building.

3.3.2 *Soil Sampling*

One soil boring, A-3, was advanced at this AOC. The boring was advanced to a depth of 15 ft-bgs. PID readings were encountered at depths of 5 ft-bgs and 7 ft-bgs through 10 ft-bgs. Odors were detected within a black silty clay layer at a depth of 3-4 ft-bgs. Groundwater was encountered at a depth of 4 ft-bgs.

Four soil samples, A-3A through A-3D, were collected from boring A-3. A-3A was collected at a depth of 2.5-3 ft-bgs from the upper six inches of native soil and analyzed for EPH. Sample A-3B was collected from the black silty clay layer with odors at a depth of 3.5-4 ft-bgs and analyzed for EPH and Target Compound List (TCL) volatile organic compounds plus tentatively identified compounds (VO+TICs). Sample A-3C was collected from the interval with the highest PID reading, at a depth of 7-7.5 ft-bgs, and analyzed for EPH and TCL VO+TICs. Sample A-3D was collected from the interval with the lowest PID reading, at a depth of 9.5-10 ft-bgs, and analyzed for EPH and TCL VO+TICs.

Based on laboratory results, samples A-3B and A-3C were further analyzed for polyaromatic hydrocarbons (PAHs).

3.3.3 *Groundwater Sampling*

One temporary well point, TW-2, was installed in boring A-3 at a depth of 15 ft-bgs. One groundwater sample was collected and analyzed for TCL VO+TICs and TCL semivolatile organic compounds plus tentatively identified compounds (SVO+TICs).

3.3.4 Findings

EPH was not detected in samples A-3A and A-3D. EPH was detected at concentrations of 190 mg/kg in A-3B and 3,800 mg/kg in A-3C. The EPH detections do not exceed the RSRS for No. 2 heating oil.

Benzo(a)pyrene was detected at a concentration of 0.55 mg/kg in A-3B, which exceeds the NJDEP RSRS and IGWSSL.

TCL VO+TICs and TCL SVO+TICs were not detected in groundwater sample TW-2.

The laboratory results are indicative of a discharge at the former powerhouse location. Further investigation is needed to delineate the extent of the EPH and benzo(a)pyrene contamination in soil at this AOC and to enable evaluation of remedial alternatives.

3.4 AOC-3: Loading Dock

3.4.1 Description of AOC

One loading dock area was identified at the Site. A large bay door was observed directly adjacent to the south end of the warehouse building. This AOC was suspected to contain contaminants above the applicable remediation standards due to potential discharges of wastes during handling operations.

3.4.2 Soil Sampling

One soil boring, A-1, was advanced at this AOC. The boring was advanced to a depth of 15 ft-bgs. PID readings were not encountered in the boring. Groundwater was encountered at a depth of 4.5 ft-bgs.

One soil sample, A-1, was collected from native soil at a depth of 4-4.5 ft-bgs and analyzed for EPH, TCL VO+TICs, TCL SVO+TICs, and Target Analyte List (TAL) Metals.

3.4.3 Groundwater Sampling

One temporary well point, TW-1, was installed in boring A-1 at a depth of 15 ft-bgs. One groundwater sample was collected and analyzed for TCL VO+TICs and TCL SVO+TICs.

3.4.4 Findings

EPH, TCL VO+TICs, and TCL SVO+TICs were not detected in the sample. Aluminum and manganese were detected above the NJDEP IGWSSL. However, the IGWSSL for aluminum and manganese are based on secondary GWQS that are not health based. Therefore, the NJDEP has decided that the impact to groundwater pathway does not need to be addressed for these metals unless there is cause to believe that their presence is due to a site discharge.

TCL VO+TICs and TCL SVO+TICs were not detected in groundwater sample TW-1.

The results are not indicative of on-site discharges related to the loading dock.

3.5 AOC-4: Former Dwelling/Office Building

3.5.1 Description of AOC

A former dwelling/office building was identified on the northeastern portion of the Site on the 1909, 1915, 1921, 1927, 1935, and 1945 Sanborn Maps. The dwelling/office building was observed on historic aerial photographs for the years 1931 through 1958. There was a concern that the former dwelling/office may have utilized heating oil tanks.

3.5.2 Geophysical Survey

A geophysical survey was performed by Enviroprobe Services, Inc. (Enviroprobe) at the location of the former dwelling/office building. Ground penetrating radar (GPR) and electromagnetics were used to identify potential USTs or evidence of former UST excavations.

No USTs were identified during the GPR survey. A copy of the Enviroprobe Geophysical Report is included in **Appendix C**.

Since evidence of USTs at this AOC were not identified, soil sampling was not performed. No further action is recommended for this AOC.

3.6 AOC-5: Historic Fill

3.6.1 Description of AOC

In a comparison between the 1909 and 1915 Sanborn Maps, it was apparent that the southern property line had been extended several hundred feet to the south into the Rancocas Creek. There was a concern that contaminated historic fill was utilized at the Site.

3.6.2 Soil Sampling

Two soil borings, A-4 and A-5, were advanced at this AOC. Boring A-4 was advanced within the southwestern portion of the property and boring A-5 was advanced within the southeastern portion. The borings were advanced to a depth of 10 ft-bgs. PID readings were not encountered in the borings. Groundwater was encountered at a depth of 4.5 ft-bgs.

Fill material consisting of brick pieces, glass, gravel and wood chips were observed in the borings at depths of 3-5 ft-bgs and 9-10 ft-bgs. Two soil samples, A-4A and A-4B, were collected from boring A-4 and two soil samples, A-5A and A-5B, were collected from boring A-5. The "A" samples were collected from native soil and the "B" samples were collected from fill material. The "B" samples were analyzed for PAHs and TAL Metals.

3.6.3 Findings

Benzo(a)pyrene was detected at a concentration of 94 mg/kg in sample A-4B, which exceeds NJDEP RSRS and NRSRS. The detection also exceeded IGWSSL; however, IGWSSL are not applicable in fill soil.

Benzo(a)anthracene was detected at a concentration of 110 mg/kg in A-4B, exceeding RSRS and NRSRS. Benzo(b)fluoranthene was detected at a concentration of 120 mg/kg in A-4B, exceeding RSRS and NRSRS. Dibenz(a,h)anthracene was detected at a concentration of 15 mg/kg in A-4B, exceeding RSRS and NRSRS. Indeno[1,2,3-cd]pyrene was detected at a concentration of 58 mg/kg in A-4B, exceeding RSRS and NRSRS. Benzo(k)fluoranthene was detected at a concentration of 48 mg/kg, exceeding RSRS.

Lead was detected at a concentration of 2,290 mg/kg in A-4B, exceeding RSRS and NRSRS.

PAHs and metals were not detected above RSRS and NRSRS in sample A-5B.

The results indicate that contaminated historic fill material is present at the southwestern portion of the Site. Further investigation is needed in order to delineate the extent of the historic fill material and to enable evaluation of remedial alternatives.

4.0 CONCLUSIONS AND RECOMMENDATIONS

AOC-1: Former Oil House

The SI findings are not indicative of adverse discharges at AOC-1. No further actions are recommended for this AOC.

AOC-2: Former Powerhouse

EPH was detected above the NJDEP action limit and benzo(a)pyrene was detected above NJDEP RSRS at the former powerhouse location.

The results are indicative of a discharge at the former powerhouse location. Further investigation is needed to delineate the extent of the EPH and benzo(a)pyrene contamination in soil at this AOC and to enable evaluation of remedial alternatives. ERI recommends completion of a Remedial Investigation at AOC-2.

The property owner should be notified that they have a statutory obligation to report this discharge to the NJDEP.

AOC-3: Loading Dock

The SI findings are not indicative of adverse discharges at AOC-3. No further actions are recommended for this AOC.

AOC-4: Former Dwelling/Office Building

A geophysical investigation completed at this AOC did not identify the presence of USTs and/or former UST excavations. Therefore, no further actions are recommended for this AOC.

AOC-5: Historic Fill

The SI findings indicate that contaminated historic fill is present within the southwestern portion of the Site. ERI recommends completion of a Remedial Investigation at this AOC in order to delineate the extent of the contaminated historic fill and to enable evaluation of remedial alternatives.

5.0 LIMITATIONS

This report has been prepared in accordance with generally accepted standards of environmental assessment practice at the time of the investigation. This investigation was conducted solely for the purpose of evaluating environmental conditions with respect to selected contaminants at the site. Environmental Resolutions, Inc. has reviewed the information provided but makes no guarantees or warranties as to the accuracy or completeness of the information. Environmental Resolutions, Inc. has based findings on analytical results reported by a New Jersey Department of Environmental Protection certified laboratory but makes no guarantees or warranties as to the accuracy of the reported data. Evaluations of subsurface conditions at the Site for purposes of this investigation were made from a limited number of observation points. Conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation.

FIGURES

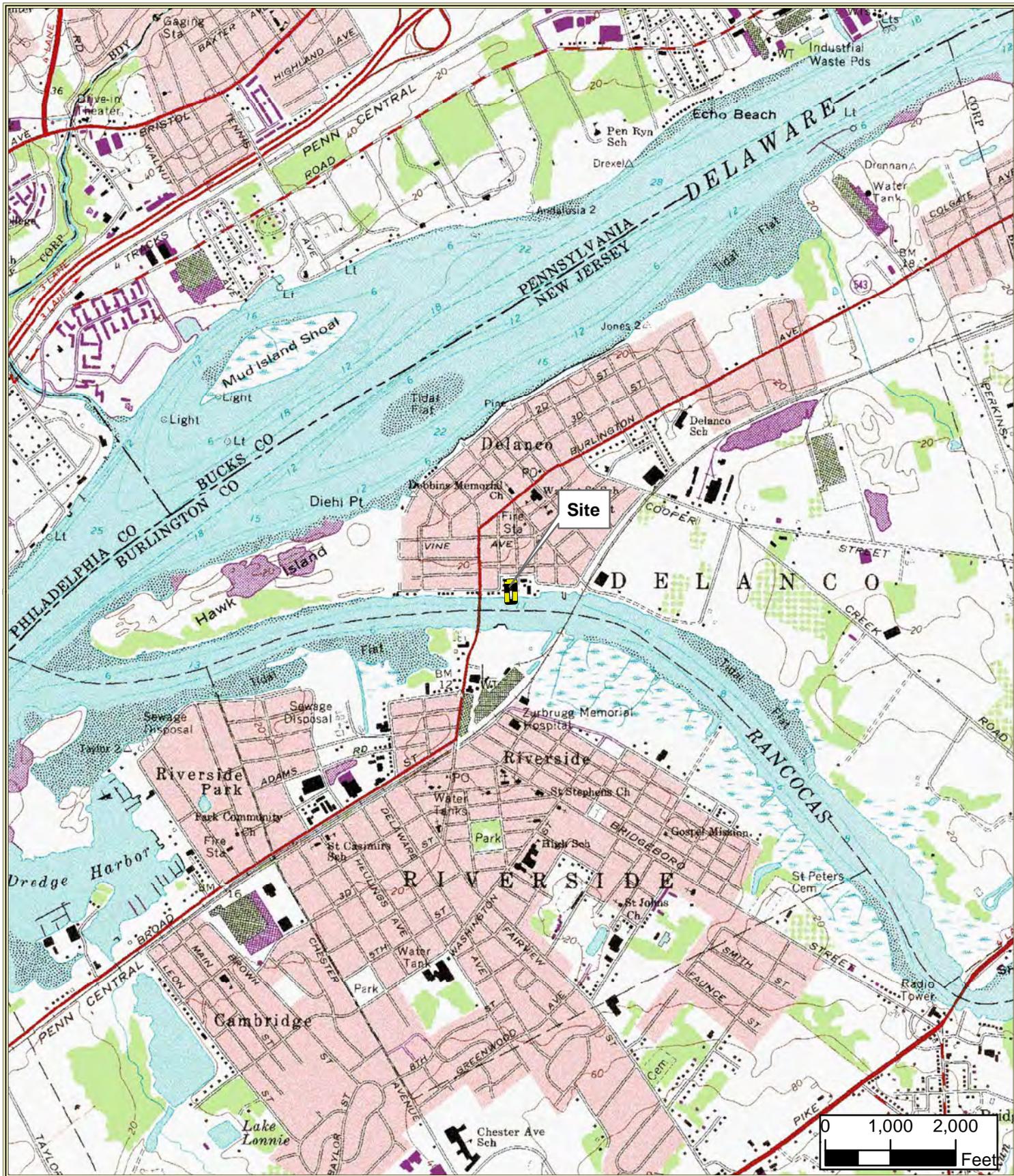


FIGURE 1: USGS LOCATION MAP



BASEMAP SOURCE:

<http://njwebmap.state.nj.us/njimagery/>
ColorTopo24K

SCALE: 1 INCH = 2,000 FT



**200 ASH STREET
BLOCK 1405, LOT 6
DELANCO TOWNSHIP
BURLINGTON COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC.



Legend

 Site

0 50 100
Feet

FIGURE 2: 2015 AERIAL PHOTOGRAPH



BASEMAP SOURCE:

<http://njwebmap.state.nj.us/njimager?>
Natural2015

SCALE: 1 INCH = 100 FT



**200 ASH STREET
BLOCK 1405, LOT 6
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BURLINGTON COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC.



FIGURE 3: SITE INVESTIGATION MAP



BASEMAP SOURCE:
<http://njwebmap.state.nj.us/njimager?>
 Natural2015

SCALE: 1 INCH = 25 FT



**200 ASH STREET
 BLOCK 1405, LOT 6
 DELANCO TOWNSHIP
 BURLINGTON COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC.

TABLES

Table 1
 Soil Analytical Results- VOCs
 200 Ash St
 Delanco Township, Burlington County, NJ

SampleID	NJ_SRS7_26D_Tbl1A	NJ_SRS7_26D_Tbl1B	NJDEP	A-1	A-3B	A-3C	A-3D				
Lab Sample ID	Residential	Non-Residential	IGW Screening	460-203274-1	460-203274-4	460-203274-5	460-203274-6				
Sampling Date	Sept_2017	Sept_2017	Nov_2013	2/18/2020	2/18/2020	2/18/2020	2/18/2020				
Sample Depth (ft-bgs)				4-4.5	3.5-4	7-7.5	9.5-10				
Matrix				Soil	Soil	Soil	Soil				
Dilution Factor				1	1	1	1				
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
SOIL BY 8260C											
1,1,1-Trichloroethane	160000	NA	0.3	0.00024	U	0.00036	U	0.00025	U	0.00029	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.00022	U	0.00033	U	0.00023	U	0.00026	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.00031	U	0.00047	U	0.00032	U	0.00037	U
1,1,2-Trichloroethane	2	6	0.02	0.00018	U	0.00028	U	0.00019	U	0.00022	U
1,1-Dichloroethane	8	24	0.2	0.00021	U	0.00032	U	0.00022	U	0.00025	U
1,1-Dichloroethene	11	150	0.008	0.00023	U	0.00035	U	0.00024	U	0.00028	U
1,2,3-Trichlorobenzene	NA	NA	NA	0.00019	U	0.00028	U	0.00019	U	0.00022	U
1,2,4-Trichlorobenzene	73	820	0.7	0.00037	U	0.00055	U	0.00038	U	0.00044	U
1,2-Dibromo-3-Chloropropane	0.08	0.2	0.005	0.00048	U	0.00071	U	0.00049	U	0.00056	U
1,2-Dichlorobenzene	5300	59000	17	0.00015	U	0.00022	U	0.00015	U	0.00018	U
1,2-Dichloroethane	0.9	3	0.005	0.00031	U	0.00046	U	0.00031	U	0.00036	U
1,2-Dichloropropane	2	5	0.005	0.00044	U	0.00066	U	0.00045	U	0.00052	U
1,3-Dichlorobenzene	5300	59000	19	0.00016	U	0.00025	U	0.00017	U	0.00019	U
1,4-Dichlorobenzene	5	13	2	0.00023	U	0.00035	U	0.00024	U	0.00028	U
1,4-Dioxane	NA	NA	NA	0.0095	U	0.014	U	0.0097	U	0.011	U
2-Butanone (MEK)	3100	44000	0.9	0.0028	U	0.0042	U	0.0061	U	0.0050	J
2-Hexanone	NA	NA	NA	0.0018	U	0.0027	U	0.0018	U	0.0021	U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	0.0016	U*	0.0024	U*	0.0016	U*	0.0019	U
Acetone	70000	NA	19	0.0059	U	0.044	U	0.034	U	0.029	U
Benzene	2	5	0.005	0.00027	U	0.00040	U	0.00027	U	0.00032	U
Bromoform	81	280	0.03	0.00044	U	0.00066	U	0.00045	U	0.00052	U
Bromomethane	25	59	0.04	0.00049	U	0.00073	U	0.00050	U	0.00058	U
Carbon disulfide	7800	110000	6	0.00028	U	0.0024	U	0.00033	J	0.00033	U
Carbon tetrachloride	2	4	0.005	0.00040	U	0.00060	U	0.00041	U	0.00047	U
Chlorobenzene	510	7400	0.6	0.00018	U	0.00027	U	0.00019	U	0.00022	U
Chlorobromomethane	NA	NA	NA	0.00029	U	0.00044	U	0.00030	U	0.00034	U
Chlorodibromomethane	3	8	0.005	0.00020	U	0.00030	U	0.00020	U	0.00024	U
Chloroethane	220	1100	NA	0.00054	U	0.00081	U	0.00055	U	0.00064	U
Chloroform	0.6	2	0.4	0.00033	U	0.00049	U	0.00034	U	0.00039	U
Chloromethane	4	12	NA	0.00045	U	0.00067	U	0.00046	U	0.00053	U
cis-1,2-Dichloroethene	230	560	0.3	0.00016	U	0.00024	U	0.00016	U	0.00019	U
cis-1,3-Dichloropropene	NA	NA	0.005	0.00028	U	0.00042	U	0.00029	U	0.00033	U
Cyclohexane	NA	NA	NA	0.00023	U	0.00034	U	0.00090	J	0.00027	U
Dichlorobromomethane	1	3	0.005	0.00027	U	0.00040	U	0.00027	U	0.00031	U
Dichlorodifluoromethane	490	230000	39	0.00035	U	0.00052	U	0.00036	U	0.00041	U
Ethylbenzene	7800	110000	13	0.00021	U	0.00031	U	0.00021	U	0.00024	U
Ethylene Dibromide	0.008	0.04	0.005	0.00019	U	0.00028	U	0.00019	U	0.00022	U*
Isopropylbenzene	NA	NA	NA	0.00013	U	0.00020	U	0.00013	U	0.00015	U
Methyl acetate	78000	NA	22	0.0045	U	0.0067	U	0.0045	U	0.0053	U
Methyl tert-butyl ether	110	320	0.2	0.00013	U	0.00019	U	0.00013	U	0.00015	U
Methylcyclohexane	NA	NA	NA	0.00052	U	0.00077	U	0.010	U	0.00061	U
Methylene Chloride	46	230	0.01	0.00053	J	0.0036	U	0.00049	U	0.00057	U
m-Xylene & p-Xylene	NA	NA	NA	0.00018	U	0.00027	U	0.00018	U	0.00021	U
o-Xylene	NA	NA	NA	0.00020	U	0.00030	U	0.00098	J	0.00024	U
Styrene	90	260	3	0.00029	U	0.00043	U	0.00029	U	0.00034	U
Tetrachloroethene	43	1500	0.005	0.00015	U	0.00022	U	0.00015	U	0.00018	U
Toluene	6300	91000	7	0.00024	U	0.00036	U	0.00025	U	0.00029	U
trans-1,2-Dichloroethene	300	720	0.6	0.00026	U	0.00038	U	0.00026	U	0.00030	U
trans-1,3-Dichloropropene	NA	NA	0.005	0.00028	U	0.00041	U	0.00028	U	0.00033	U
Trichloroethene	3	10	0.01	0.00015	U	0.00022	U	0.00015	U	0.00018	U
Trichlorofluoromethane	23000	340000	34	0.00042	U	0.00063	U	0.00043	U	0.00050	U
Vinyl chloride	0.7	2	0.005	0.00057	U	0.00085	U	0.00058	U	0.00067	U
Xylenes, Total	12000	170000	19	0.00018	U	0.00027	U	0.00098	J	0.00021	U
Total Conc	NA	NA	NA	0.00053	U	0.05	U	0.06169	U	0.034	U
Total Estimated Conc. (TICs)	NA	NA	NA	0.0*T	U	0.0*T	U	4.46	U	0.0198	U

*T There are no TICs reported for the sample
 * : LCS or LCSD is outside acceptance limits.
 J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
 U : Indicates the analyte was analyzed for but not detected.

Table 1

Soil Analytical Results- VOC TICs

200 Ash St

Delanco Township, Burlington County, NJ

Sample ID	A-3C		A-3D	
Lab Sample ID	460-203274-5		460-203274-6	
Sampling Date	2/18/2020		2/18/2020	
Sample Depth (ft-bgs)	7-7.5		9.5-10	
Matrix	Soil		Soil	
Dilution Factor	1		1	
Unit	mg/kg		mg/kg	
SOIL TICs BY 8260C				
2-Octene, 2,6-dimethyl-	0.27	J N	NR	
Unknown	0.26	J	NR	
Decane, 4-methyl-	0.21	J N	NR	
Unknown	0.20	J	NR	
Unknown	0.25	J	NR	
Unknown	0.19	J	NR	
Cyclohexane, 1-methyl-3-(1-methylethenyl)-, cis-	0.73	J N	NR	
Unknown	0.23	J	NR	
Unknown	0.46	J	NR	
Naphthalene, decahydro-2-methyl-	0.41	J N	NR	
Unknown	0.24	J	NR	
Unknown	0.31	J	NR	
Unknown	0.20	J	NR	
Unknown	0.24	J	NR	
Tridecane, 7-methyl-	0.26	J N	NR	
Benzene, 1-ethenyl-3-ethyl-	NR		0.0088	J N
Indan, 1-methyl-	NR		0.011	J N

NR: Not Analyzed

RT mm:ss Retention Time in mm:ss format

J : Indicates an Estimated Value for TICs

N : This flag indicates the presumptive evidence of a compound.

Table 1
Soil Analytical Results- SVOCs
200 Ash St
Delanco Township, Burlington County, NJ

Sample ID	NJ_SRS7_26D_Tbl1A	NJ_SRS7_26D_Tbl1B	NJDEP	A-1	A-3B	A-3C	A-4B	A-5B
Lab Sample ID	Residential	Non-Residential	IGW Screening	460-203274-1	460-203274-4	460-203274-5	460-203274-8	460-203274-10
Sampling Date	Sept 2017	Sept 2017	Nov 2013	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020
Sample Depth (ft-bgs)				4-4.5	3.5-4	7-7.5	4-4.5	4-4.5
Matrix				Soil	Soil	Soil	Soil	Soil
Dilution Factor				1	1	1	50	1
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SOIL BY 8270D								
1,1'-Biphenyl	61	240	140	0.0052 U	NR	NR	NR	NR
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	0.012 U	NR	NR	NR	NR
2,2'-oxybis[1-chloropropane]	23	67	5	0.0070 U	NR	NR	NR	NR
2,3,4,6-Tetrachlorophenol	NA	NA	NA	0.026 U	NR	NR	NR	NR
2,4,5-Trichlorophenol	6100	68000	68	0.040 U	NR	NR	NR	NR
2,4,6-Trichlorophenol	19	74	0.2	0.050 U	NR	NR	NR	NR
2,4-Dichlorophenol	180	2100	0.2	0.025 U	NR	NR	NR	NR
2,4-Dimethylphenol	1200	14000	1	0.017 U	NR	NR	NR	NR
2,4-Dinitrophenol	120	1400	0.3	0.19 U	NR	NR	NR	NR
2,4-Dinitrotoluene	0.7	3	NA	0.042 U	NR	NR	NR	NR
2,6-Dinitrotoluene	0.7	3	NA	0.028 U	NR	NR	NR	NR
2-Chloronaphthalene	NA	NA	NA	0.018 U	NR	NR	NR	NR
2-Chlorophenol	310	2200	0.8	0.014 U	NR	NR	NR	NR
2-Methylnaphthalene	230	2400	8	0.011 U	0.26 J F1	1.8	3.7 J	0.011 U
2-Methylphenol	310	3400	NA	0.015 U	NR	NR	NR	NR
2-Nitroaniline	39	23000	NA	0.015 U	NR	NR	NR	NR
2-Nitrophenol	NA	NA	NA	0.039 U	NR	NR	NR	NR
3,3'-Dichlorobenzidine	1	4	0.2	0.059 U	NR	NR	NR	NR
3-Nitroaniline	NA	NA	NA	0.044 U	NR	NR	NR	NR
4,6-Dinitro-2-methylphenol	6	68	0.3	0.063 U	NR	NR	NR	NR
4-Bromophenyl phenyl ether	NA	NA	NA	0.015 U	NR	NR	NR	NR
4-Chloro-3-methylphenol	NA	NA	NA	0.022 U	NR	NR	NR	NR
4-Chloroaniline	NA	NA	NA	0.027 U	NR	NR	NR	NR
4-Chlorophenyl phenyl ether	NA	NA	NA	0.014 U	NR	NR	NR	NR
4-Methylphenol	31	340	NA	0.024 U	NR	NR	NR	NR
4-Nitroaniline	NA	NA	NA	0.045 U	NR	NR	NR	NR
4-Nitrophenol	NA	NA	NA	0.063 U	NR	NR	NR	NR
Acenaphthene	3400	37000	110	0.028 U	0.029 J F1	0.40	9.8 J	0.029 U
Acenaphthylene	NA	300000	NA	0.0040 U	0.31 J F1	0.0042 U	8.9 J	0.0041 U
Acetophenone	2	5	3	0.019 U	NR	NR	NR	NR
Anthracene	17000	30000	2400	0.012 U	0.12 J F1	0.19 J	41	0.066 J
Atrazine	210	2400	0.2	0.0098 U	NR	NR	NR	NR
Benzaldehyde	6100	68000	NA	0.017 U	NR	NR	NR	NR
Benzo[a]anthracene	5	17	0.8	0.014 U	0.56 F1	0.080	110	0.24
Benzo[a]pyrene	0.5	2	0.2	0.010 U	0.55 F1	0.064	94	0.19
Benzo[b]fluoranthene	5	17	2	0.010 U	0.86 F1	0.12	120	0.23
Benzo[g,h,i]perylene	380000	30000	NA	0.011 U	0.31 J F1	0.044 J	48	0.12 J
Benzo[k]fluoranthene	45	170	25	0.0076 U	0.27 F1	0.041	48	0.083
Bis(2-chloroethoxy)methane	NA	NA	NA	0.030 U	NR	NR	NR	NR
Bis(2-chloroethyl)ether	0.4	2	0.2	0.014 U	NR	NR	NR	NR
Bis(2-ethylhexyl) phthalate	35	140	1200	0.021 U	NR	NR	NR	NR
Butyl benzyl phthalate	1200	14000	230	0.018 U	NR	NR	NR	NR
Caprolactam	31000	340000	12	0.061 U	NR	NR	NR	NR
Carbazole	24	96	NA	0.015 U	NR	NR	NR	NR
Chrysene	450	1700	80	0.0066 U	0.94 F1	0.15 J	120	0.25 J
Dibenz(a,h)anthracene	0.5	2	0.8	0.017 U	0.086 F1	0.017 U	15	0.038 J
Dibenzofuran	NA	NA	NA	0.0055 U	NR	NR	NR	NR
Diethyl phthalate	49000	550000	88	0.0056 U	NR	NR	NR	NR
Dimethyl phthalate	NA	NA	NA	0.088 U	NR	NR	NR	NR
Di-n-butyl phthalate	6100	68000	760	0.069 U	NR	NR	NR	NR
Di-n-octyl phthalate	2400	27000	3300	0.021 U	NR	NR	NR	NR
Fluoranthene	2300	24000	1300	0.017 J	1.1 F1	0.16 J	260	0.45
Fluorene	2300	24000	170	0.0053 U	0.098 J F1	0.55	19 J	0.019 J
Hexachlorobenzene	0.3	1	0.2	0.018 U	NR	NR	NR	NR
Hexachlorobutadiene	6	25	0.9	0.0083 U	NR	NR	NR	NR
Hexachlorocyclopentadiene	45	110	320	0.034 U	NR	NR	NR	NR
Hexachloroethane	12	48	0.2	0.013 U	NR	NR	NR	NR
Indeno[1,2,3-cd]pyrene	5	17	7	0.015 U	0.32 F1	0.045	58	0.13
Isophorone	510	2000	0.2	0.11 U	NR	NR	NR	NR
Naphthalene	6	17	25	0.0067 U	0.22 J F1	0.0069 U	5.5 J	0.0069 U
Nitrobenzene	5	14	0.2	0.0093 U	NR	NR	NR	NR
N-Nitrosodi-n-propylamine	0.2	0.3	0.2	0.028 U	NR	NR	NR	NR
N-Nitrosodiphenylamine	99	390	0.4	0.0074 U	NR	NR	NR	NR
Pentachlorophenol	0.9	3	0.3	0.080 U	NR	NR	NR	NR
Phenanthrene	NA	300000	NA	0.018 J	1.1 F1	0.93	240	0.32 J
Phenol	18000	210000	8	0.014 U	NR	NR	NR	NR
Pyrene	1700	18000	840	0.017 J	1.3 F1	0.25 J	240	0.49
Total Conc	NA	NA	NA	0.052	8.404	4.824	1440.9	2.626
Total Estimated Conc. (TICs)	NA	NA	NA	0.45	NR	NR	NR	NR

NR: Not Analyzed
 Highlighted Concentrations shown in bold type face exceed limits
 F1 : MS and/or MSD Recovery is outside acceptance limits.
 J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
 U : Indicates the analyte was analyzed for but not detected.

Table 1

Soil Analytical Results- SVOC TICs
200 Ash St
Delanco Township, Burlington County, NJ

Sample ID	A-1	
Lab Sample ID	460-203274-1	
Sampling Date	2/18/2020	
Sample Depth (ft-bgs)	4-4.5	
Matrix	Soil	
Dilution Factor	1	
Unit	mg/kg	
SOIL TICs BY 8270D		
Aldol condensation product	0.45	J A

RT mm:ss Retention Time in mm:ss format

A : The tentatively identified compound is a suspected aldol-condensation product.

J : Indicates an Estimated Value for TICs

Table 1
 Soil Analytical Results- EPH
 200 Ash St
 Delanco Township, Burlington County, NJ

SampleID	NJ_SRS7_26D_Tbl1A	NJ_SRS7_26D_Tbl1B	NJDEP	A-1	A-2	A-3A	A-3B	A-3C	A-3D
Lab Sample ID	Residential	Non-Residential	IGW Screening	460-203274-1	460-203274-2	460-203274-3	460-203274-4	460-203274-5	460-203274-6
Sampling Date	Sept_2017	Sept_2017	Nov_2013	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020
Sample Depth (ft-bgs)				4-4.5	2.5-3	2.5-3	3.5-4	7-7.5	9.5-10
Matrix				Soil	Soil	Soil	Soil	Soil	Soil
Dilution Factor				1	1	1	1	10	1
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SOIL BY NJDEP EPH									
Total EPH (C9-C40)	NA	NA	NA	2.4 U	86	2.3 U	190	3800	2.4 U

U : Indicates the analyte was analyzed for but not detected.

Table 1
 Soil Analytical Results- Metals
 200 Ash St
 Delanco Township, Burlington County, NJ

Sample ID	NJ_SRS7_26D_Tbl1A	NJ_SRS7_26D_Tbl1B	NJDEP	A-1	A-4B	A-5B
Lab Sample ID	Residential	Non-Residential	IGW Screening	460-203274-1	460-203274-8	460-203274-10
Sampling Date	Sept_2017	Sept_2017	Nov_2013	2/18/2020	2/18/2020	2/18/2020
Sample Depth (ft-bgs)				4-4.5	4-4.5	4-4.5
Matrix				Soil	Soil	Soil
Unit				mg/kg	mg/kg	mg/kg
SOIL BY 6020B(MG/KG)						
Aluminum	78000	NA	6000	9590	4520	8230
Antimony	31	450	6	0.32 U	1.7 J	0.34 U
Arsenic	19	19	19	6.7	17.8	6.6
Barium	16000	59000	2100	50.2	1140	61.2
Beryllium	16	140	0.7	0.60	0.63 J	0.45 J
Cadmium	78	78	2	0.37 U	3.3	0.46 J
Calcium	NA	NA	NA	932	4050	1630
Chromium	NA	NA	NA	19.5	50.6	16.4
Cobalt	1600	590	90	4.9	6.6	5.3
Copper	3100	45000	11000	33.3	215	81.3
Iron	NA	NA	NA	20500	60300	15800
Lead	400	800	90	58.0	2290	111
Magnesium	NA	NA	NA	1980	1400	2100
Manganese	11000	5900	65	185	399	221
Nickel	1600	23000	48	10.6	26.4	10.6
Potassium	NA	NA	NA	898	444	575
Selenium	390	5700	11	0.32 U	2.0 J	0.34 U
Silver	390	5700	1	0.69 U	1.1 U	0.73 U
Sodium	NA	NA	NA	34.7 U	67.0 J	55.3 J
Thallium	NA	NA	3	0.14 U	0.31 J	0.15 U
Vanadium	78	1100	NA	20.4	20.5	16.4
Zinc	23000	110000	930	40.6	1180	249
SOIL BY 7471B(MG/KG)						
Mercury	23	65	0.1	0.054	0.59	0.089

Highlighted Concentrations shown in bold type face exceed limits
 J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
 U : Indicates the analyte was analyzed for but not detected.

Table 2
 Groundwater Analytical Results- VOCs
 200 Ash Street
 Delanco Township, Burlington County, NJ

Sample ID	NJAC 7:9C	TW-1	TW-2
Lab Sample ID	GW QualStds	460-203274-12	460-203274-13
Sampling Date	ClassII A	2/18/2020	2/18/2020
Matrix	Higher Values	Water	Water
Dilution Factor	2019	1	1
Unit	ug/l	ug/l	ug/l
WATER BY 8260C			
1,1,1-Trichloroethane	30	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	1	0.37 U	0.37 U
1,1,2-Trichloro-1,2,2-trifluoroethane	20000	0.31 U	0.31 U
1,1,2-Trichloroethane	3	0.43 U	0.43 U
1,1-Dichloroethane	50	0.26 U	0.26 U
1,1-Dichloroethene	1	0.26 U	0.26 U
1,2,3-Trichlorobenzene	NA	0.36 U	0.36 U
1,2,4-Trichlorobenzene	9	0.37 U	0.37 U
1,2-Dibromo-3-Chloropropane	0.02	0.38 U	0.38 U
1,2-Dichlorobenzene	600	0.43 U	0.43 U
1,2-Dichloroethane	2	0.43 U	0.43 U
1,2-Dichloropropane	1	0.35 U	0.35 U
1,3-Dichlorobenzene	600	0.34 U	0.34 U
1,4-Dichlorobenzene	75	0.33 U	0.33 U
1,4-Dioxane	0.4	28 U	28 U
2-Butanone (MEK)	300	1.9 U	1.9 U
2-Hexanone	40	1.1 U	1.1 U
4-Methyl-2-pentanone (MIBK)	NA	1.3 U	1.3 U
Acetone	6000	4.4 U	4.4 U
Benzene	1	0.20 U	0.20 U
Bromoform	4	0.54 U	0.54 U
Bromomethane	10	0.55 U	0.55 U
Carbon disulfide	700	0.82 U	0.82 U
Carbon tetrachloride	1	0.21 U	0.21 U
Chlorobenzene	50	0.38 U	0.38 U
Chlorobromomethane	NA	0.41 U	0.41 U
Chlorodibromomethane	1	0.28 U	0.28 U
Chloroethane	5	0.32 U	0.32 U
Chloroform	70	0.33 U	0.33 U
Chloromethane	NA	0.40 U	0.40 U
cis-1,2-Dichloroethene	70	0.22 U	0.22 U
cis-1,3-Dichloropropene	NA	0.22 U	0.22 U
Cyclohexane	NA	0.32 U	0.32 U
Dichlorobromomethane	1	0.34 U	0.34 U
Dichlorodifluoromethane	1000	0.31 U	0.31 U
Ethylbenzene	700	0.30 U	0.30 U
Ethylene Dibromide	0.03	0.50 U	0.50 U
Isopropylbenzene	700	0.34 U	0.46 J
Methyl acetate	7000	0.79 U	0.79 U
Methyl tert-butyl ether	70	0.47 U	0.47 U
Methylcyclohexane	NA	0.26 U	0.26 U
Methylene Chloride	3	0.32 U	0.32 U
m-Xylene & p-Xylene	NA	0.30 U	0.30 U
o-Xylene	NA	0.36 U	0.36 U
Styrene	100	0.42 U	0.42 U
tert-Butyl alcohol (TBA)	100	8.3 U	8.3 U
Tetrachloroethene	1	0.25 U	0.25 U
Toluene	600	0.38 U	0.38 U
trans-1,2-Dichloroethene	100	0.24 U	0.24 U
trans-1,3-Dichloropropene	NA	0.49 U	0.49 U
Trichloroethene	1	0.31 U	0.31 U
Trichlorofluoromethane	2000	0.32 U	0.32 U
Vinyl chloride	1	0.17 U	0.17 U
Xylenes, Total	1000	0.65 U	0.65 U
Total Conc	NA	0.0	0.46
Total Estimated Conc. (TICs)	NA	0.0*T	177.0

*T There are no TICs reported for the sample

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

U : Indicates the analyte was analyzed for but not detected.

Table 2

Groundwater Analytical Results- VOC TICs
 200 Ash Street
 Delanco Township, Burlington County, NJ

Sample ID	TW-2	
Lab Sample ID	460-203274-13	
Sampling Date	2/18/2020	
Matrix	Water	
Dilution Factor	1	
Unit	ug/l	
WATER TICs BY 8260C		
Indane	7.1	J N
Benzene, 1-methyl-2-(1-methylethyl)-	15	J N
Indan, 1-methyl-	18	J N
Benzene, 1,2,4,5-tetramethyl-	9.0	J N
Benzene, 1-methyl-2-(1-methyl-2-propenyl)-	6.1	J N
1H-Indene, 2,3-dihydro-5-methyl-	5.4	J N
Benzene, 2-ethenyl-1,4-dimethyl-	55	J N
1H-Indene, 2,3-dihydro-1,3-dimethyl-	11	J N
Benzene, (2-methyl-1-butenyl)-	6.3	J N
1H-Indene, 2,3-dihydro-1,6-dimethyl-	19	J N
2-Ethyl-2,3-dihydro-1H-indene	10	J N
1H-Indene, 2,3-dihydro-4,7-dimethyl-	5.3	J N
1H-Indene, 2,3-dihydro-1,2-dimethyl-	9.8	J N

RT mm:ss Retention Time in mm:ss format

J : Indicates an Estimated Value for TICs

N : This flag indicates the presumptive evidence of a compound.

Table 2
 Groundwater Analytical Results- SVO SIMs
 200 Ash Street
 Delanco Township, Burlington County, NJ

Sample ID	NJAC 7:9C	TW-1	TW-2
Lab Sample ID	GW QualStds	460-203274-12	460-203274-13
Sampling Date	ClassII A	2/18/2020	2/18/2020
Matrix	Higher Values	Water	Water
Dilution Factor	2019	1	1
Unit	ug/l	ug/l	ug/l
WATER BY 8270D SIM			
Benzo[a]anthracene	0.1	0.055	0.019 J
Benzo[a]pyrene	0.1	0.024 J	0.022 U
Benzo[b]fluoranthene	0.2	0.057	0.024 U
Bis(2-chloroethyl)ether	7	0.026 U	0.026 U
Hexachlorobenzene	0.02	0.013 U	0.013 U
N-Nitrosodimethylamine	0.8	0.12 U	0.12 U
Pentachlorophenol	0.3	0.15 U *	0.15 U *
Total Conc	NA	0.136	0.019

* : LCS or LCSD is outside acceptance limits.

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

U : Indicates the analyte was analyzed for but not detected.

Table 2
Groundwater Analytical Results- SVOC+TICS
200 Ash Street
Delanco Township, Burlington County, NJ

Sample ID	NJAC 7:9C	TW-1	TW-2
Lab Sample ID	GW QualStds	460-203274-12	460-203274-13
Sampling Date	ClassII A	2/18/2020	2/18/2020
Matrix	Higher Values	Water	Water
Dilution Factor	2019	1	1
Unit	ug/l	ug/l	ug/l
WATER BY 8270D			
1,1'-Biphenyl	400	1.2 U	1.2 U
1,2,4,5-Tetrachlorobenzene	NA	1.2 U	1.2 U
2,2'-oxybis[1-chloropropane]	300	0.63 U	0.63 U
2,3,4,6-Tetrachlorophenol	200	0.75 U	0.75 U
2,4,5-Trichlorophenol	700	0.88 U	0.88 U
2,4,6-Trichlorophenol	20	0.86 U	0.86 U
2,4-Dichlorophenol	20	1.1 U	1.1 U
2,4-Dimethylphenol	100	0.62 U	0.62 U
2,4-Dinitrophenol	40	14 U	14 U
2,4-Dinitrotoluene	NA	1.0 U	1.0 U
2,6-Dinitrotoluene	NA	0.83 U	0.83 U
2-Chloronaphthalene	600	1.2 U	1.2 U
2-Chlorophenol	40	0.38 U	0.38 U
2-Methylnaphthalene	30	1.1 U	1.1 U
2-Methylphenol	50	0.67 U	0.67 U
2-Nitroaniline	NA	0.47 U	0.47 U
2-Nitrophenol	NA	0.75 U	0.75 U
3,3'-Dichlorobenzidine	30	1.4 U	1.4 U
3-Nitroaniline	NA	1.9 U	1.9 U
4,6-Dinitro-2-methylphenol	0.7	13 U	13 U
4-Bromophenyl phenyl ether	NA	0.75 U	0.75 U
4-Chloro-3-methylphenol	100	0.58 U	0.58 U
4-Chloroaniline	30	1.9 U	1.9 U
4-Chlorophenyl phenyl ether	NA	1.3 U	1.3 U
4-Methylphenol	50	0.65 U	0.65 U
4-Nitroaniline	NA	1.2 U	1.2 U
4-Nitrophenol	NA	4.0 U	4.0 U
Acenaphthene	400	1.1 U	1.1 U
Acenaphthylene	100	0.82 U	0.82 U
Acetophenone	700	2.3 U	2.3 U
Anthracene	2000	0.63 U	0.63 U
Atrazine	3	1.3 U*	1.3 U*
Benzaldehyde	NA	2.1 U	2.1 U
Benzo[g,h,i]perylene	100	1.4 U	1.4 U
Benzo[k]fluoranthene	0.5	0.67 U	0.67 U
Bis(2-chloroethoxy)methane	NA	0.59 U	0.59 U
Bis(2-ethylhexyl) phthalate	3	1.7 U	1.7 U
Butyl benzyl phthalate	100	0.85 U	0.85 U
Caprolactam	4000	0.68 U*	0.68 U*
Carbazole	NA	0.68 U	0.68 U
Chrysene	5	0.91 U	0.91 U
Dibenz(a,h)anthracene	0.3	0.72 U	0.72 U
Dibenzofuran	NA	1.1 U	1.1 U
Diethyl phthalate	6000	0.98 U	1.3 J
Dimethyl phthalate	100	0.77 U	0.77 U
Di-n-butyl phthalate	700	0.84 U	0.84 U
Di-n-octyl phthalate	100	4.8 U	4.8 U
Fluoranthene	300	0.84 U	0.84 U
Fluorene	300	0.91 U	0.91 U
Hexachlorobutadiene	1	0.78 U	0.78 U
Hexachlorocyclopentadiene	40	3.6 U	3.6 U
Hexachloroethane	7	0.80 U	0.80 U
Indeno[1,2,3-cd]pyrene	0.2	0.94 U	0.94 U
Isophorone	40	0.80 U	0.80 U
Naphthalene	300	1.1 U	1.1 U
Nitrobenzene	6	0.57 U	0.57 U
N-Nitrosodi-n-propylamine	10	0.43 U	0.43 U
N-Nitrosodiphenylamine	10	0.89 U	0.89 U
Phenanthrene	100	0.58 U	0.86 J
Phenol	2000	0.29 U	0.29 U
Pyrene	200	1.6 U	1.6 U
Total Conc	NA	0.0	2.16

* : LCS or LCSD is outside acceptance limits.

* : RPD of the LCS and LCSD exceeds the control limits

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

U : Indicates the analyte was analyzed for but not detected.

APPENDIX A
SOIL BORING LOGS

Environmental Resolutions, Inc. 815 East Gate Drive, Suite 103 Mount Laurel, NJ 08054			Soil Boring Log	ID A-1	Project Number and Location 200 ASH
Depth to Groundwater: 4.5			Logger: MPT	Driller: Enviroprobe	2/18/2020
Drilling Method: Geoprobe/truck			Time:		
Depth (feet)	SAMPLE		PID (ppmv)	DESCRIPTION	REMARKS
	NO.	DEPTH			
1				No Recovery	Boring A-1 = AOC-3: Loading Dock
2					
3					
4			0	dark brown silty clay	
5	A-1	4-4.5	0	brown clayey-silt	
6				No Recovery	
7					
8					
9			0	dark brown clay	
10			0	light brown clayey silt	
				No Recovery	
11			0	brown silty clay	
			0		
12			0		
			0		
13			0		
			0		
14			0	Temp well TW-1 installed	
15			0		

end of boring

Environmental Resolutions, Inc. 815 East Gate Drive, Suite 103 Mount Laurel, NJ 08054				Soil Boring Log	ID A-2	Project Number and Location 200 ASH	
Depth to Groundwater: 4'				Logger: MPT	Driller: Enviroprobe		2/18/2020
Drilling Method: Geoprobe/truck				Time:			
Depth (feet)	SAMPLE		PID (ppmv)	DESCRIPTION	REMARKS		
	NO.	DEPTH					
1				No Recovery	Boring A-2 = AOC-1: Oil House		
2			0	dark brown clayey silt			
			0	light brown gravelly silty sand			
3	A-2	2.5-3	0				
			0	dark brown clayey silt			
4			0				
			0	brown clay			
5			0				
				No Recovery			
6			0				
			0	brown clay			
7			0				
			0	dark gray clayey silt			
8			0				
			0	gray clay			
9			0				
10			0				
				end of boring			
11							
12							
13							
14							
15							

Environmental Resolutions, Inc. 815 East Gate Drive, Suite 103 Mount Laurel, NJ 08054				Soil Boring Log	ID A-3	Project Number and Location 200 ASH		
Depth to Groundwater: 4'				Logger: MPT	Driller: Envirprobe	2/18/2020		
Drilling Method: Geoprobe/truck				Time:				
Depth (feet)	SAMPLE		PID (ppmv)	DESCRIPTION	REMARKS			
	NO.	DEPTH						
1				No Recovery	Boring A-3 = AOC-2: Former Powerhouse			
2								
3	A-3A	2.5-3	0	dark brown clayey silt				
			0	orange brown clayey silt				
4	A-3B	3.5-4	0	black silty clay; fine gravel; ODOR				
			0					
5			4.4	gray silty clay				
6				No Recovery				
7								
8	A-3C	7-7.5	32.5			Temp well TW-2 installed		
			26.5					
			20.4					
9			3.6					
			2.6					
10	A-3D	9.5-10	1.8					
			0					
11			0	dark gray clay				
			0					
12			0					
			0					
13			0					
			0					
14			0					
			0					
15			0	orange brown clayey silt				

end of boring

Environmental Resolutions, Inc. 815 East Gate Drive, Suite 103 Mount Laurel, NJ 08054			Soil Boring Log	ID A-4	Project Number and Location 200 ASH
Depth to Groundwater: 4.5			Logger: MPT	Driller: Enviroprobe	2/18/2020
Drilling Method: Geoprobe/truck			Time:		
Depth (feet)	SAMPLE		PID (ppmv)	DESCRIPTION	REMARKS
	NO.	DEPTH			
1				No Recovery	Boring A-4 = AOC-5: Historic Fill moved 1' closer to building for add'l boring; encountered fill material with dark gray gravel and clay layer beneath 0 PID
2					
3			0	brown silty clay; some medium gravel	
			0		
4			0	dark brown silty clay; glass pieces, brick, gravel, wood chips (Fill material)	
			0		
5			0	very gravelly gray silty clay	
6					
7					
8				Refusal at 5'2", large brick pieces at bottom of sleeve	
9					
10					
11				end of boring	
12					
13					
14					
15					

Environmental Resolutions, Inc. 815 East Gate Drive, Suite 103 Mount Laurel, NJ 08054			Soil Boring Log	ID A-5	Project Number and Location 200 ASH
Depth to Groundwater: 4.5'			Logger: MPT	Driller: Enviroprobe	2/18/2020
Drilling Method: Geoprobe/truck			Time:		
Depth (feet)	SAMPLE		PID (ppmv)	DESCRIPTION	REMARKS
	NO.	DEPTH			
1				No Recovery	Boring A-5: AOC-5 Historic Fill
2					
3					
4			0	mixed light and dark brown silty clay fine to coarse gravel, brick pieces (Fill)	
5			0		
6			0	brown clay, brick pieces mixed in	
7					
8					
9				No Recovery	
10			0		
11			0		
12				brown clay, brick pieces mixed in	
13					
14				end of boring	
15					

APPENDIX B
LABORATORY REPORT

APPENDIX C

ENVIROPROBE GEOPHYSICAL REPORT



GEOPHYSICAL INVESTIGATION REPORT

PERFORMED AT:

**200 Ash Street
Delanco, NJ 08075**

PREPARED FOR:

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February 18 , 2020

1.0 INTRODUCTION

Enviroprobe Service, Inc. (Enviroprobe) is an environmental investigation services firm which provides monitoring well installation (HSA), Geoprobe (DPT) drilling services and Environmental & Engineering Geophysics (EEG) services to the environmental consulting and engineering community.

Enviroprobe conducted a subsurface geophysical investigation at the subject property within client-specified areas of concern. Due to conditions and objectives, the investigation utilized a GSSI UtilityScan cart-mounted ground penetrating radar (GPR) unit with a 350 MHz antenna and a Fisher TW-6 metallic locator.

Ground penetrating radar (commonly called GPR) is a geophysical method that has been developed over the past thirty years for shallow, high-resolution, subsurface investigations of the earth. GPR uses high frequency pulsed electromagnetic waves (generally 10 MHz to 2,000 MHz) to acquire subsurface information. An EM wave is propagated downward into the ground by a transmitting antenna. Where abrupt changes in electrical properties occur in the subsurface, a portion of the energy is reflected back to the surface. This reflected wave is detected by a receiver antenna and transmitted to a control unit for real time processing and display. The penetration depth of the GPR unit varies from several inches to tens of feet according to site-specific conditions. The penetration depth decreases with increased soil conductivity. The penetration depth is the greatest in ice, dry sands, and fine gravels. Clayey, highly saline or saturated soils, areas covered by concrete, foundry slag, or other highly conductive materials greatly reduce GPR penetration. GPR is a method that is commonly used for environmental, engineering, archaeological, and other shallow investigations.

The Fisher TW-6 metallic locator is designed to find pipes, cables and other metallic objects such as underground storage tanks (USTs). The TW-6 transmitter generates an electromagnetic field that induces electrical currents in the subsurface. These currents produce a secondary electromagnetic field that is measured by the TW-6 receiver. One surveyor can carry both the transmitter and receiver together to search for underground metallic objects, although the TW-6 response can also be affected by the electrical properties of non-metallic materials in the subsurface.

2.0 SCOPE OF WORK

On February 18, 2020, a geophysical technician from Enviroprobe Service Inc. was mobilized to the subject property to perform a geophysical investigation. The purpose of the investigation was to detect possible USTs and/or piping associated with a UST in the client selected exterior portions of the subject property. The ground surface of the survey area consisted of natural soil surfaces.

3.0 SURVEY RESULTS

The utility survey was conducted using a cart-mounted GPR unit and a TW-6 metallic locator.

The GPR and TW-6 were used in a grid pattern over all client specified areas of the site. Based on the results of the GPR and TW-6 surveys, no metallic anomalies which typically consist with a UST, vent piping, or product piping were detected on site.



4.0 LIMITATIONS

On-site limitations included fencing, trees, and room to maneuver the GPR.

Due to surface conditions and subsurface content, the GPR penetration depth was estimated at about 4 feet in the majority of the survey area.

Due to the dielectric properties of the subsurface, plastic polymer and fiberglass utilities may not have been detected.

The underground utility survey was conducted in compliance with the industry standard of care guidelines found in ASCE 38-02 (Level B).

5.0 WARRANTIES

The field observations and measurements reported herein are considered sufficient in detail and scope for this project. Enviroprobe Service, Inc. warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted environmental engineering methods. There is a possibility that conditions may exist which could not be identified within the scope of this project and were not apparent during the site activities performed for this project.

Enviroprobe represents that the services were performed in a manner consistent with that level of care and skill ordinarily exercised by environmental consultants under similar circumstances. No other representations to Client, express or implied, and no warranty or guarantee is included or intended in this agreement, or in any report, document, or otherwise.

Enviroprobe Service, Inc. believes that the information provided in this report is reliable. However, Enviroprobe cannot warrant or guarantee that the information provided by others is complete or accurate. No other warranties or guarantees are implied or expressed.

GPR data is subject to signal anomalies and operator interpretation. The GPR data is intended to provide the locations of areas of concern requiring additional investigation or the approximate location of underground structures and utilities. Great care must be utilized when excavating and/or drilling around underground structures and utilities since GPR data can only be used for estimation purposes and GPR data is subject to misinterpretation. Enviroprobe can not guarantee that utilities, post-tension cables, and/or rebar will not be incurred during drilling, cutting, coring, or excavating activities.

This report was prepared pursuant to the contract Enviroprobe has with the Client. That contractual relationship included an exchange of information about the property that was unique and between Enviroprobe and its client and serves as the basis upon which this report was prepared. Because of the importance of the communication between Enviroprobe and its client, reliance or any use of this report by anyone other than the Client, for whom it was prepared, is prohibited and therefore not foreseeable to Enviroprobe.

Reliance or use by any such third party without explicit authorization in the report does not make said third party a third party beneficiary to Enviroprobe contract with the Client. Any such unauthorized reliance on or use of this report, including any of its information or conclusions, will be at the third party's risk. For the same reasons, no warranties or representations, expressed or implied in this report, are made to any such third party.

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