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ENVIRONMENTAL

Mr. William Bennett- Project Manager
Senior Engineering Geologist
Remedial Bureau C
Division of Environmental Remediation
625 Broadway, Albany, New York 12233-7014

Subject:
Supplemental Remedial Investigation Report
Operable Unit 3
Ramapo Paint Sludge Site, Rockland County, New York
Site #3-44-064

Date:
March 21, 2012

Contact:
Jon Rocklin

Phone:
201.684.1410

Email:
Jon. Rocklin@arcadis-us.com

Our ref:
NJ000602.0003

Dear Mr. Bennett:

ARCADIS U.S., Inc (ARCADIS), on behalf of the Ford Motor Company (Ford), has prepared this Supplemental Remedial Investigation Report (RIR) to provide additional information regarding the extent of paint sludge and impacted soil within the pond and associated coffer dam located at Operable Unit 3 (OU-3) at the Ramapo Paint Sludge Site located in Pomona, Rockland County, New York (the Site). A site map illustrating the site location is presented as **Figure 1**. This report is provided as outlined in the OU-3 Supplemental Remedial Investigation Work Plan (RIWP) submitted on August 17, 2011 to the New York State Department of Environmental Conservation (NYSDEC) and approved by NYSDEC in a letter dated August 18, 2011.

The objectives of this supplemental RIR are to:

- Delineate the horizontal and vertical extent of paint sludge deposits at OU-3; and
- Calculate estimated volumes of paint sludge located at OU-3.

The delineation of the paint sludge deposits will be used to calculate the quantity of paint sludge and enable the evaluation of the implementability, technical feasibility and costs of paint sludge remediation at OU-3.

Site Location and History

The area identified as OU-3 is located within a residential development, and is bounded to the north by a small creek and commercial property, to the east by Mt. Ivy County Park, and to the south and west by residential properties.

The OU-3 area encompasses approximately one acre of land located adjacent to a small man-made pond measuring approximately 200-foot wide by 400-foot long. The pond is confined by a man-made berm on its east side. The pond is elevated above the land to the east, while the residential homes west of the pond are elevated above the pond.

The pond appears to be fed from a culvert that connects it to a small stream running just north of the pond. Runoff draining from the residential development also discharges to the pond. The pond drains through an outlet structure to a lower lying wet area to the east.

The Rockland County Department of Health was contacted during late 2005 or early 2006 by a local newspaper reporter, who indicated he had been contacted by a New Jersey contractor regarding the potential presence of paint sludge in Pomona, New York. The contractor indicated that some time during 1972-1973, paint sludge was found during the excavation of a pond for a camp at this location. A former property owner indicated that a prior owner disposed of various wastes on the property during the 1960's. No information prior to 1960 has been obtained for the OU-3 area; however, the area is presumed to have been agricultural or undeveloped before 1960.

On March 10, 2006, the NYSDEC, together with the Rockland County Department of Health, toured the location to the east of a small pond near Camp Hill Road in Pomona and confirmed the presence of paint sludge.

The area where paint sludge was identified contains a variety of waste material, including construction debris, uprooted trees, and general refuse. Survey nodes depicting locations of visible paint sludge is illustrated on **Figure 2.** Based on visible observations, paint sludge was generally limited to small, brick-sized pieces or smaller on the ground surface, and these were removed by ARCADIS during an Interim Remedial Action performed in May 2006.

Previous Investigations and Remedial Actions

Remedial investigations (RI) were performed at OU-3 from May 2006 through October 2008. The RI consisted of a field reconnaissance survey, surface water and sediment characterization, groundwater monitoring well installation and sampling, test pit investigation, pond investigation, and the performance of an interim remedial action.

During the field reconnaissance survey, visible paint sludge was collected by hand, placed in poly-lined, 5-gallon buckets, and transferred to two 55-gallon drums as part of the interim remedial action. A sample of the paint sludge was collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and toxicity characteristic leaching procedure (TCLP) metals. The paint sludge was characterized as hazardous for lead leachability, and transported off-site for disposal at EQ Michigan's facility located in Belleville, Michigan.

The results of the RI identified paint sludge at OU-3 as limited to one-contiguous area on the east side of the pond. The test pits confirmed the presence of a continuous deposit of sludge at least partially covered by fill material comprising the berm. Some of the paint sludge material has eroded into the shallow eastern bank of the pond.

Due to the pond being full of water at the time of the test pitting investigation, it was determined that digging further west into the berm for delineation purposes was not safe with the concerns of possibly compromising the integrity of the berm and pond.

Scope of Work

During the October 2008 investigation, ARCADIS identified a continuous flow of paint sludge at the eastern side of the coffer dam on the eastern side of the pond (Test Pit TP-05 and TP-06 on **Figure 2**). The paint sludge flow observed appeared to go under the coffer dam toward the pond.

During a site visit with the NYSDEC in March 2011, ARCADIS observed that the water level in the pond was drastically lower than it has historically been. It was determined that the drainage outflow stand-up pipe within the pond had broken off and allowed water to drain from the pond. This drainage exposed approximately 15

to 20 feet of dry shoreline. At the request of the NYSDEC, Ford conducted a geoprobe® investigation to determine the limits of the paint sludge.

The proposed scope of work consisted of advancing 29 borings in a 40- by 20-foot grid pattern across the focused investigation area identified in the May 2006 through October 2008 investigations.

The field activities were performed on January 18th and 19th, 2012 and February 2, 2012. Prior to the start of field activities, access to the work area was obtained from the owner of the property located at 9 Lea Court. In addition, due to the site topography and equipment accessibility concerns, it was determined that equipment access to the work area could be more feasible through the property located adjacent to the northwest corner of OU-3 (165 Ramapo Road), and therefore, access was obtained from the owner of this adjoining property, which was used to mobilize equipment to the Site.

A total of 35 borings (SB-1 through SB-35) were advanced by Summit Drilling Inc., which included 6 additional borings to delineate the western side of the focused investigation area as illustrated on **Figure 2**.

The soil boring layout was performed by ARCADIS staff using a measuring tape and pin flags. Field adjustments were made to the proposed grid based on field observation and conditions. Adjustments were made to improve the investigation efforts to complete delineation of the paint sludge deposit. Final boring locations were surveyed by a licensed surveyor in the state of New York.

Boring advancement began on top of the coffer dam directly west of the known paint sludge deposit, as identified on **Figure 2,** and continued to be advanced in a step-out approach as identified in **Figure 2** until the limits of paint sludge were delineated.

Soil cores were collected in 5-foot long by 2-inch diameter acetate liners that were fitted inside a stainless steel macro-core sampler. Each soil core was logged and field screened using a Photo-ionization Detector (PID) and visually inspected for the presence of paint sludge. Soil boring logs are included as **Attachment 1.**

All paint sludge material and associated soil was consolidated in a 55-gal drum on-site and sampled for waste characterization and off-site disposal. All soil borings were backfilled with bentonite pellets and hydrated.

Supplemental to the proposed scope of work and at the request of the NYSDEC, a total of 6 soil samples were collected from the soil borings for laboratory analysis. Surface samples were collected from 0 to 0.5 feet below ground surface (bgs) and subsurface samples were collected from approximately 1 foot beneath continuous flow of paint sludge (approximately 14 to15 feet bgs). Samples were collected and analyzed for VOCs and metals with two of the six samples being analyzed for VOCs, SVOCs, Pesticides, PCBs and metals.

Findings and Recommendations

A total of 35 soil borings (SB-1 through SB-35) were advanced within OU-3 as part of this supplemental RI. Soil boring locations are shown on **Figure 2.**

Paint sludge was observed in Soil Borings SB-06 and SB-16. Paint sludge observed ranged in size from small pieces to cobble-sized chunks. The paint sludge was intermixed with the soil and was not a continuous flow. This suggests that the paint sludge/soil was reworked or moved since the time of original deposition.

Soil borings SB-01 through SB-04, SB-08 through SB-13, SB-17, and SB-22 through SB-24, were advanced within a continuous flow of paint sludge. The soil borings were located along the top of the coffer dam and along its eastern and western slopes within the focused investigation area. The paint sludge flow emerges on the eastern and western extents. The maximum depth of continuous flow was identified at 14 feet bgs in soil borings SB-09 and SB-22 located on the plateau corresponding to the top of the berm. The continuous flow ranges from approximately 1-foot thick along the western slope of the coffer dam (Soil Boring SB-24) to a thickness of 8 feet along the top of the berm (Soil Boring SB-22). This suggests that the horizontal extents have been delineated and paint sludge was deposited at this location prior to the construction of the coffer dam.

Paint sludge was not observed to depth in soil borings SB-05, SB-07, SB-14, SB-15, SB-18 through SB-21, and SB-25 through SB-35. Soil Borings, SB-05, SB-07, and SB-28 through SB-30 were advanced along the southern boundary of the focused investigation area, just south of where previous survey nodes had identified paint sludge in May 2006. Soil Borings SB-14, SB-15 and SB-25, were advanced along the Northern Boundary in the vicinity of Test Pit TP-01. Soil Borings SB-18 through SB-21, SB-26 and SB-27 make up the western boundary of the focused investigation area and lie on the western slope of the coffer dam. During previous investigations, these soil borings would have been under water due to the pond elevation. The

current pond elevation is illustrated on **Figure 2.** Soil Borings SB-31 through SB-35 were advanced along the eastern boundary of focused investigation area along the lower lying wet area.

The vertical and horizontal extents of paint sludge have been delineated. **Figures 2, 3 and 4** illustrate the vertical and horizontal extents through a plan view and cross-sections.

At the request of the NYSDEC, a total of 6 soil samples were collected from the focused investigation area during the supplemental RI. Sample locations are shown on **Figure 3.** Samples were analyzed for VOCs and metals with two of the six samples being analyzed for VOCs, SVOCs, Pesticides, PCBs and metals. The analytical results are summarized in **Table 1** and **Attachment 2.**

The surface soil results are provided in **Table 1**. Surface samples were collected from 0 to 0.5 feet bgs at Soil Borings SB-09, SB-16 and SB-17. Soil Boring SB-09 exceeded the NYSDEC Soil Cleanup Criteria (SCC) for Residential Use of 350 milligrams/kilogram (mg/kg) for Barium at a concentration of 519 mg/kg. Soil Boring, SB-16 exceeded the NYSDEC SCC for Residential Use of 16 mg/kg for Arsenic, 350 mg/kg for Barium and 400 mg/kg for Lead at a concentration of 19.4 mg/kg, 3,730 mg/kg, and 2,540 mg/kg, respectively. With the exception of arsenic, barium and lead, VOCs and metals were not detected at concentrations greater than the NYSDEC SCC for Residential Use.

Sub-surface soil results are provided in **Table 1**. Subsurface samples were collected from a depth of approximately 1 foot beneath continuous flow of paint sludge (14 to 15 feet bgs) at Soil Borings SB-09, SB-10 and SB-13. No VOCs or metals were detected at concentrations greater than the NYSDEC SCC for Residential Use.

All sludge material and associated soil was placed in poly-lined, 5-gallon buckets prior to consolidation in a 55-gal drum on-site as part of the supplemental RI. A sample of paint sludge and associated soil was collected and analyzed for VOCs, SVOCs, PCBs, metals and TCLP metals. The analytical results of the paint sludge and associated soil indicate that the 55 gallon drum of paint sludge and soil was non hazardous. The paint sludge and associated soil results are presented in **Table 2.**

Summary and Conclusions

An estimated 0.50 acres (approximately 150- by 150-foot area) of the OU-3 area was found to contain paint sludge. One continuous flow was observed, at least partially covered by fill material comprising the berm, and some pieces of sludge were observed in fill material within the berm.

There is approximately 0 to 8 feet of fill soil over a 2 to 8 foot thick layer of paint sludge. Cross sections of the paint sludge are presented on Figures 3 and 4.

An estimated 7,800 cubic yards of paint sludge and impacted material has been identified within the focused investigation area.

References

ARCADIS. Remedial Investigation Report, Ramapo Paint Sludge Site OU-3. September 1, 2010.

ARCADIS. Supplemental Remedial Investigation Workplan, Site #3-44-064, Ramapo Paint Sludge Site. August 17, 2011.

NYSDEC. Re: OU-3 Supplemental Remedial Investigation Work Plan Ramapo Pain Sludge Site, Site No. 3-44-064. August 18, 2011.

6 NYCRR Part 375. DER-10- Technical Guidance for Site Investigation and Remediation.

Sincerely,

ARCADIS U.S., Inc.

Jon Rocklin
Associate Project Manager

Copies:
B. Bussa (Ford)
M. Zakkar (Ford)
D. Simmons
A. Perretta (NYSDOH)

Tables:

Table 1	Summary of Soil Analytical Results
Table 2	Summary of Waste Characterization Analytical Results

Figures:

Figure 1	Site Location Map
Figure 2	Remedial Investigation Sample Locations for OU-3
Figure 3	Cross Section A-A’
Figure 4	Cross Section B-B’

Attachments:

Attachment 1	Soil Boring Logs
Attachment 2	Laboratory Analytical Report/Data Usability Summary Report

Ford Ramapo

Table 1. Summary of Soil Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

	Standards		Surface Samples			Sub-Surface Samples				
Sample ID	**375-6.8(b)**	**375-6.8(b)**	**OU3-SB-09(0-0.5)**	**OU3-SB-16(0-0.5)**	**OU3-SB-17(0-0.5)**	**OU3-SB-09(14.5-15)**	**OU3-SB-10(14-14.5)**	**OU3-SB-13(14.5-15)**	**FB-01192012**	**TB-01192012**
Sample Date	**Residential**	**Restricted**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**
Depth Interval		**Residential**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**14.5 - 15**	**14 - 14.5**	**14.5 - 15**		
Validation Status			**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
VOC										
1,1,1-Trichloroethane	100	100	< 0.00026	< 0.00031	< 0.0004	< 0.013	< 0.0006	< 0.00022	< 0.24	< 0.24
1,1,2,2-Tetrachloroethane	NS	NS	< 0.00019	< 0.00023	< 0.0003	< 0.0094	< 0.00045	< 0.00017	< 0.2	< 0.2
1,1,2-Trichloroethane	NS	NS	< 0.00047	< 0.00056	< 0.00072	< 0.023	< 0.0011	< 0.0004	< 0.23	< 0.23
1,1-Dichloroethane	19	26	< 0.00024	< 0.00028	< 0.00036	< 0.011	< 0.00054	< 0.0002	< 0.19	< 0.19
1,1-Dichloroethene	100	100	< 0.00067	< 0.0008	< 0.001	< 0.032	< 0.0015	< 0.00057	< 0.28	< 0.28
1,2,4-Trichlorobenzene	NS	NS	< 0.00037	< 0.00044	< 0.00057	< 0.018	< 0.00085	< 0.00031	< 0.15	< 0.15
1,2-Dibromo-3-chloropropane	NS	NS	< 0.0016	< 0.002	< 0.0025	< 0.079	< 0.0038	< 0.0014	< 1.3	< 1.3
1,2-Dibromoethane	NS	NS	< 0.00026	< 0.00031	< 0.0004	< 0.013	< 0.00059	< 0.00022	< 0.21	< 0.21
1,2-Dichlorobenzene	100	100	< 0.0003	< 0.00036	< 0.00046	< 0.015	< 0.00069	< 0.00026	< 0.18	< 0.18
1,2-Dichloroethane	2.3	3.1	< 0.0002	< 0.00024	< 0.0003	< 0.0096	< 0.00045	< 0.00017	< 0.18	< 0.18
1,2-Dichloropropane	NS	NS	< 0.00029	< 0.00035	< 0.00044	< 0.014	< 0.00066	< 0.00025	< 0.22	< 0.22
1,3-Dichlorobenzene	17	49	< 0.00021	< 0.00025	< 0.00032	< 0.01	< 0.00048	< 0.00018	< 0.29	< 0.29
1,4-Dichlorobenzene	9.8	13	< 0.00019	< 0.00022	< 0.00028	< 0.0089	< 0.00042	< 0.00016	< 0.26	< 0.26
2-Butanone (MEK)	100	100	< 0.0047	< 0.0056	< 0.0072	< 0.23	0.0287	< 0.004	< 2.9	< 2.9
2-Hexanone	NS	NS	< 0.0027	< 0.0032	< 0.0041	< 0.13	< 0.0062	< 0.0023	< 3	< 3
4-Methyl-2-pentanone(MIBK)	NS	NS	< 0.0029	< 0.0034	< 0.0044	< 0.14	< 0.0066	< 0.0024	< 1.2	< 1.2
Acetone	100	100	< 0.0072	< 0.0086	< 0.011	< 0.35	0.086 J	< 0.0061	< 7.6	< 7.6
Benzene	2.9	4.8	< 0.00014	< 0.00017	< 0.00022	0.0151 J	0.203	0.0016	< 0.22	< 0.22
Bromodichloromethane	NS	NS	< 0.00024	< 0.00029	< 0.00037	< 0.012	< 0.00056	< 0.00021	< 0.23	< 0.23
Bromoform	NS	NS	< 0.00082	< 0.00098	< 0.0013	< 0.04	< 0.0019	< 0.0007	< 0.24	< 0.24
Bromomethane	NS	NS	< 0.00043	< 0.00051	< 0.00066	< 0.021	< 0.00098	< 0.00036	< 0.31	< 0.31
Carbon disulfide	NS	NS	< 0.00021	< 0.00025	< 0.00033	< 0.01	< 0.00049	< 0.00018	< 0.18	< 0.18
Carbon tetrachloride	1.4	2.4	< 0.00038	< 0.00045	< 0.00058	< 0.018	< 0.00086	< 0.00032	< 0.19	< 0.19
Chlorobenzene	100	100	< 0.00035	< 0.00042	< 0.00054	< 0.017	< 0.0008	< 0.0003	< 0.22	< 0.22
Chloroethane	NS	NS	< 0.00044	< 0.00053	< 0.00068	< 0.021	< 0.001	< 0.00038	< 0.37	< 0.37
Chloroform	10	49	< 0.00053	< 0.00063	< 0.00081	< 0.025	< 0.0012	< 0.00045	< 0.21	< 0.21
Chloromethane	NS	NS	< 0.00068	< 0.00081	< 0.001	< 0.033	< 0.0016	< 0.00058	< 0.22	< 0.22
cis-1,2-Dichloroethene	59	100	< 0.00035	< 0.00042	< 0.00054	< 0.017	0.0029 J	< 0.0003	< 0.22	< 0.22
cis-1,3-Dichloropropene	NS	NS	< 0.00017	< 0.0002	< 0.00025	< 0.008	< 0.00038	< 0.00014	< 0.22	< 0.22
Cyclohexane	NS	NS	< 0.00041	< 0.00049	< 0.00063	< 0.02	0.0294	< 0.00035	< 0.29	< 0.29
Dibromochloromethane	NS	NS	< 0.00018	< 0.00022	< 0.00028	< 0.0088	< 0.00042	< 0.00016	< 0.2	< 0.2
Dichlorodifluoromethane	NS	NS	< 0.00035	< 0.00042	< 0.00054	< 0.017	< 0.0008	< 0.0003	< 0.31	< 0.31
Ethylbenzene	30	41	0.00025 J	< 0.00019	< 0.00025	1.29	0.0371	0.0043 J	< 0.21	< 0.21
Freon 113	NS	NS	< 0.00078	< 0.00093	< 0.0012	< 0.038	< 0.0018	< 0.00066	< 0.49	< 0.49
Isopropylbenzene	NS	NS	< 0.00015	< 0.00018	< 0.00023	0.19 J	0.0327	0.0045 J	< 0.19	< 0.19
Methyl Acetate	NS	NS	< 0.0024	< 0.0029	< 0.0037	< 0.12	< 0.0055	< 0.002	< 2.9	< 2.9
Methyl Tert Butyl Ether	62	100	< 0.00019	< 0.00023	< 0.0003	< 0.0094	< 0.00045	< 0.00017	< 0.18	< 0.18
Methylcyclohexane	NS	NS	< 0.00027	< 0.00032	< 0.00041	0.0503 J	0.0211	0.0012 J	< 0.18	< 0.18
Methylene chloride	51	100	< 0.00025	< 0.0003	< 0.00038	< 0.012	< 0.00057	< 0.00021	< 0.2	< 0.2
Styrene	NS	NS	< 0.0002	< 0.00024	< 0.00031	< 0.0097	< 0.00046	< 0.00017	< 0.23	< 0.23
Tetrachloroethene	5.5	19	< 0.00021	< 0.00025	< 0.00032	< 0.01	< 0.00048	< 0.00018	< 0.32	< 0.32
Toluene	100	100	< 0.00041	< 0.00049	< 0.00063	0.884	< 0.00094	0.00041 J	< 0.15	< 0.15
trans-1,2-Dichloroethene	100	100	< 0.00046	< 0.00055	< 0.00071	< 0.022	< 0.0011	< 0.00039	< 0.31	< 0.31
trans-1,3-Dichloropropene	NS	NS	< 0.00037	< 0.00044	< 0.00056	< 0.018	< 0.00084	< 0.00031	< 0.19	< 0.19
Trichloroethene	10	21	< 0.00027	< 0.00032	< 0.00041	< 0.013	< 0.00062	< 0.00023	< 0.21	< 0.21
Trichlorofluoromethane	NS	NS	< 0.00053	< 0.00063	< 0.0008	< 0.025	< 0.0012	< 0.00044	< 0.35	< 0.35
Vinyl chloride	0.21	0.9	< 0.0005	< 0.0006	< 0.00077	< 0.024	< 0.0011	< 0.00043	< 0.27	< 0.27
Xylene (total)	100	100	0.0019	0.00097 J	< 0.00031	9.86	0.788	0.299 J	< 0.17	< 0.17
Total TIC, Volatile	NS	NS	0	0	0	25.4 JN	0.276 JN	0.114 JN	0	0

Ford Ramapo

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Depth Interval		**Residential**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**14.5 - 15**	**14 - 14.5**	**14.5 - 15**		
Validation Status			**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
SVOC										
1,1'-Biphenyl	NS	NS	NA	< 0.004	NA	NA	NA	< 0.0038	NA	NA
2,4,5-Trichlorophenol	NS	NS	NA	< 0.04	NA	NA	NA	< 0.038	NA	NA
2,4,6-Trichlorophenol	NS	NS	NA	< 0.032	NA	NA	NA	< 0.031	NA	NA
2,4-Dichlorophenol	NS	NS	NA	< 0.055	NA	NA	NA	< 0.053	NA	NA
2,4-Dimethylphenol	NS	NS	NA	< 0.057	NA	NA	NA	< 0.056	NA	NA
2,4-Dinitrophenol	NS	NS	NA	< 0.042 J	NA	NA	NA	< 0.04 J	NA	NA
2,4-Dinitrotoluene	NS	NS	NA	< 0.015	NA	NA	NA	< 0.014 J	NA	NA
2,6-Dinitrotoluene	NS	NS	NA	< 0.013	NA	NA	NA	< 0.013	NA	NA
2-Chloronaphthalene	NS	NS	NA	< 0.011	NA	NA	NA	< 0.01	NA	NA
2-Chlorophenol	NS	NS	NA	< 0.035	NA	NA	NA	< 0.033	NA	NA
2-Methylnaphthalene	NS	NS	NA	< 0.019	NA	NA	NA	0.0428 J	NA	NA
2-Methylphenol	100	100	NA	< 0.039	NA	NA	NA	< 0.038	NA	NA
2-Nitroaniline	NS	NS	NA	< 0.015	NA	NA	NA	< 0.015	NA	NA
2-Nitrophenol	NS	NS	NA	< 0.036	NA	NA	NA	< 0.035	NA	NA
3&4-Methylphenol	NS	NS	NA	< 0.043	NA	NA	NA	< 0.042	NA	NA
3,3'-Dichlorobenzidine	NS	NS	NA	< 0.0087	NA	NA	NA	< 0.0084	NA	NA
3-Nitroaniline	NS	NS	NA	< 0.014	NA	NA	NA	< 0.013	NA	NA
4,6-Dinitro-o-cresol	NS	NS	NA	< 0.042	NA	NA	NA	< 0.04	NA	NA
4-Bromophenyl phenyl ether	NS	NS	NA	< 0.012	NA	NA	NA	< 0.012	NA	NA
4-Chloro-3-methyl phenol	NS	NS	NA	< 0.034	NA	NA	NA	< 0.033	NA	NA
4-Chloroaniline	NS	NS	NA	< 0.011	NA	NA	NA	< 0.011	NA	NA
4-Chlorophenyl phenyl ether	NS	NS	NA	< 0.01	NA	NA	NA	< 0.01	NA	NA
4-Nitroaniline	NS	NS	NA	< 0.013	NA	NA	NA	< 0.013	NA	NA
4-Nitrophenol	NS	NS	NA	< 0.058 J	NA	NA	NA	< 0.056 J	NA	NA
Acenaphthene	100	100	NA	< 0.0099	NA	NA	NA	< 0.0096	NA	NA
Acenaphthylene	100	100	NA	0.0421	NA	NA	NA	< 0.011	NA	NA
Acetophenone	NS	NS	NA	< 0.006	NA	NA	NA	< 0.0058	NA	NA
Anthracene	100	100	NA	0.0286 J	NA	NA	NA	< 0.012	NA	NA
Atrazine	NS	NS	NA	< 0.0067	NA	NA	NA	< 0.0065	NA	NA
Benzaldehyde	NS	NS	NA	< 0.0079	NA	NA	NA	< 0.0076	NA	NA
Benzo(a)anthracene	1	1	NA	0.0651	NA	NA	NA	< 0.011	NA	NA
Benzo(a)pyrene	1	1	NA	0.0869 J	NA	NA	NA	< 0.01 J	NA	NA
Benzo(b)fluoranthene	1	1	NA	0.0887 J	NA	NA	NA	< 0.011 J	NA	NA
Benzo(g,h,i)perylene	100	100	NA	0.073	NA	NA	NA	< 0.012	NA	NA
Benzo(k)fluoranthene	1	3.9	NA	0.0204 J	NA	NA	NA	< 0.012	NA	NA
bis(2-Chloroethoxy)methane	NS	NS	NA	< 0.014	NA	NA	NA	< 0.013	NA	NA
bis(2-Chloroethyl)ether	NS	NS	NA	< 0.01	NA	NA	NA	< 0.01	NA	NA
bis(2-Chloroisopropyl)ether	NS	NS	NA	< 0.01	NA	NA	NA	< 0.0098	NA	NA
bis(2-Ethylhexyl)phthalate	NS	NS	NA	< 0.03	NA	NA	NA	< 0.029	NA	NA
Butyl benzyl phthalate	NS	NS	NA	< 0.02	NA	NA	NA	< 0.019	NA	NA
Caprolactam	NS	NS	NA	< 0.011	NA	NA	NA	< 0.01	NA	NA
Carbazole	NS	NS	NA	< 0.016	NA	NA	NA	< 0.015	NA	NA
Chrysene	1	3.9	NA	0.0823	NA	NA	NA	< 0.011	NA	NA
Dibenzo(a,h)anthracene	0.33	0.33	NA	0.0211 J	NA	NA	NA	< 0.011	NA	NA
Dibenzofuran	14	59	NA	< 0.01	NA	NA	NA	< 0.0098	NA	NA
Diethyl phthalate	NS	NS	NA	< 0.012	NA	NA	NA	< 0.011	NA	NA
Dimethyl phthalate	NS	NS	NA	< 0.012	NA	NA	NA	0.0597 J	NA	NA
Di-n-butyl phthalate	NS	NS	NA	< 0.0076	NA	NA	NA	< 0.0074	NA	NA
Di-n-octyl phthalate	NS	NS	NA	< 0.017	NA	NA	NA	< 0.016	NA	NA

Ford Ramapo

Table 1. Summary of Soil Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

	Standards		Surface Samples			Sub-Surface Samples				
Sample ID	**375-6.8(b)**	**375-6.8(b)**	**OU3-SB-09(0-0.5)**	**OU3-SB-16(0-0.5)**	**OU3-SB-17(0-0.5)**	**OU3-SB-09(14.5-15)**	**OU3-SB-10(14-14.5)**	**OU3-SB-13(14.5-15)**	**FB-01192012**	**TB-01192012**
Sample Date	**Residential**	**Restricted**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**
Depth Interval		**Residential**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**14.5 - 15**	**14 - 14.5**	**14.5 - 15**		
Validation Status			**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Fluoranthene	100	100	NA	0.0714 J	NA	NA	NA	< 0.015 J	NA	NA
Fluorene	100	100	NA	< 0.011	NA	NA	NA	< 0.011	NA	NA
Hexachlorobenzene	0.33	1.2	NA	< 0.011	NA	NA	NA	< 0.011	NA	NA
Hexachlorobutadiene	NS	NS	NA	< 0.0095	NA	NA	NA	< 0.0092	NA	NA
Hexachlorocyclopentadiene	NS	NS	NA	< 0.035	NA	NA	NA	< 0.034	NA	NA
Hexachloroethane	NS	NS	NA	< 0.0095	NA	NA	NA	< 0.0092	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	0.5	NA	0.0537	NA	NA	NA	< 0.011	NA	NA
Isophorone	NS	NS	NA	< 0.0092	NA	NA	NA	< 0.0089	NA	NA
Naphthalene	100	100	NA	0.0394 J	NA	NA	NA	0.441	NA	NA
Nitrobenzene	NS	NS	NA	< 0.0099	NA	NA	NA	< 0.0096	NA	NA
N-Nitroso-di-n-propylamine	NS	NS	NA	< 0.0083	NA	NA	NA	< 0.0081	NA	NA
N-Nitrosodiphenylamine	NS	NS	NA	< 0.02	NA	NA	NA	< 0.02	NA	NA
Pentachlorophenol	2.4	6.7	NA	< 0.058	NA	NA	NA	< 0.057	NA	NA
Phenanthrene	100	100	NA	0.0403 J	NA	NA	NA	< 0.015 J	NA	NA
Phenol	100	100	NA	< 0.036	NA	NA	NA	< 0.035	NA	NA
Pyrene	100	100	NA	0.122 J	NA	NA	NA	< 0.013 J	NA	NA
Total TIC, Semi Volatile	NS	NS	NA	NA	NA	NA	NA	19.75 J	NA	NA
Pesticides										
4,4'-DDD	2.6	13	NA	0.0035	NA	NA	NA	< 0.00034	NA	NA
4,4'-DDE	1.8	8.9	NA	0.0024	NA	NA	NA	< 0.0004	NA	NA
4,4'-DDT	1.7	7.9	NA	0.0094	NA	NA	NA	< 0.00049	NA	NA
Aldrin	0.019	0.097	NA	< 0.00035	NA	NA	NA	< 0.00034	NA	NA
alpha-BHC	0.097	0.48	NA	< 0.00053	NA	NA	NA	< 0.0005	NA	NA
alpha-Chlordane	0.91	4.2	NA	< 0.00046	NA	NA	NA	< 0.00044	NA	NA
Beta-BHC	0.072	0.36	NA	< 0.00049	NA	NA	NA	< 0.00047	NA	NA
Camphechlor	NS	NS	NA	< 0.0089	NA	NA	NA	< 0.0085	NA	NA
Delta-BHC	100	100	NA	< 0.00041	NA	NA	NA	< 0.00039	NA	NA
Dieldrin	0.039	0.2	NA	< 0.00055	NA	NA	NA	< 0.00052	NA	NA
Endosulfan I	4.8	24	NA	< 0.00034	NA	NA	NA	< 0.00033	NA	NA
Endosulfan II	4.8	24	NA	< 0.00046	NA	NA	NA	< 0.00044	NA	NA
Endosulfan Sulfate	4.8	24	NA	< 0.00064	NA	NA	NA	< 0.00061	NA	NA
Endrin	2.2	11	NA	< 0.00036	NA	NA	NA	< 0.00034	NA	NA
Endrin Aldehyde	NS	NS	NA	< 0.00067	NA	NA	NA	< 0.00064	NA	NA
Endrin Ketone	NS	NS	NA	< 0.00046	NA	NA	NA	< 0.00044	NA	NA
gamma-BHC (Lindane)	0.28	1.3	NA	< 0.00032	NA	NA	NA	< 0.00031	NA	NA
Gamma-Chlordane	NS	NS	NA	< 0.00036	NA	NA	NA	< 0.00034	NA	NA
Heptachlor	0.42	2.1	NA	< 0.00043	NA	NA	NA	< 0.00041	NA	NA
Heptachlor Epoxide	NS	NS	NA	< 0.00035	NA	NA	NA	< 0.00033	NA	NA
Methoxychlor	NS	NS	NA	< 0.0005	NA	NA	NA	< 0.00047	NA	NA
PCBs										
Aroclor 1016	1	1	NA	< 0.0092	NA	NA	NA	< 0.0087	NA	NA
Aroclor 1221	1	1	NA	< 0.021	NA	NA	NA	< 0.02	NA	NA
Aroclor 1232	1	1	NA	< 0.018	NA	NA	NA	< 0.017	NA	NA
Aroclor 1242	1	1	NA	< 0.011	NA	NA	NA	< 0.011	NA	NA
Aroclor 1248	1	1	NA	< 0.011	NA	NA	NA	< 0.01	NA	NA
Aroclor 1254	1	1	NA	< 0.016	NA	NA	NA	< 0.016	NA	NA
Aroclor 1260	1	1	NA	< 0.012	NA	NA	NA	< 0.011	NA	NA

Ford Ramapo

Table 1. Summary of Soil Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

	Standards		Surface Samples			Sub-Surface Samples				
Sample ID	**375-6.8(b)**	**375-6.8(b)**	**OU3-SB-09(0-0.5)**	**OU3-SB-16(0-0.5)**	**OU3-SB-17(0-0.5)**	**OU3-SB-09(14.5-15)**	**OU3-SB-10(14-14.5)**	**OU3-SB-13(14.5-15)**	**FB-01192012**	**TB-01192012**
Sample Date	**Residential**	**Restricted**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**	**1/19/2012**
Depth Interval		**Residential**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**14.5 - 15**	**14 - 14.5**	**14.5 - 15**		
Validation Status			**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Metals										
Aluminum	NS	NS	7470	8290	10500	4690	10700	7880	< 200	NA
Antimony	NS	NS	< 2.1	49.4	< 2.8	< 2	< 3.4	< 2.3	< 6	NA
Arsenic	16	16	3.9	**19.4**	2.9	2	< 3.4	< 2.3	< 3	NA
Barium	350	400	**519**	**3730**	74.9	79.5	44.5	58.2	< 200	NA
Beryllium	14	72	< 0.21	< 0.23	< 0.28	< 0.2	0.37	< 0.23	< 1	NA
Cadmium	2.5	4.3	< 0.53	2.3	< 0.69	< 0.51	< 0.84	< 0.58	< 3	NA
Calcium	NS	NS	1560	2040	6150	1550	3440	2480	< 5000	NA
Chromium	NS	NS	11.1	64.1	8.6	9.9	24.9	13.4	< 10	NA
Cobalt	NS	NS	< 5.3	< 5.8	9.8	< 5.1	< 8.4	< 5.8	< 50	NA
Copper	270	270	11.1	49.1	27.4	6	< 4.2	4.3	< 10	NA
Iron	NS	NS	13600	18300	21700	12500	6480	7310	< 100	NA
Lead	400	400	114	**2540**	74.2	33.3	5.6	6.8	< 3	NA
Magnesium	NS	NS	1910	2150	5360	1900	1360	1490	< 5000	NA
Manganese	2000	2000	253	364	369	221	63.3	79.8	< 15	NA
Mercury	0.81	0.81	< 0.036	0.072	0.054	< 0.034	< 0.052	< 0.038	< 0.2	NA
Nickel	140	310	9.6	25.9	11.7	8.3	6.8	6.4	< 10	NA
Potassium	NS	NS	< 1100	< 1200	< 1400	1150	< 1700	< 1200	< 10000	NA
Selenium	36	180	< 2.1	< 2.3	< 2.8	< 2	< 3.4	< 2.3	< 10	NA
Silver	36	180	< 0.53	1.3	< 0.69	< 0.51	< 0.84	< 0.58	< 10	NA
Sodium	NS	NS	< 1100	< 1200	< 1400	< 1000	< 1700	< 1200	< 10000	NA
Thallium	NS	NS	< 1.1	< 1.2	< 1.4	< 1	< 1.7	< 1.2	< 2	NA
Vanadium	NS	NS	15.1	19.4	49.6	14	16.5	14.6	< 50	NA
Zinc	2200	10000	47.4	531	72.4	29.8	19.6	20.4	< 20	NA
Other										
Cyanide	27	27	NA	< 0.29	NA	NA	NA	< 0.26	NA	NA
Solids, Percent	NS	NS	90	82	71.4	92.3	60.8	86	NA	NA

Results reported in milligrams per kilogram (mg/kg).
Field Blank and Trip Blank reported in micrograms per liter (ug/l).

NS	No standard
NA	Not analyzed
J	Estimated result
JN	Estimated result
Bold	Result exceeds 375-6.8(b) NYSDEC Soil Cleanup Objective- Residential Use.
Shade	Result exceeds 375-6.8(b) NYSDEC Soil Cleanup Objective- Restricted Residential Use.

Table 2. Summary of Waste Characterization Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

Sample ID Sample Date Validation Status	Units	375-6.8(b) Residential	375-6.8(b) Restricted Residential	OU3-WC-01 1/19/2012 Final
VOC				
1,1,1-Trichloroethane	mg/kg	100	100	< 0.00028
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	< 0.00021
1,1,2-Trichloroethane	mg/kg	NS	NS	< 0.0005
1,1-Dichloroethane	mg/kg	19	26	< 0.00025
1,1-Dichloroethene	mg/kg	100	100	< 0.00071
1,2,4-Trichlorobenzene	mg/kg	NS	NS	< 0.00039
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	< 0.0017
1,2-Dibromoethane	mg/kg	NS	NS	< 0.00027
1,2-Dichlorobenzene	mg/kg	100	100	< 0.00032
1,2-Dichloroethane	mg/kg	2.3	3.1	< 0.00021
1,2-Dichloropropane	mg/kg	NS	NS	< 0.00031
1,3-Dichlorobenzene	mg/kg	17	49	< 0.00022
1,4-Dichlorobenzene	mg/kg	9.8	13	< 0.0002
2-Butanone (MEK)	mg/kg	100	100	< 0.005
2-Hexanone	mg/kg	NS	NS	< 0.0029
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	< 0.003
Acetone	mg/kg	100	100	< 0.0076
Benzene	mg/kg	2.9	4.8	< 0.00015
Bromodichloromethane	mg/kg	NS	NS	< 0.00026
Bromoform	mg/kg	NS	NS	< 0.00087
Bromomethane	mg/kg	NS	NS	< 0.00045
Carbon disulfide	mg/kg	NS	NS	< 0.00023
Carbon tetrachloride	mg/kg	1.4	2.4	< 0.0004
Chlorobenzene	mg/kg	100	100	< 0.00037
Chloroethane	mg/kg	NS	NS	< 0.00047
Chloroform	mg/kg	10	49	< 0.00056
Chloromethane	mg/kg	NS	NS	< 0.00072
cis-1,2-Dichloroethene	mg/kg	59	100	< 0.00037
cis-1,3-Dichloropropene	mg/kg	NS	NS	< 0.00018
Cyclohexane	mg/kg	NS	NS	< 0.00044
Dibromochloromethane	mg/kg	NS	NS	< 0.00019
Dichlorodifluoromethane	mg/kg	NS	NS	< 0.00037
Ethylbenzene	mg/kg	30	41	< 0.00017
Freon 113	mg/kg	NS	NS	< 0.00083
Isopropylbenzene	mg/kg	NS	NS	< 0.00016
Methyl Acetate	mg/kg	NS	NS	< 0.0026
Methyl Tert Butyl Ether	mg/kg	62	100	< 0.00021
Methylcyclohexane	mg/kg	NS	NS	< 0.00028
Methylene chloride	mg/kg	51	100	< 0.00027
Styrene	mg/kg	NS	NS	< 0.00021
Tetrachloroethene	mg/kg	5.5	19	< 0.00022
Toluene	mg/kg	100	100	< 0.00044
trans-1,2-Dichloroethene	mg/kg	100	100	< 0.00049
trans-1,3-Dichloropropene	mg/kg	NS	NS	< 0.00039
Trichloroethene	mg/kg	10	21	< 0.00029
Trichlorofluoromethane	mg/kg	NS	NS	< 0.00056
Vinyl chloride	mg/kg	0.21	0.9	< 0.00053
Xylene (total)	mg/kg	100	100	< 0.00021
Total TIC, Volatile	mg/kg	NS	NS	0

Table 2. Summary of Waste Characterization Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

Sample ID Sample Date Validation Status	Units	375-6.8(b) Residential	375-6.8(b) Restricted Residential	OU3-WC-01 1/19/2012 Final
VOC - TCLP				
1,1-Dichloroethene	mg/l	100	100	< 0.0014
1,2-Dichloroethane	mg/l	2.3	3.1	< 0.0009
1,4-Dichlorobenzene	mg/l	9.8	13	< 0.0013
2-Butanone (MEK)	mg/l	100	100	< 0.015
Benzene	mg/l	2.9	4.8	< 0.0011
Carbon tetrachloride	mg/l	1.4	2.4	< 0.00097
Chlorobenzene	mg/l	100	100	< 0.0011
Chloroform	mg/l	10	49	< 0.001
Tetrachloroethene	mg/l	5.5	19	< 0.0016
Trichloroethene	mg/l	10	21	< 0.0011
Vinyl chloride	mg/l	0.21	0.9	< 0.0013
SVOC - TCLP				
1,4-Dichlorobenzene	mg/l	9.8	13	< 0.0036
2,4,5-Trichlorophenol	mg/l	NS	NS	< 0.016
2,4,6-Trichlorophenol	mg/l	NS	NS	< 0.013
2,4-Dinitrotoluene	mg/l	NS	NS	< 0.0043 J
2-Methylphenol	mg/l	100	100	< 0.01
3&4-Methylphenol	mg/l	NS	NS	< 0.0093
Hexachlorobenzene	mg/l	0.33	1.2	< 0.0034
Hexachlorobutadiene	mg/l	NS	NS	< 0.0051
Hexachloroethane	mg/l	NS	NS	< 0.0055
Nitrobenzene	mg/l	NS	NS	< 0.0042
Pentachlorophenol	mg/l	2.4	6.7	< 0.014
Pyridine	mg/l	NS	NS	< 0.0032
Pesticide/Herbicide - TCLP				
2,4,5-TP (Silvex)	mg/l	58	100	< 0.00018
2,4-D	mg/l	NS	NS	< 0.0013
Camphechlor	mg/l	NS	NS	< 0.0015
Chlordane	mg/l	NS	NS	< 0.0024
Endrin	mg/l	2.2	11	< 0.000064
gamma-BHC (Lindane)	mg/l	0.28	1.3	< 0.000041
Heptachlor	mg/l	0.42	2.1	< 0.000084
Heptachlor Epoxide	mg/l	NS	NS	< 0.000038
Methoxychlor	mg/l	NS	NS	< 0.000082
Metals - TCLP				
Arsenic	mg/l	16	16	< 0.5
Barium	mg/l	350	400	< 1
Cadmium	mg/l	2.5	4.3	< 0.005
Chromium	mg/l	NS	NS	< 0.01
Lead	mg/l	400	400	< 0.5
Mercury	mg/l	0.81	0.81	< 0.0002
Selenium	mg/l	36	180	< 0.5
Silver	mg/l	36	180	< 0.01
Other				
Corrosivity as pH	SU	NS	NS	7.74 J
Cyanide Reactivity	mg/kg	NS	NS	< 12
Ignitability (Flashpoint)	Deg. F	NS	NS	> 200
Sulfide Reactivity	mg/kg	NS	NS	< 120 J
Solids, Percent	%	NS	NS	86.6

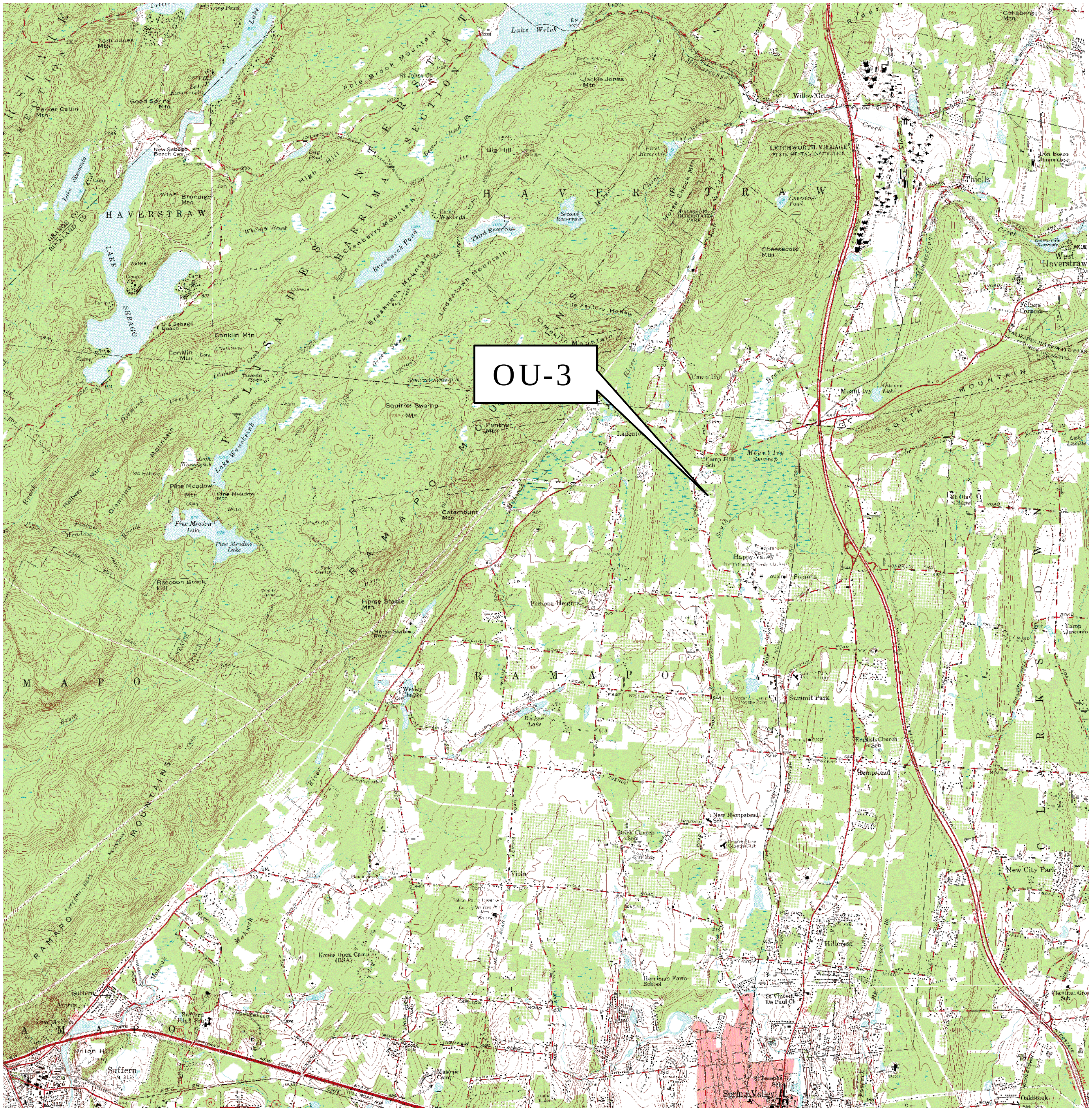
Table 2. Summary of Waste Characterization Analytical Results

Supplemental Remedial Investigation Report Operable Unit 3, Ramapo Paint Sludge Site, Operable Unit 3, Rockland County, New York

Sample ID Sample Date Validation Status	Units	375-6.8(b) Residential	375-6.8(b) Restricted Residential	OU3-WC-01 1/19/2012 Final

Results reported in milligrams per kilogram (mg/kg) unless otherwise noted in table above.

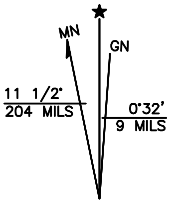
NS	No standard
J	Estimated result
Bold	Result exceeds 375-6.8(b) NYSDEC Soil Cleanup Objective- Residential Use.
Shade	Result exceeds 375-6.8(b) NYSDEC Soil Cleanup Objective- RestrictedResidential Use.



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION

SOURCE: USGS 7.5 MIN. SLOATSBURG QUADRANGLE, SLOATSBURG, NY–NJ. 1952, PARK RIDGE QUADRANGLE, PARK RIDGE, NJ–NY, 1955, RAMSEY QUADRANGLE, RAMSEY, NJ–NY, 1955, THIELS QUADRANGLE, THIELS, NJ–NY, 1955



UTM GRID AND 1955 MAGNETIC NORTH

0 6000
SCALE IN FEET

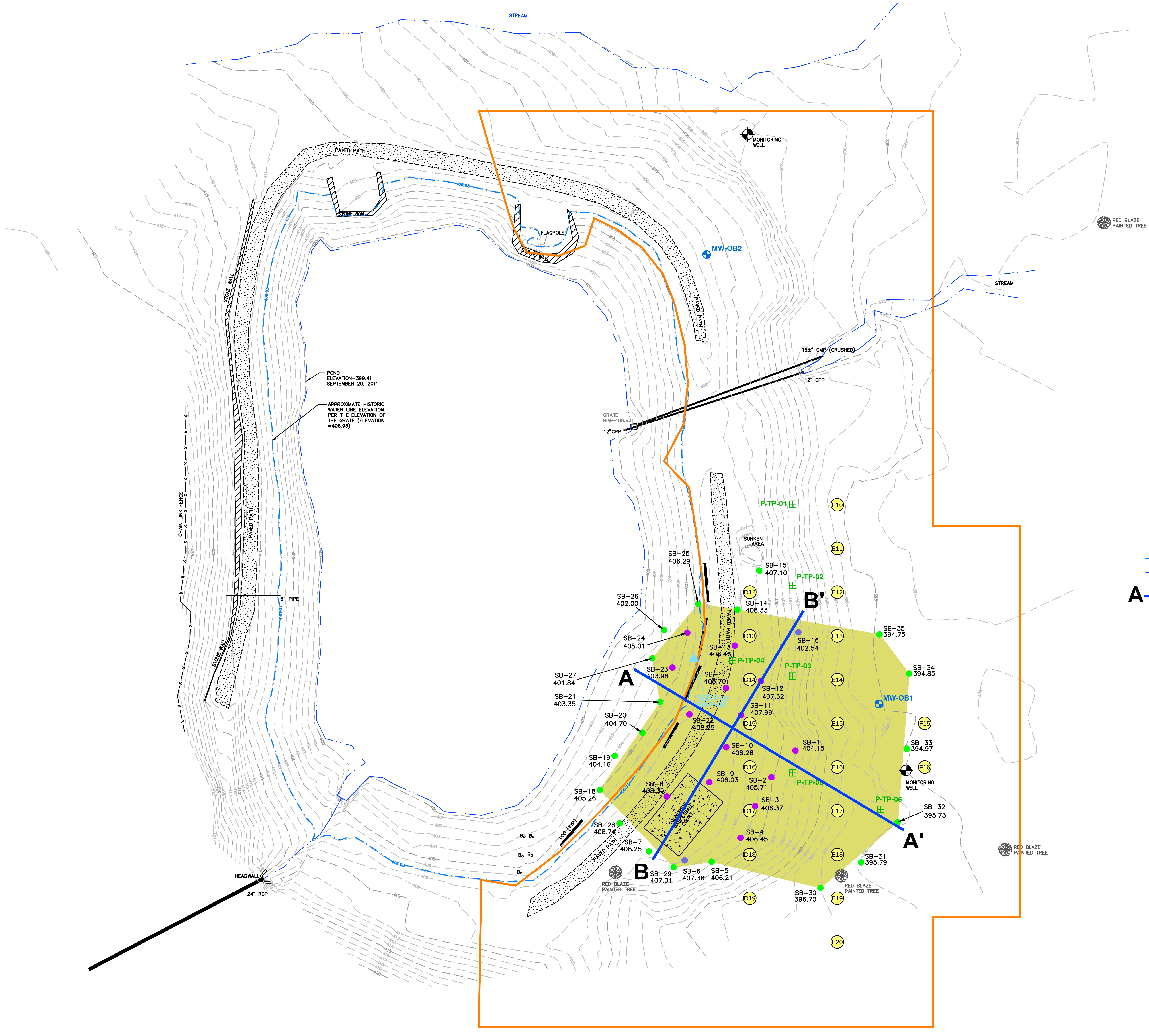
RAMAPO PAINT SLUDGE SITE
ROCKLAND COUNTY, NEW YORK
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT 3

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY:MAHWAH DIV/GROUP:ENVCAD DB:JG LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACT\NJ000602\0003\00006\2012-02\OU-3_SUPPMTL RIRFIG 1-Site Location_OU3.dwg LAYOUT: 1 SAVED: 3/21/2012 11:41 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/21/2012 11:45 AM BY: GONZALEZ, JAMES
IMAGES: PROJECTNAME: ---



LEGEND

- LIMITS OF RECONNAISSANCE SURVEY
- D19 SURVEY NODE WHERE PAINT SLUDGE WAS OBSERVED, MAY 2006
- WELL LOCATION
- TEST PIT LOCATION
- P-TP-01 - TEST PIT SAMPLE ID
- NO PAINT SLUDGE OBSERVED, JANUARY - FEBRUARY 2011
- CONTINUOUS FLOW OF PAINT SLUDGE WAS OBSERVED, JANUARY - FEBRUARY 2011
- PAINT SLUDGE (SMALL PIECES OR COBBLE SIZED CHUNKS) WAS OBSERVED, JANUARY - FEBRUARY 2011
- EXTENT OF PAINT SLUDGE LIMIT
- STONE WALL
- PAVED PATH
- CONCRETE BASKETBALL AREA
- B_o BOLLARD
- BIO-LOG
- HISTORIC WATER ELEVATION
- POND ELEVATON
- A—A' CROSS SECTION TRANSECT LINE

NOTES:

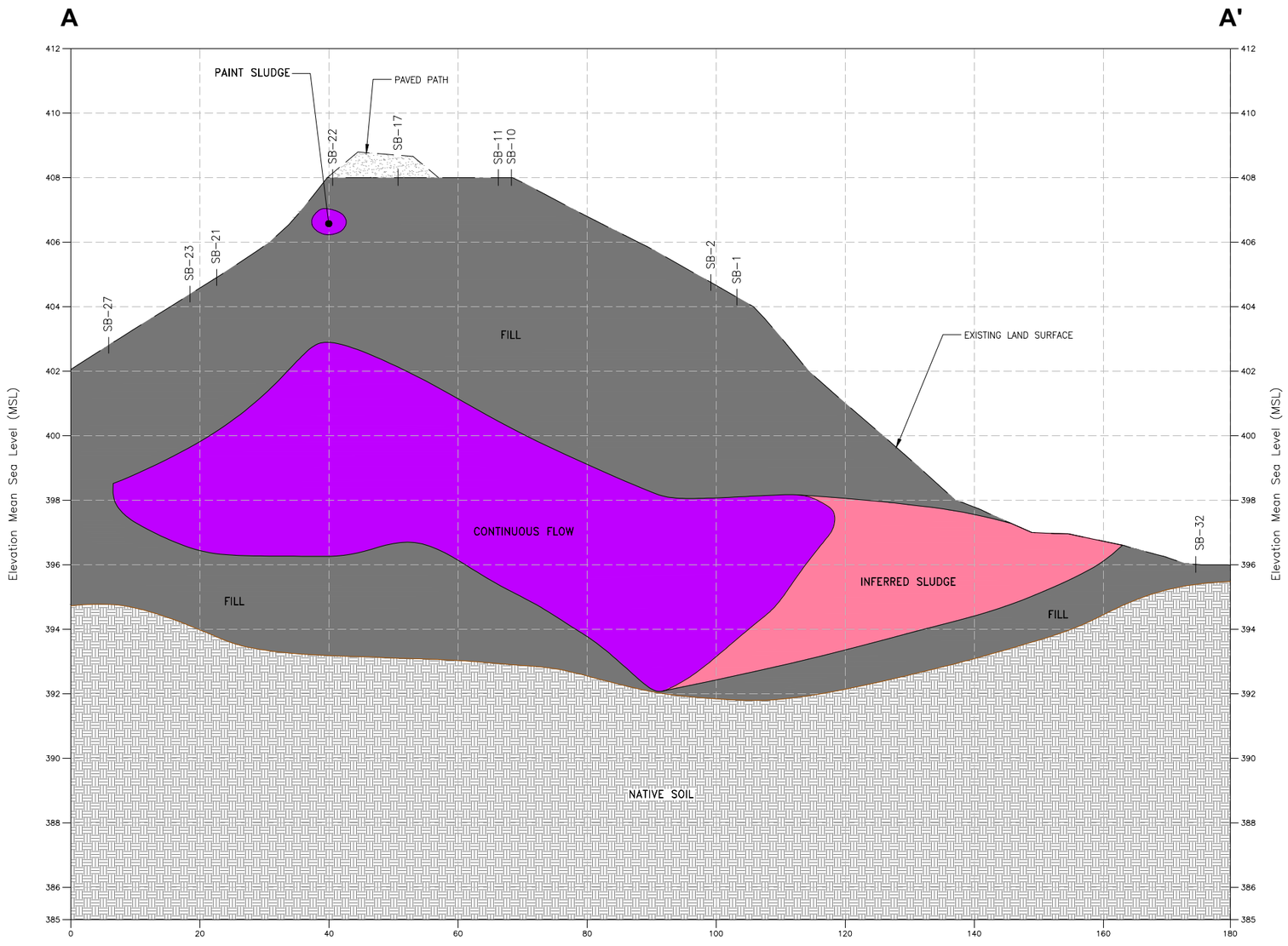
1. BASIS OF BEARING IS THE NEW YORK EAST STATE PLANE COORDINATE SYSTEM NAD 83, DETERMINED BY DIFFERENTIAL GPS ON SEPTEMBER 29, 2011 USING THE NGS COR SYSTEM. REFERENCE STATION NYNR.
2. VERTICAL DATUM IS NAVD88 DETERMINED BY DIFFERENTIAL GPS ON SEPTEMBER 29, 2011 USING THE NGS COR SYSTEM. BENCHMARK NYNR (ORTHOMETRIC HEIGHT=93.9212).
3. "EDUCATION LAW ARTICLE 145 SECTION 7209:2 IT IS A VIOLATION OF EDUCATION LAW ARTICLE 145 SECTION 7209:2 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY."
4. THE HISTORIC WATER LEVEL SHOWN IS BASED ON THE ASSUMPTION THAT THE ELEVATION OF THE GRATED STRUCTURE WITHIN THE BASIN WAS THE FORMER WATER LEVEL.

RAMAPO PAINT SLUDGE SITE
ROCKLAND COUNTY, NEW YORK
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT 3

REMEDIAL INVESTIGATION SAMPLE LOCATIONS FOR OU-3

ARCADIS

FIGURE
2



LEGEND

- FILL
- PAINT SLUDGE/ CONTINUOUS FLOW
- INFERRED PAINT SLUDGE/ CONTINUOUS FLOW
- NATIVE SOIL
- PAVED PATH
- EXISTING LAND SURFACE

CROSS-SECTION A-A'

0 10' 20'
HORIZONTAL GRAPHIC SCALE

0 2' 4'
VERTICAL GRAPHIC SCALE

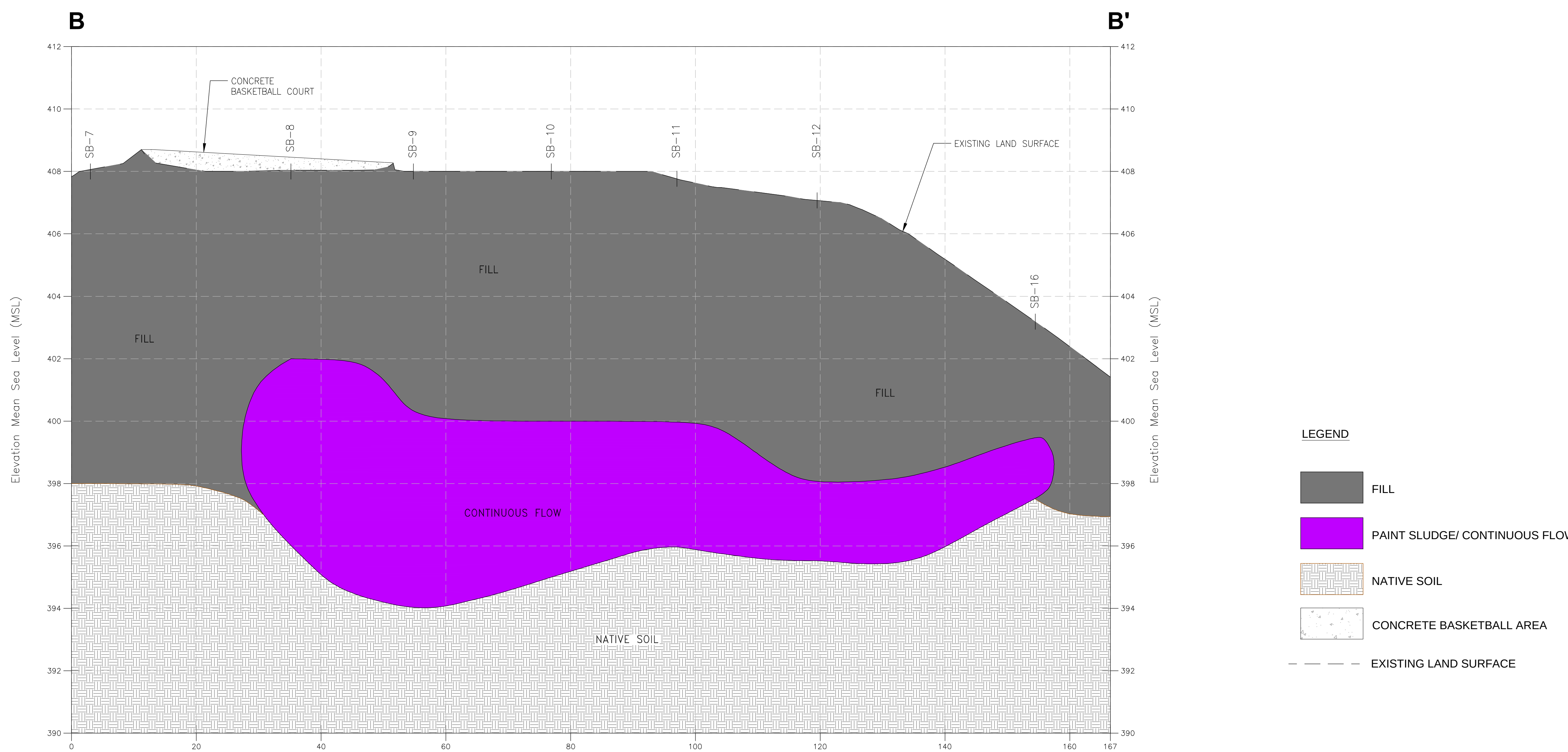
RAMAPO PAINT SLUDGE SITE
ROCKLAND COUNTY, NEW YORK
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT 3

CROSS SECTION A-A'

ARCADIS

FIGURE
3

CITY:MAHWAH DIV/GROUP:ENVCAD DB:JG S.BELL LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACTIVE\60060200\3000062012-02\OU-3_SUPPMTL RI\RI\FIG 3-4-Cross Sections.dwg LAYOUT: 3 SAVED: 3/21/2012 11:43 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTHALF_MHWH.CTB PLOTTED: 3/21/2012 11:44 AM BY: GONZALEZ, JAMES
XREFS: IMAGES:
60203_OU3XRefs-SRI Cross-Sections_OU3_Page_1.jpg
Figure 4&5-SRI Cross-Sections_OU3_Page_2.jpg



CROSS-SECTION B-B'

0 10' 20'
HORIZONTAL GRAPHIC SCALE

0 2' 4'
VERTICAL GRAPHIC SCALE

RAMAPO PAINT SLUDGE SITE
ROCKLAND COUNTY, NEW YORK
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT 3

CROSS SECTION B-B'

ARCADIS

FIGURE
4

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-01 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1020 | Drilling Completed: 1/18/2012 1045

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	0.0	0-0.5 Organics
			0.0	0.5-5.0 Silty-sand, brown, dry to moist
5.0	10.0	4.0	3.4	5.0-6.0 Silty-sand, little clay, brown, moist
			35.4	6.0-8.0 Reddish-blue paint sludge
			29.7	8.0-10.0 Silty-clay, gray, moist
10.0	15.0	4.0	50.0	10.0-11.0 Silty-clay, gray, moist
			25.0	11.0-12.0 Reddish-blue paint sludge
				12.0-15.0 Silty-clay, gray, moist
				End boring at 15' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-02 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1045 | Drilling Completed: 1/18/2012 1100

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	0.0	0-0.5 Organics
			0.3	0.5-4.0 Silty-sand, little clay, brown, moist to wet
			0.6	4.0-5.0 Silty-sand, little clay, gray, moist
			0.0	
5.0	10.0	2.5	0.8	5.0-6.0 Silty-sand, little clay, gray, moist to wet
			41.7	6.0-10.0 Reddish-blue paint sludge with debris (i.e. wood)
			25.4	
			21.7	
			22.8	
10.0	15.0	2.0	4.7	10.0-12.0 Silty-sand, some cobbles, brown-gray, wet
			2.4	12.0-15.0 Silty-clay, gray, moist
			2.2	
			1.8	End boring at 15' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-03 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1100 | Drilling Completed: 1/18/2012 1130

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.5	2.7	0.0-0.5 Organics
			2.7	0.5-5.0 Silty-sand, some cobbles, little organics, brown, moist
			1.4	
			1.7	
			1.0	
5.0	10.0	5.0	0.0	5.0-7.0 Silty-sand, little clay, brown, moist
			0.2	7.0-10.0 Reddish-blue paint sludge
			4.0	
			132.0	
			49.7	
			72.1	
			91.2	
			26.7	
			31.2	
			2.7	
10.0	15.0	4.0	28.2	10.0-13.0 Red paint sludge
			55.0	13.0-15.0 Silty-clay, gray, wet to moist
			10.0	
			5.0	End boring at 15' below ground surface
			4.2	
			7.0	
			6.0	
			1.4	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-04 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1130 | Drilling Completed: 1/18/2012 1200

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	0.5		0.0-0.5 Organics
				0.5-5.0 Silty-sand, some cobbles, brown, moist
				No Recovery due to obstruction in shoe (i.e. Rock)
5.0	10.0	3.5	5.8	5.0-6.0 Silty-sand, little clay, brown, moist
			6.2	6.0-10.0 Bluish-red paint sludge
			27.2	
			43.7	
			81.5	
			130.0	
			50.7	
10.0	15.0	4.5	2.8	10.0-13.0 Red paint sludge with debris (i.e. copper wire)
			14.7	13.0-15.0 Silty-clay, gray, wet to moist
			32.7	
			120.7	End boring at 15' below ground surface
			28.4	
			9.0	
			7.0	
			7.0	
			5.7	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-05 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1200 | Drilling Completed: 1/18/2012 1245

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	1.5	4.7	0.0-0.5 Organics
			3.2	0.5-5.0 Silty-sand, little clay, brown, moist
			0.0	
5.0	10.0	1.0	3.2	5.0-10.0 Silty-sand, some clay, brown to gray, moist
			6.7	
10.0	15.0	4.0	3.9	10.0-13.0 Silty-clay, gray moist
			3.9	13.0-15.0 Silty-sand, brown, wet to moist
			2.2	
			2.0	End boring at 15' below ground surface
			2.9	
			2.0	
			1.0	
			0.2	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-06 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1345 | Drilling Completed: 1/18/2012 1410

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.0	0.0-0.5 Organics
			0.2	0.5-4.5 Silty-sand, some clay, brown, moist
			0.1	4.5-5.0 Red-paint sludge
			0.0	
			0.0	
			0.0	
5.0	10.0	3.0	0.0	5.0-10.0 Silty-sand, some cobbles, little clay, brown to gray, moist
			0.1	
			0.5	
			0.6	
			0.1	
			0.1	
10.0	15.0	4.0	0.0	10.0-12.0 Silty-clay, gray, moist
			2.3	12.0-15.0 Silty-sand, brown, moist
			1.7	
			2.3	End boring at 15' below ground surface
			0.2	
			2.4	
			1.7	
			0.0	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-07 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1410 | Drilling Completed: 1/18/2012 1440

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.0	0.0-0.5 Organics
			0.6	0.5-5.0 Silty-sand, some clay and cobbles, brown to gray, moist
			0.4	
			0.0	
			0.1	
			1.0	
5.0	10.0	2.0	0.0	5.0-10.0 Silty-clay with debris (i.e. wood chips), gray, moist to wet
			0.5	
			1.3	
			0.3	
10.0	15.0	0.0		No Recovery
				End boring at 15' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-08 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1440 | Drilling Completed: 1/18/2012 1500

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.5	0.0	0.0-0.5 Organics
			0.4	0.5-4.0 Silty-sand, some cobbles, brown, moist
			0.2	4.0-5.0 Silty-clay with debris (i.e. wood chips), gray, moist
			0.4	
			1.6	
			2.0	
			1.4	
5.0	10.0	2.0	12.2	5.0-6.0 Silty-clay, gray, moist
			15.6	6.0-10.0 Red-paint sludge with organics
			24.9	
			7.7	
10.0	15.0	2.0	1.0	10.0-12.0 Red-paint sludge with debris (i.e. metal chips)
			3.2	12.0-15.0 Silty-clay, gray to brown, wet to moist
			0.2	
			0.0	End boring at 15' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-09 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1500 | Drilling Completed: 1/18/2012 1520

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.2	0.0-0.5 Organics
			1.4	0.5-5.0 Silty-sand, little clay, brown to gray, moist
			0.6	
			1.9	
			0.2	
			2.1	
5.0	10.0	4.0	0.3	5.0-8.0 Silty-sand, little clay, gray, moist
			0.9	8.0-10.0 Reddish-blue paint sludge
			0.9	
			2.5	
			2.2	
			30.5	
			26.6	
			28.0	
10.0	15.0	5.0	101.0	10.0-14.0 Reddish-blue paint sludge
			223.0	14.0-15.0 Silty-sand, some clay, gray, moist to wet
			152.0	
			380.0	End boring at 15' below ground surface
			85.5	Sample collected at OU3-SB-09 (0.0-0.5)
			65.4	Sample collected at OU3-SB-09 (14.5-15.0) at 0.5' below paint sludge
			8.8	
			3.8	
			7.4	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-10 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/18/2012 1520 | Drilling Completed: 1/18/2012 1540

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0		0.0-0.5 Organics
				0.5-5.0 Silty-sand, little cobbles, brown to gray, moist
5.0	10.0	3.0		5.0-8.0 Silty-sand, some clay, gray, moist
				8.0-10.0 Reddish-blue paint sludge
10.0	15.0	4.0		10.0-13.0 Reddish-blue paint sludge
				13.0-15.0 Silty-sand, some clay, gray to brown, moist
				End boring at 15' below ground surface
				Sample collected at OU3-SB-10 (14.0-14.5) at 1' below paint sludge

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-11 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1540 | Drilling Completed: 1/18/2012 1600

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.4	0.0-0.5 Organics
			0.7	0.5-5.0 Silty-sand, little cobbles, brown, moist
			0.5	
			0.9	
			0.3	
			0.5	
5.0	10.0	3.5	0.2	5.0-8.0 Silty-sand, some clay, brown, moist
			2.3	8.0-10.0 Reddish-blue paint sludge
			8.7	
			27.2	
			288.0	
			48.7	
			32.2	
10.0	15.0	3.5	0.5	10.0-12.0 Red paint sludge
			0.5	12.0-15.0 Silty-clay, brown to gray, moist
			280.0	
			68.1	End boring at 15' below ground surface
			57.2	
			7.2	
			5.6	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-12 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/18/2012 1600 | Drilling Completed: 1/18/2012 1615

Total Depth Drilled: 12 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	0.7	0.0-0.5 Organics
			2.1	0.5-5.0 Silty-sand, some clay, brown, moist
			2.5	
			2.4	
5.0	10.0	2.5	0.5	5.0-8.0 Silty-sand, some clay, brown, moist to wet
			1.6	8.0-9.5 Silty-clay, gray, wet
			4.4	9.5-10.0 Red-paint sludge
			7.6	
10.0	12.0	15.0	2.7	10.0-11.0 Silty-clay, gray, wet
			2.9	11.0-12.0 Red-paint sludge
			2.5	
				Refusal at 12' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-13 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/19/2012 0900 | Drilling Completed: 1/19/2012 0940

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	2.0	0.0-0.5 Organics
			2.3	0.5-5.0 Silty-sand, some cobbles, little clay, brown, moist
			2.5	
			2.6	
			2.7	
5.0	10.0	4.0	3.0	5.0-9.0 Silty-sand, some cobbles, little clay, brown, moist
			3.9	9.0-10.0 Silty-clay, little cobbles, gray, moist to wet
			4.2	
			3.5	
			3.3	
			3.4	
			3.6	
			3.5	
10.0	15.0	3.0	6.9	10.0-12.0 Silty-clay, little cobbles, gray, moist to wet
			3.2	12.0-14.0 Reddish-blue paint sludge
			29.6	14.0-15.0 Silty-clay, gray, moist
			263.0	
			79.0	End boring at 15' below ground surface
			9.6	Sample collected at OU3-SB-13 (14.5-15.0) at 0.75' below paint sludge

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-14 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/19/2012 0940 | Drilling Completed: 1/19/2012 1000

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	5.6	0.0-0.5 Organics
			3.9	0.5-4.5 Silty-sand, some cobbles, brown, moist
			6.2	4.5-5.0 Silty-sand, little clay, gray, moist
			4.5	
			5.6	
5.0	10.0	3.0	4.1	5.0-10.0 Silty-sand, little clay, gray, moist
			4.0	
			4.3	
			5.1	
			4.6	
			4.8	
10.0	15.0	4.0	3.5	10.0-15.0 Silty-sand, little clay, gray, wet to moist
			3.5	
			3.7	End boring at 15' below ground surface
			1.5	
			2.7	
			3.5	
			2.7	
			2.7	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-15 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/19/2012 1000 | Drilling Completed: 1/19/2012 1010

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	1.8	0.0-0.5 Organics
			3.3	0.5-5.0 Silty-sand, some cobbles, brown, moist
			2.9	
			3.8	
			4.1	
			5.0	
			4.1	
			3.6	
5.0	10.0	3.0	1.9	5.0-10.0 Silty-sand, little to some clay, brown to gray, moist to wet
			3.1	
			3.6	
			2.6	
			3.2	
			3.0	
10.0	15.0	4.5	2.7	10.0-15.0 Silty-clay, gray to brown, wet to moist
			3.5	
			4.0	End boring at 15' below ground surface
			4.1	
			4.2	
			4.3	
			4.0	
			3.6	
			4.1	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-16 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/19/2012 1010 | Drilling Completed: 1/19/2012 1050

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	2.8	0.0-0.5 Organics
			2.8	0.5-3.0 Silty-sand, some cobbles, brown, moist
			29.2	3.0-4.0 Red paint sludge with debris (i.e foam cushion)
			2.1	4.0-5.0 Silty-clay, gray, moist to wet
			2.0	
5.0	10.0	1.0	3.9	5.0-10.0 Silty-clay, gray, wet to moist
			4.8	
10.0	15.0	4.0	5.0	10.0-13.0 Silty-clay, gray, moist
			2.2	13.0-15.0 Silty-sand, some clay, brown, moist
			2.3	
			3.3	End boring at 15' below ground surface
			1.9	Sample collected at OU3-SB-16 (0.0-0.5)
			3.6	
			3.0	
			4.0	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-17 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/19/2012 1050 | Drilling Completed: 1/19/2012 1105

Total Depth Drilled: 12 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	2.0	0.0-0.5 Organics
			1.8	0.5-5.0 Silty-sand, some clay, little cobbles, brown to gray, moist
			1.9	
			3.1	
			2.5	
			4.0	
			3.9	
			3.2	
5.0	10.0	3.0	3.9	5.0-9.0 Silty-sand, some clay, little cobbles, gray, moist
			4.1	9.0-10.0 Silty-clay, gray, moist to wet
			4.2	
			4.1	
			4.2	
			24.3	
10.0	15.0	2.0	45.9	10.0-11.0 Silty-clay, gray, wet to moist
			144.0	11.0-12.0 Red paint sludge
			45.2	
			50.0	Refusal at 12' below ground surface.
				Sample collected at OU3-SB-17 (0.0-0.5)

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-18 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/19/2012 1345 | Drilling Completed: 1/19/2012 1400

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	1.7	0.0-0.5 Organics
			2.7	0.5-3.0 Silty-sand, brown, wet
			2.9	3.0-5.0 Silty-sand, some clay, brown, moist
			2.9	
			3.4	
			3.2	
5.0	10.0	0.0		5.0-10.0 No Recovery; Silty-clay, brown to gray, wet
10.0	15.0	5.0	4.1	10.0-15.0 Silty-clay, brown to gray to brown, wet to moist
			4.7	
			4.7	End boring at 15' below ground surface
			4.7	
			5.0	
			4.5	
			3.8	
			4.1	
			4.6	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-19 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/19/2012 1400 | Drilling Completed: 1/19/2012 1445

Total Depth Drilled: 4 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	4.0	3.0	0.2	0.0-0.5 Organics
			1.4	0.5-2.0 Silty-sand, brown, moist
			1.3	2.0-4.0 Silty-sand,some clay, gray, moist
			2.2	
			1.7	Refusal at 4' below ground surface
			1.8	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-20 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 1/19/2012 1445 | Drilling Completed: 1/19/2012 1515

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	2.0	0.0-0.5 Organics
			2.2	0.5-5.0 Silty-sand, some cobbles, little clay, brown to gray, moist
			2.4	
			2.4	
5.0	10.0	3.0	2.3	5.0-7.0 Silty-sand, some cobbles, little clay, gray, moist
			2.7	7.0-10. Silty-clay, brown, wet
			2.7	
			2.3	
			2.2	
			1.6	
10.0	15.0	5.0	1.4	10.0-15.0 Sitly-clay, brown, wet to moist
			1.7	
			1.2	End boring at 15.0' below ground surface
			1.5	
			1.0	
			1.3	
			1.5	
			1.5	
			1.2	
			1.0	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-21 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/19/2012 1515 | Drilling Completed: 1/19/2012 1530

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	3.9	0.0-0.5 Organics
			1.3	0.5-5.0 Silty-sand, little clay, brown to gray, moist to wet to moist
			2.1	
			2.3	
5.0	10.0	4.0	2.4	5.0-8.0 Silty-sand, little clay, gray, moist
			2.5	8.0-10.0 Silty-clay, gray to brown, moist
				End boring at 10' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-22 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 1/19/2012 1530 | Drilling Completed: 1/19/2012 1545

Total Depth Drilled: 12 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: James | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.6	0.0-0.5 Organics
			4.8	0.5-1.0 Silty-sand, brown, moist
			2.7	1.0-1.5 Reddish-blue paint sludge
			2.4	1.5-5.0 Silty-sand, some clay, gray, moist
			2.5	
			2.5	
5.0	10.0	3.0	45.0	5.0-10.0 Reddish-blue paint sludge
			219.0	
			230.0	
			380.0	
			113.0	
			90.7	
10.0	12.0	3.0		10.0-12.0 Reddish-blue paint sludge
				Refusal at 12' below ground surface

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-23 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 0945 | Drilling Completed: 2/2/2012 1000

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	0.2	0.0-0.5 Organics
			1.4	0.5-3.0 Sitly-sand, little cobbles, brown, moist
			2.7	3.0-5.0 Reddish-blue paint sludge
			2.5	
			61.2	
5.0	10.0	3.5	4.6	5.0-7.0 Silty-sand, some clay, gray, moist to wet
			9.1	7.0-10.0 Silty-clay, gray, wet to moist
			2.2	
			2.9	
			2.3	
			1.3	
10.0	15.0	4.0	1.3	10.0-15.0 Silty-clay, gray to brown, moist to wet to moist
			0.6	
			2.7	End boring at 15' below ground surface
			4.2	
			3.7	
			1.6	
			2.8	
			1.2	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-24 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1000 | Drilling Completed: 2/2/2012 1015

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	1.7	0.0-0.5 Organics
			1.7	0.5-5.0 Silty-sand, little clay, brown, moist
			1.5	
			1.2	
5.0	10.0	3.0	1.7	5.0-7.0 Silty-sand, little clay, brown, moist
			6.3	7.0-8.0 Reddish-blue paint sludge with debris (i.e. concrete)
			16.9	8.0-10.0 Silty-sand, little clay, brown, moist
			58.3	
			1.4	
			1.2	
10.0	15.0	4.0	1.2	10.0-11.0 Silty-sand, little clay, brown, moist
			1.6	11.0-15.0 Silty-clay, gray to brown, wet to moist
			2.7	
			1.8	End boring at 15' below ground surface
			1.3	
			3.6	
			1.2	
			1.8	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-25 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 2/2/2012 1015 | Drilling Completed: 2/2/2012 1040

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	1.7	0.0-0.5 Organics
			1.3	0.5-5.0 Silty-sand, some cobbles, brown, moist to wet
			1.7	
			2.4	
			2.3	
			2.7	
			2.4	
			2.3	
5.0	10.0	1.5	1.2	5.0-10.0 Silty-sand, some clay, brown to gray, wet
			1.8	
			2.4	
10.0	15.0	2.5	2.8	10.0-12.0 Silty-sand, some clay, gray to brown, wet to moist
			2.9	12.0-15.0 Silty-sand, brown, moist
			2.5	
			2.6	End boring at 15' below ground surface
			2.6	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-26 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1040 | Drilling Completed: 2/2/2012 1050

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	1.5	0.0-0.5 Organics
			1.9	0.5-5.0 Silty-sand, some clay, little organics, brown to gray, moist to wet to moist
			1.9	
			2.0	
			1.9	
			1.9	
			2.2	
			2.2	
5.0	10.0	4.0	1.2	5.0-10.0 Silty-sand, some clay, little organics, brown to gray to brown, moist to wet
			1.3	
			1.8	End boring at 10' below ground surface
			2.1	
			2.1	
			2.2	
			2.1	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-27 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 2/2/2012 1050 | Drilling Completed: 2/2/2012 1110

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	1.5	0.0-0.5 Organics
			2.6	0.5-2.0 Silty-sand, brown, moist
			2.6	2.0-3.0 Debris (i.e concrete) , red-white, dry
			2.6	3.0-5.0 Silty-sand, little clay, brown to gray, moist
			1.6	
			2.3	
			2.6	
			2.7	
5.0	10.0	4.0	2.6	5.0-7.0 Silty-sand, little clay, gray, moist to wet
			2.7	7.0-10.0 Silty-sand, some cobbles, brown, wet
			2.6	
			2.6	End boring at 10' below ground surface
			2.6	
			2.3	
			2.5	
			2.6	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-28 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 2/2/2012 1130 | Drilling Completed: 2/2/2012 1150

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	4.0	0.2	0.0-0.5 Organics
			0.3	0.5-5.0 Silty-sand, some cobbles, brown to gray, moist
			0.5	
			0.7	
			0.4	
			0.5	
			0.3	
			0.2	
5.0	10.0	3.0	2.6	5.0-10. Silty-sand, some cobbles, gray, moist to wet
			2.1	
			2.0	
			2.1	
			2.0	
			1.6	
10.0	15.0	3.0	1.3	10.0-15.0 Silty-sand, brown, wet
			1.9	
			2.0	End boring at 15' below ground surface
			2.0	
			1.9	
			1.6	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-29 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 2/2/2012 1150 | Drilling Completed: 2/2/2012 1215

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	0.0	0.0-0.5 Organics
			0.6	0.5-5.0 Silty-sand, some to little cobbles, brown to gray, moist
			0.8	
			0.8	
			0.9	
5.0	10.0	3.0	0.0	5-5.5 Debris (i.e. tree root)
			0.8	5.5-9.5 Silty-clay, gray, moist to wet to moist
			0.9	9.5-10.0 Silty-sand, brown, moist
			0.9	
			1.1	
			1.1	
			1.0	
10.0	15.0	2.0	0.0	10.0-15.0 Silty-sand, brown, moist
			0.6	
			1.0	End boring at 15' below ground surface
			0.1	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-30 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1230 | Drilling Completed: 2/2/2012 1250

Total Depth Drilled: 15 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	0.6	0.0-0.5 Organics
			0.7	0.5-5.0 Silty-sand, gray to brown, moist
			0.9	
			0.6	
			0.4	
5.0	10.0	3.0	1.6	5.0-10.0 Silty-sand, brown, moist to wet
			1.9	
			1.9	
			1.6	
			1.8	
			1.6	
10.0	15.0	2.0	1.7	10.0-15.0 Silty-sand, brown, wet to moist
			1.8	
			1.1	End boring at 15' below ground surface
			0.9	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-31 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1255 | Drilling Completed: 2/2/2012 1310

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: _____ feet | [x] Surveyed | [ ] Estimated | Datum: _____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	1.4	0.0-0.5 Organics
			1.6	0.5-5.0 Silty-sand, little clay, brown, moist
			1.8	
			1.9	
			2.0	
5.0	10.0	3.0	1.5	5.0-10.0 Silty-sand, little clay, brown, moist to wet
			1.6	
			1.8	End boring at 10' below ground surface
			1.8	
			2.0	
			1.5	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-32 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY | Drilling Started: 2/2/2012 1310 | Drilling Completed: 2/2/2012 1325

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	3.0	0.5	0.0-0.5 Organics
			1.3	0.5-5.0 Silty-sand, little cobbles, gray to brown, moist
			1.2	
			1.4	
			1.5	
5.0	10.0	4.0	0.5	5.0-10.0 Silty-sand, brown, wet to moist
			1.1	
			0.7	End boring at 10' below ground surface
			0.9	
			1.4	
			1.5	
			1.6	
			1.3	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-33 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1325 | Drilling Completed: 2/2/2012 1340

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	1.1	0.0-0.5 Organics
			1.1	0.5-5.0 Silty-sand, some clay, gray, moist
			1.5	
			1.5	
			1.4	
5.0	10.0	3.0	1.2	5.0-7.0 Silty-sand, some clay, gray, moist
			1.3	7.0-10.0 Silty-sand, brown, moist to wet
			1.7	
			1.7	End boring at 10' below ground surface
			1.7	
			1.3	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-34 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1340 | Drilling Completed: 2/2/2012 1355

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.0	0.0	0.0-0.5 Organics
			4.5	0.5-2.0 Silty-sand, some cobbles, gray, moist
			1.1	2.0-4.5 Silty-sand, little clay, gray, moist
			1.0	4.5-5 Silty-sand, some cobbles, gray, moist
5.0	10.0	3.5	0.4	5.0-8.0 Silty-sand, some clay, gray, wet to moist
			0.6	8.0-10.0 Silty-sand, brown, moist
			0.6	
			1.3	End boring at 10' below ground surface
			1.1	
			1.4	
			1.0	

ARCADIS

Sample/Core Log-DRAFT

Boring/Well: SB-35 | Project/No.: Ford Ramapo OU-3/ NJ000602.0003 | Page: 1 of 1

Site Location: Pomona, NY

Drilling Started: 2/2/2012 1405 | Drilling Completed: 2/2/2012 1415

Total Depth Drilled: 10 Feet | Hole Diameter: 2 inches | Type of Sample/ Coring Device: Acetate Liner/Macrocore

Length and Diameter of Coring Device: 5 Feet x 2 inches | Sampling Interval: NA feet

Land-Surface Elev.: ____ feet | [x] Surveyed | [ ] Estimated | Datum: ____

Drilling Fluid Used: NA | Drilling Method: Geoprobe

Drilling Contractor: Summit | Driller: Ronnie | Helper: Roger

Prepared By: Krista Mastrocola | Hammer Weight: NA | Hammer Drop: NA ins.

Sample Depth (feet below land surface) From	To	Core Recovery (feet)	PID Reading with depth interval (ppm)	Sample/Core Description
0.0	5.0	2.5	0.1	0.0-0.5 Organics
			1.3	0.5-5.0 Silty-sand, some cobbles, gray to brown, moist
			0.6	
			0.7	
			0.3	
5.0	10.0	4.0	1.4	5.0-10.0 Silty-sand, some clay, brown, wet to moist
			1.4	
			0.8	End boring at 10' below ground surface
			0.8	
			1.2	
			1.3	
			1.0	
			1.0	

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Ford Ramapo

Data Usability Summary Report

RAMAPO, NEW YORK

Volatile, Semi-volatiles, Herbicides, Pesticides, PCB, Metals, General Chemistry and TCLP (VOCs, SVOCs, Pesticide, Herbicide and Metals) Analyses

SDG #JA97463

Analyses Performed By:
Accutest Laboratories
Dayton, New Jersey

Report #15608R
Review Level: Tier III
Project: NJ000602.0003.00006

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #JA97463 for samples collected in association with the Ford Ramapo Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis						
					VOC	SVOC	Pest	Herb	PCB	MET	MISC
TB-011920212	JA97463-1	WATER	1/19/12		X						
FB-01192012	JA97463-2	WATER	1/19/12		X					X	
OU3-WC-01	JA97463-3	SOIL	1/19/12		X	X	X	X		X	X
OU3-SB-09(0-0.5)	JA97463-4	SOIL	1/19/12		X					X	
OU3-SB-09(14.5-15)	JA97463-5	SOIL	1/19/12		X					X	
OU3-SB-10(14-14.5)	JA97463-6	SOIL	1/19/12		X					X	
OU3-SB-17(0-0.5)	JA97463-7	SOIL	1/19/12		X					X	
OU3-SB-16(0-0.5)	JA97463-8	SOIL	1/19/12		X	X		X	X	X	X
OU3-SB-13(14.5-15	JA97463-9	SOIL	1/19/12		X	X		X	X	X	X

MISC - Miscellaneous parameters: Corrosivity, Cyanide, Ignitability, and/or Sulfide.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, Method 1311 (Toxic Characteristic Leachate Procedure-TCLP)/8260B, 8270D, 1311/8270D, 1311/8151, 8081B, 1311/8081B and 8082A. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Soil	14 days from extraction to analysis	Cool to 4°C±2°C.
SW-846 1311/8260B	Soil/Leachate	14 days from collection to leachate and 14 days from leachate to analysis	Cooled @ 4 °C; preserved to a pH of less than 2 s.u.

s.u. Standard units

The sample was analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TB-01192012 FB-01192012	CCV %D	Bromomethane	+20.3%
		Freon 113	+21.6%
OU3-WC-01 (TCLP)		2-Butanone	+35.3%
OU3-WC-01 OU3-SB-09(0-0.5) OU3-SB-10(14-14.5) OU3-SB-16(0-0.5) OU3-SB-13(14.5-15)		Dichlorodifluoromethane	+34.5%
		Acetone	-20.7%
		Carbon tetrachloride	+22.4%
		4-Methyl-2-pentanone	+37.8%
		2-Hexanone	+21.3%
OU3-SB-17(0-0.5)		Dichlorodifluoromethane	+23.9%
		Carbon tetrachloride	+23.6%
		4-Methyl-2-pentanone	+67.8%
		2-Hexanone	+55.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Duplicate Analysis

A laboratory duplicate was performed in replace of a MSD. The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Analyte
OU3-SB-13(14.5-15)	Ethylbenzene
	Xylene (total)

The criteria used to evaluate laboratory duplicate RPD are presented in the following table. In the case of a laboratory duplicate RPD deviation, the sample results are qualified. The qualifications are applied to the all sample results associated with this SDG.

Sample Concentration	Control Limit	Sample Result	Qualification
Parent sample and laboratory sample concentration >5 times CRDL	Water 20% or Soil 35%	Non-detect	UJ
		Detect	J
Parent sample and/or laboratory duplicate sample result ≤ five times the RL and difference between samples >RL	Water one times RL or Soil two times RL	Non-detect	UJ
		Detect	J

9. Laboratory Control Sample (LCS)/Blank Spike Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

10. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate was not collected with the sample location associated with this SDG.

11. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

12. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in the sample locations OU3-SB-09(14.5-15), OU3-SB-10(14-14.5) and OU3-SB-13(14.5-15. VOC analysis requires that TICs be qualified as estimated (JN).

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs & TCLP VOCs

VOCs: SW-846 8260B and 1311/8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X		X	X
Matrix Spike Duplicate(MSD)					
MS/MSD Precision (RPD)					
Field/Lab Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor					X
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4°C ± 2°C.
SW-846 1311/8270D	Soil/Leachate	14 days from collection to leachate, 7 days from leachate to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

The sample was analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.3 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.4 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
OU3-SB-16(0-0.5) OU3-SB-13(14.5-15	ICV %RSD	Naphthalene	15.43%
		2,4-Dinitrophenol	18.20%
		4-Nitrophenol	15.61%
		Phenanthrene	16.47%
		Fluoranthene	16.22%
		Pyrene	18.77%
		Benzo[b]fluoranthene	15.80%
		Benzo[a]pyrene	15.29%
OU3-WC-01		2,4-Dinitrotoluene	17.53%
OU3-SB-16(0-0.5)	CCV %D	2,4-Dinitrophenol	-22.2%
		Di-n-octylphthalate	+20.4%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on the sample location associated with this SDG.

8. Laboratory Control Sample (LCS)/Blank Spike

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
OU3-SB-16(0-0.5) OU3-SB-13(14.5-15	Benzaldehyde	>UL	--
OU3-WC-01	1,4-Dichlorobenzene	>UL	--
	Hexachlorobutadiene		

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Note: Sample results were not qualified as rejected (R) due to the deviations listed above.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate was not collected with the sample location associated with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria. Tentatively identified compounds (TICs) were identified in the sample location OU3-SB-13(14.5-15). VOC analysis requires that TICs be qualified as estimated (JN).

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs and TCLP SVOCs

SVOCs: SW-846 8270D and 1311/8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

TCLP HERBICIDES ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 1311/8151	Soil/Leachate	14 days from collection to leachate, 7 days from leachate to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. herbicide

analysis requires that one of the two herbicide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for leachate matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for leachate matrices.

A field duplicate was not collected with a sample location associated with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Compounds were not detected in the sample location.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR TCLP HERBICIDES

Herbicides; SW-846 1311/8151	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)					X
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference.

PESTICIDES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081A	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C
SW-846 1311/8081A	Soil/Leachate	14 days from collection to leachate, 7 days from leachate to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All Aroclors associated with calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
OU3-WC-01	CCV %D	Methoxychlor	+27.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20%or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >15% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >15% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. pesticide analysis requires that one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water/leachate matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water/Leachate matrices.

A field duplicate was not collected with a sample location associated with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES AND TCLP PESTICIDES

Pesticides; SW-846 8081B and 1311/8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X	X		
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Surrogate recoveries were acceptable.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on the sample location associated with this SDG.

7. Laboratory Control Sample (LCS)/Blank Spike

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate was not collected with the sample location associated with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (%RPD) of detected sample results must be less than 40%.

Compounds were not detected in the sample locations.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)					X
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010, 1311/6010, 7471, 1311/7471, Chapter 7 (Corrosivity), 9012B (Cyanide), ASTM D93 (Ignitability) and 9034 (Sulfide). Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

    U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

    B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

    E The reported value is estimated due to the presence of interference.

    N Spiked sample recovery is not within control limits.

    * Duplicate analysis is not within control limits.

- Validation Qualifiers

    J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

    UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

    UB Analyte considered non-detect at the listed value due to associated blank contamination.

    R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010B	Soil	180 days from collection to analysis	Cool to 4°C±2°C.
SW-846 7471	Soil	28 days from collection to analysis	Cool to 4°C±2°C.
SW-846 1311/6010B	Soil/Leachate	180 days from collection to leachate and 180 days from leachate to analysis	Cool to 4°C±2°C; preserved to a pH of less than 2.
SW-846 1311/7471	Soil/Leachate	28 days from collection to leachate and 28 days from collection to analysis	Cool to 4°C±2°C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table.

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS analysis was not performed on the sample location associated with this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on the sample location associated with this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

A serial dilution was not performed on the sample location associated with this SDG.

8. Furnace Analysis QC

No furnace analyses were performed on the samples.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010B, 7470A, 1311/6010 and 1311/7471	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
ICP Serial Dilution					X
Reporting Limit Verification		X		X	
Raw Data		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Cyanide by SW-846 9012B	Soil	14 days from collection to analysis	Cool to 4°C±2°C.
Ignitability by Chapter7/ASTM Chap 7 D93	Soil	30 days from collection to analysis	Cool to 4°C±2°C
Reactive Sulfide by 9034	Soil	7 days from collection to analysis	Cool to 4°C±2°C.
Corrosivity as pH by Chapter 7	Soil	< 7 days	Cool to 4°C±2°C

The analyses that exceeded the holding time are presented in the following table.

Sample Locations	Holding Time	Criteria
OU3-WC-01 (Sulfide)	11 days	< 7 Days
OU3-WC-01 (Corrosivity as pH)	11 days	< 7 Days

Sample results associated with sample locations analyzed by analytical methods 9034 (Sulfide) and Chapter 7) Corrosivity were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the RL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS analysis was not performed on the sample location associated with this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate sample was not performed on the sample location associated with this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA Chap 7, 9012B, ASTM D93 and 9034	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

SAMPLE COMPLIANCE REPORT

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB/PEST /HERB	MET	MISC	
JA97463	1/1912	SW-846	TB-011920212	Water	Yes	--	--	--	--	
		SW-846	FB-01192012	Water	Yes	--	--	Yes	--	
		SW-846 and SM	OU3-WC-01	Soil	Yes	No	Yes	Yes	No	SVOC: ICV %RSD Gen Chem: HT
		SW-846	OU3-SB-09(0-0.5)	Soil	Yes	--	--	Yes	--	
		SW-846	OU3-SB-09(14.5-15)	Soil	No	--	--	Yes	--	VOC: TICs
		SW-846	OU3-SB-10(14-14.5)	Soil	No	--	--	Yes	--	VOC: CCV %D, TICs
		SW-846	OU3-SB-17(0-0.5)	Soil	Yes	--	--	Yes	--	
		SW-846	OU3-SB-16(0-0.5)	Soil	Yes	No	Yes	Yes	Yes	SVOC: ICV %RSD
		SW-846	OU3-SB-13(14.5-15	Soil	Yes	Yes	Yes	Yes	Yes	VOC: Lab Dup RPD, TICs SVOC: ICV %RSD, TICs

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: February 17, 2012

PEER REVIEW: Todd Church

DATE: February 17, 2012

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST. LABORATORIES

STB FB SLL

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
Tel: 732-329-0200 FAX: 732-329-3499/3480
www. acutest.com

Priority

PAGE 1 OF 1

FED-EX Tracking # 6853386 | Bottle Order Control # |
Accutest Quote # | Accutest Job # JA97463

Client / Reporting Information

Company Name: ARCADIS
Street Address: 17-17 Route 208 North
City / State / Zip: Fairlawn NJ
Project Contact: Jon Rocklin E-mail: jon.rocklin@arcadis-us.com
Phone #: (914) 260-7373 Fax #: –
Sampler(s) Name(s): Krista Mastrocola Phone #: (610) 755-7080

Project Information

Project Name: Ford - Ramapo OU-3
Street: 9 Lea Ct
City: Pomona State: NY
Project #: NJ602.3.6
Client Purchase Order #:
Project Manager: Brich Zimmerman

Billing Information (if different from Report to)
Company Name: ARCADIS US Inc.
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL - Sludge, SED - Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB - Field Blank, EB - Equipment Blank, RB - Rinse Blank, TB - Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOCs	Metals	TCL+	TCLPFULL, RCRACLAS	LAB USE ONLY
1	TB-01192012		1/19/12	–	KHM	TB	2	2								X				ANET33,
2	FB-01192012			1200	KHM	FB	3	2		1						X	X			475
3	OU3-WC-01		**	1115		SO	7					4			3	X			X	EX91.
4	OU3-SB-09 (0-0.5)			1130			4					1			3	X	X			14K6,
5	OU3-SB-09 (14.5-15)			1140			4					1			3	X	X			19K6.
6	OU3-SB-10 (14-14.5)			1155			4					1			3	X	X			4049,
7	~~OU3-SB-17 (14.5-15)~~ KM OU3-SB-17(0-0.5)			1105			4					1			3	X	X			7666
8	OU3-SB-16 (0-0.5)	–		1050			4					1			3	~~X~~ KM		X		
9	OU3-SB-13 (14.5-15)	–	**	1020			4					1			3			X		
~~10~~	~~OU3~~ KM																			

Turnaround Time (Business days)

- [x] Std. 15 Business Days
- [ ] Std. 10 Business Days (by Contract only)
- [ ] 10 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

** 3 ENCORES (initials) 1/19/12
* FILLED 1/18/12 @ 1500 (initials) 1/19/12

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 (signature)	1/19/12 1400	1 (signature)	2 (signature)	1/19 1520	2 (signature)
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 622 PRESENT ☑ Intact ☐ Not intact	Preserved where applicable (initials)	On Ice: ☑ Cooler Temp. 3.0°C

1A

TRS 1/19/12

TR

4.1

4

JA97463: Chain of Custody
Page 1 of 2

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 1311	Percent Solids:	86.6
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L245546.D	5	01/25/12	TLR	01/23/12	GP62578	VL6227
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0050	0.0011	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.10	0.015	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.00097	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0011	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.0050	0.0010	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0013	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.00090	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0014	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0016	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0011	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.025	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	84%		76-120%
17060-07-0	1,2-Dichloroethane-D4	85%		64-135%
2037-26-5	Toluene-D8	91%		76-117%
460-00-4	4-Bromofluorobenzene	108%		72-122%

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB-01192012		
Lab Sample ID:	JA97463-1	Date Sampled:	01/19/12
Matrix:	AQ - Trip Blank Soil	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D69467.D	1	01/23/12	NT	n/a	n/a	V3D2987
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	7.6	ug/l	
71-43-2	Benzene	ND	1.0	0.22	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	4.0	0.24	ug/l	
74-83-9	Bromomethane	ND	2.0	0.31	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.18	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.19	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.22	ug/l	
75-00-3	Chloroethane	ND	1.0	0.37	ug/l	
67-66-3	Chloroform	ND	1.0	0.21	ug/l	
74-87-3	Chloromethane	ND	1.0	0.22	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.29	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.21	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.18	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.29	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.31	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.22	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
76-13-1	Freon 113	ND	5.0	0.49	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.19	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01192012		
Lab Sample ID:	JA97463-1	Date Sampled:	01/19/12
Matrix:	AQ - Trip Blank Soil	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	5.0	2.9	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.18	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.18	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.20	ug/l	
100-42-5	Styrene	ND	5.0	0.23	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.20	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.32	ug/l	
108-88-3	Toluene	ND	1.0	0.15	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.15	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.23	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.21	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	0.35	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.27	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.17	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		77-120%
17060-07-0	1,2-Dichloroethane-D4	90%		70-127%
2037-26-5	Toluene-D8	101%		79-120%
460-00-4	4-Bromofluorobenzene	90%		76-118%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	FB-01192012		
Lab Sample ID:	JA97463-2	Date Sampled:	01/19/12
Matrix:	AQ - Field Blank Soil	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D69468.D	1	01/23/12	NT	n/a	n/a	V3D2987
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	7.6	ug/l	
71-43-2	Benzene	ND	1.0	0.22	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	4.0	0.24	ug/l	
74-83-9	Bromomethane	ND	2.0	0.31	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.18	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.19	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.22	ug/l	
75-00-3	Chloroethane	ND	1.0	0.37	ug/l	
67-66-3	Chloroform	ND	1.0	0.21	ug/l	
74-87-3	Chloromethane	ND	1.0	0.22	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.29	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.21	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.18	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.29	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.31	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.22	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
76-13-1	Freon 113	ND	5.0	0.49	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.19	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB-01192012		
Lab Sample ID:	JA97463-2	Date Sampled:	01/19/12
Matrix:	AQ - Field Blank Soil	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	5.0	2.9	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.18	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.18	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.20	ug/l	
100-42-5	Styrene	ND	5.0	0.23	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.20	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.32	ug/l	
108-88-3	Toluene	ND	1.0	0.15	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.15	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.23	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.21	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	0.35	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.27	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.17	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		77-120%
17060-07-0	1,2-Dichloroethane-D4	88%		70-127%
2037-26-5	Toluene-D8	101%		79-120%
460-00-4	4-Bromofluorobenzene	91%		76-118%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	86.6
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119818.D	1	01/26/12	RS	01/19/12 16:00	n/a	VY5123
Run #2							

	Initial Weight
Run #1	5.0 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	12	7.6	ug/kg	
71-43-2	Benzene	ND	1.2	0.15	ug/kg	
75-27-4	Bromodichloromethane	ND	5.8	0.26	ug/kg	
75-25-2	Bromoform	ND	5.8	0.87	ug/kg	
74-83-9	Bromomethane	ND	5.8	0.45	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	5.0	ug/kg	
75-15-0	Carbon disulfide	ND	5.8	0.23	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.8	0.40	ug/kg	
108-90-7	Chlorobenzene	ND	5.8	0.37	ug/kg	
75-00-3	Chloroethane	ND	5.8	0.47	ug/kg	
67-66-3	Chloroform	ND	5.8	0.56	ug/kg	
74-87-3	Chloromethane	ND	5.8	0.72	ug/kg	
110-82-7	Cyclohexane	ND	5.8	0.44	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	12	1.7	ug/kg	
124-48-1	Dibromochloromethane	ND	5.8	0.19	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.27	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	5.8	0.32	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	5.8	0.22	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	5.8	0.20	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.8	0.37	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.8	0.25	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.21	ug/kg	
75-35-4	1,1-Dichloroethene	ND	5.8	0.71	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	5.8	0.37	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	5.8	0.49	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.8	0.31	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.8	0.18	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.8	0.39	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.17	ug/kg	
76-13-1	Freon 113	ND	5.8	0.83	ug/kg	
591-78-6	2-Hexanone	ND	5.8	2.9	ug/kg	
98-82-8	Isopropylbenzene	ND	5.8	0.16	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	86.6
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	5.8	2.6	ug/kg	
108-87-2	Methylcyclohexane	ND	5.8	0.28	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.21	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.8	3.0	ug/kg	
75-09-2	Methylene chloride	ND	5.8	0.27	ug/kg	
100-42-5	Styrene	ND	5.8	0.21	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.8	0.21	ug/kg	
127-18-4	Tetrachloroethene	ND	5.8	0.22	ug/kg	
108-88-3	Toluene	ND	1.2	0.44	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.8	0.39	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.8	0.28	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.8	0.50	ug/kg	
79-01-6	Trichloroethene	ND	5.8	0.29	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.8	0.56	ug/kg	
75-01-4	Vinyl chloride	ND	5.8	0.53	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.21	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		67-131%
17060-07-0	1,2-Dichloroethane-D4	84%		66-130%
2037-26-5	Toluene-D8	93%		76-125%
460-00-4	4-Bromofluorobenzene	89%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	OU3-SB-09(0-0.5)		
Lab Sample ID:	JA97463-4	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	90.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119819.D	1	01/26/12	RS	01/19/12 16:00	n/a	VY5123
Run #2							

	Initial Weight
Run #1	5.1 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	7.2	ug/kg	
71-43-2	Benzene	ND	1.1	0.14	ug/kg	
75-27-4	Bromodichloromethane	ND	5.4	0.24	ug/kg	
75-25-2	Bromoform	ND	5.4	0.82	ug/kg	
74-83-9	Bromomethane	ND	5.4	0.43	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	4.7	ug/kg	
75-15-0	Carbon disulfide	ND	5.4	0.21	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.4	0.38	ug/kg	
108-90-7	Chlorobenzene	ND	5.4	0.35	ug/kg	
75-00-3	Chloroethane	ND	5.4	0.44	ug/kg	
67-66-3	Chloroform	ND	5.4	0.53	ug/kg	
74-87-3	Chloromethane	ND	5.4	0.68	ug/kg	
110-82-7	Cyclohexane	ND	5.4	0.41	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	11	1.6	ug/kg	
124-48-1	Dibromochloromethane	ND	5.4	0.18	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.26	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	5.4	0.30	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	5.4	0.21	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	5.4	0.19	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.4	0.35	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.4	0.24	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.20	ug/kg	
75-35-4	1,1-Dichloroethene	ND	5.4	0.67	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	5.4	0.35	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	5.4	0.46	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.4	0.29	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.4	0.17	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.4	0.37	ug/kg	
100-41-4	Ethylbenzene	0.25	1.1	0.16	ug/kg	J
76-13-1	Freon 113	ND	5.4	0.78	ug/kg	
591-78-6	2-Hexanone	ND	5.4	2.7	ug/kg	
98-82-8	Isopropylbenzene	ND	5.4	0.15	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-09(0-0.5)		
Lab Sample ID:	JA97463-4	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	90.0
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	5.4	2.4	ug/kg	
108-87-2	Methylcyclohexane	ND	5.4	0.27	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.19	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.4	2.9	ug/kg	
75-09-2	Methylene chloride	ND	5.4	0.25	ug/kg	
100-42-5	Styrene	ND	5.4	0.20	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.4	0.19	ug/kg	
127-18-4	Tetrachloroethene	ND	5.4	0.21	ug/kg	
108-88-3	Toluene	ND	1.1	0.41	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.4	0.37	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.4	0.26	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.4	0.47	ug/kg	
79-01-6	Trichloroethene	ND	5.4	0.27	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.4	0.53	ug/kg	
75-01-4	Vinyl chloride	ND	5.4	0.50	ug/kg	
1330-20-7	Xylene (total)	1.9	1.1	0.20	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		67-131%
17060-07-0	1,2-Dichloroethane-D4	85%		66-130%
2037-26-5	Toluene-D8	93%		76-125%
460-00-4	4-Bromofluorobenzene	90%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-09(14.5-15)		
Lab Sample ID:	JA97463-5	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	92.3
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	D192113.D	1	01/31/12	ET	01/19/12 16:00	n/a	VD7823
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.6 g	5.0 ml	100 ul
Run #2			

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	530	350	ug/kg	
71-43-2	Benzene	15.1	53	7.0	ug/kg	J
75-27-4	Bromodichloromethane	ND	260	12	ug/kg	
75-25-2	Bromoform	ND	260	40	ug/kg	
74-83-9	Bromomethane	ND	260	21	ug/kg	
78-93-3	2-Butanone (MEK)	ND	530	230	ug/kg	
75-15-0	Carbon disulfide	ND	260	10	ug/kg	
56-23-5	Carbon tetrachloride	ND	260	18	ug/kg	
108-90-7	Chlorobenzene	ND	260	17	ug/kg	
75-00-3	Chloroethane	ND	260	21	ug/kg	
67-66-3	Chloroform	ND	260	25	ug/kg	
74-87-3	Chloromethane	ND	260	33	ug/kg	
110-82-7	Cyclohexane	ND	260	20	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	530	79	ug/kg	
124-48-1	Dibromochloromethane	ND	260	8.8	ug/kg	
106-93-4	1,2-Dibromoethane	ND	53	13	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	260	15	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	260	10	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	260	8.9	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	260	17	ug/kg	
75-34-3	1,1-Dichloroethane	ND	260	11	ug/kg	
107-06-2	1,2-Dichloroethane	ND	53	9.6	ug/kg	
75-35-4	1,1-Dichloroethene	ND	260	32	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	260	17	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	260	22	ug/kg	
78-87-5	1,2-Dichloropropane	ND	260	14	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	260	8.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	260	18	ug/kg	
100-41-4	Ethylbenzene	1290	53	7.8	ug/kg	
76-13-1	Freon 113	ND	260	38	ug/kg	
591-78-6	2-Hexanone	ND	260	130	ug/kg	
98-82-8	Isopropylbenzene	190	260	7.2	ug/kg	J

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-09(14.5-15)		
Lab Sample ID:	JA97463-5	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	92.3
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	260	120	ug/kg	
108-87-2	Methylcyclohexane	50.3	260	13	ug/kg	J
1634-04-4	Methyl Tert Butyl Ether	ND	53	9.4	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	260	140	ug/kg	
75-09-2	Methylene chloride	ND	260	12	ug/kg	
100-42-5	Styrene	ND	260	9.7	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	260	9.4	ug/kg	
127-18-4	Tetrachloroethene	ND	260	10	ug/kg	
108-88-3	Toluene	884	53	20	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	260	18	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	260	13	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	260	23	ug/kg	
79-01-6	Trichloroethene	ND	260	13	ug/kg	
75-69-4	Trichlorofluoromethane	ND	260	25	ug/kg	
75-01-4	Vinyl chloride	ND	260	24	ug/kg	
1330-20-7	Xylene (total)	9860	53	9.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		67-131%
17060-07-0	1,2-Dichloroethane-D4	88%		66-130%
2037-26-5	Toluene-D8	102%		76-125%
460-00-4	4-Bromofluorobenzene	88%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
103-65-1	Benzene, propyl-	15.54	900	ug/kg	JN
	C3 alkyl benzene	15.61	2700	ug/kg	J N
	C3 alkyl benzene	15.65	1300	ug/kg	J N
	C3 alkyl benzene	15.70	1500	ug/kg	J N
	C3 alkyl benzene	15.96	1400	ug/kg	J N
95-63-6	Benzene, 1,2,4-trimethyl-	16.14	5100	ug/kg	JN
	C3 alkyl benzene	16.63	1400	ug/kg	J N
	C4 alkyl benzene	16.83	1100	ug/kg	J
	C4 alkyl benzene	16.89	2000	ug/kg	J
	C4 alkyl benzene	17.31	1600	ug/kg	J
	1H-indene-dihydro-methyl	17.50	870	ug/kg	J
	C4 alkyl benzene	17.75	1400	ug/kg	J
	C4 alkyl benzene	17.82	2000	ug/kg	J
	C4 alkyl benzene	18.30	1200	ug/kg	J N

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-09(14.5-15)		
Lab Sample ID:	JA97463-5	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	92.3
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	1H-indene-dihydro-methyl	18.34	950	ug/kg	J N
	Total TIC, Volatile		25420	ug/kg	J N

(a) Diluted due to high concentration of target compound.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-10(14-14.5)		
Lab Sample ID:	JA97463-6	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	60.8
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119820.D	1	01/26/12	RS	01/19/12 16:00	n/a	VY5123
Run #2							

	Initial Weight
Run #1	3.3 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	86.0	25	16	ug/kg	J
71-43-2	Benzene	203	2.5	0.33	ug/kg	
75-27-4	Bromodichloromethane	ND	12	0.56	ug/kg	
75-25-2	Bromoform	ND	12	1.9	ug/kg	
74-83-9	Bromomethane	ND	12	0.98	ug/kg	
78-93-3	2-Butanone (MEK)	28.7	25	11	ug/kg	
75-15-0	Carbon disulfide	ND	12	0.49	ug/kg	
56-23-5	Carbon tetrachloride	ND	12	0.86	ug/kg	
108-90-7	Chlorobenzene	ND	12	0.80	ug/kg	
75-00-3	Chloroethane	ND	12	1.0	ug/kg	
67-66-3	Chloroform	ND	12	1.2	ug/kg	
74-87-3	Chloromethane	ND	12	1.6	ug/kg	
110-82-7	Cyclohexane	29.4	12	0.94	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	25	3.8	ug/kg	
124-48-1	Dibromochloromethane	ND	12	0.42	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.5	0.59	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	12	0.69	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	12	0.48	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	12	0.42	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	12	0.80	ug/kg	
75-34-3	1,1-Dichloroethane	ND	12	0.54	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.5	0.45	ug/kg	
75-35-4	1,1-Dichloroethene	ND	12	1.5	ug/kg	
156-59-2	cis-1,2-Dichloroethene	2.9	12	0.80	ug/kg	J
156-60-5	trans-1,2-Dichloroethene	ND	12	1.1	ug/kg	
78-87-5	1,2-Dichloropropane	ND	12	0.66	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	12	0.38	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	12	0.84	ug/kg	
100-41-4	Ethylbenzene	37.1	2.5	0.37	ug/kg	
76-13-1	Freon 113	ND	12	1.8	ug/kg	
591-78-6	2-Hexanone	ND	12	6.2	ug/kg	
98-82-8	Isopropylbenzene	32.7	12	0.34	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-10(14-14.5)		
Lab Sample ID:	JA97463-6	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	60.8
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	12	5.5	ug/kg	
108-87-2	Methylcyclohexane	21.1	12	0.61	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.5	0.45	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	12	6.6	ug/kg	
75-09-2	Methylene chloride	ND	12	0.57	ug/kg	
100-42-5	Styrene	ND	12	0.46	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	12	0.45	ug/kg	
127-18-4	Tetrachloroethene	ND	12	0.48	ug/kg	
108-88-3	Toluene	ND	2.5	0.94	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	12	0.85	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	12	0.60	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	12	1.1	ug/kg	
79-01-6	Trichloroethene	ND	12	0.62	ug/kg	
75-69-4	Trichlorofluoromethane	ND	12	1.2	ug/kg	
75-01-4	Vinyl chloride	ND	12	1.1	ug/kg	
1330-20-7	Xylene (total)	788	2.5	0.46	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		67-131%
17060-07-0	1,2-Dichloroethane-D4	91%		66-130%
2037-26-5	Toluene-D8	94%		76-125%
460-00-4	4-Bromofluorobenzene	91%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkane	7.60	19	ug/kg	J N
	alkane	7.96	16	ug/kg	J N
110-54-3	Hexane	8.29	23	ug/kg	JN
96-37-7	Cyclopentane, methyl-	9.17	32	ug/kg	JN
142-82-5	Heptane	10.50	13	ug/kg	JN
	C3 alkyl benzene	15.24	42	ug/kg	J N
108-67-8	Benzene, 1,3,5-trimethyl-	15.31	18	ug/kg	JN
	C3 alkyl benzene	15.55	22	ug/kg	J N
95-63-6	Benzene, 1,2,4-trimethyl-	15.70	67	ug/kg	JN
496-11-7	Indane	16.39	24	ug/kg	JN
	Total TIC, Volatile		276	ug/kg	J N

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-17(0-0.5)		
Lab Sample ID:	JA97463-7	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	71.4
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119864.D	1	01/27/12	RS	01/19/12 16:00	n/a	VY5125
Run #2							

	Initial Weight
Run #1	4.2 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	17	11	ug/kg	
71-43-2	Benzene	ND	1.7	0.22	ug/kg	
75-27-4	Bromodichloromethane	ND	8.3	0.37	ug/kg	
75-25-2	Bromoform	ND	8.3	1.3	ug/kg	
74-83-9	Bromomethane	ND	8.3	0.66	ug/kg	
78-93-3	2-Butanone (MEK)	ND	17	7.2	ug/kg	
75-15-0	Carbon disulfide	ND	8.3	0.33	ug/kg	
56-23-5	Carbon tetrachloride	ND	8.3	0.58	ug/kg	
108-90-7	Chlorobenzene	ND	8.3	0.54	ug/kg	
75-00-3	Chloroethane	ND	8.3	0.68	ug/kg	
67-66-3	Chloroform	ND	8.3	0.81	ug/kg	
74-87-3	Chloromethane	ND	8.3	1.0	ug/kg	
110-82-7	Cyclohexane	ND	8.3	0.63	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	17	2.5	ug/kg	
124-48-1	Dibromochloromethane	ND	8.3	0.28	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.7	0.40	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	8.3	0.46	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	8.3	0.32	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	8.3	0.28	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	8.3	0.54	ug/kg	
75-34-3	1,1-Dichloroethane	ND	8.3	0.36	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.7	0.30	ug/kg	
75-35-4	1,1-Dichloroethene	ND	8.3	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	8.3	0.54	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	8.3	0.71	ug/kg	
78-87-5	1,2-Dichloropropane	ND	8.3	0.44	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	8.3	0.25	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	8.3	0.56	ug/kg	
100-41-4	Ethylbenzene	ND	1.7	0.25	ug/kg	
76-13-1	Freon 113	ND	8.3	1.2	ug/kg	
591-78-6	2-Hexanone	ND	8.3	4.1	ug/kg	
98-82-8	Isopropylbenzene	ND	8.3	0.23	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-17(0-0.5)		
Lab Sample ID:	JA97463-7	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	71.4
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	8.3	3.7	ug/kg	
108-87-2	Methylcyclohexane	ND	8.3	0.41	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.7	0.30	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	8.3	4.4	ug/kg	
75-09-2	Methylene chloride	ND	8.3	0.38	ug/kg	
100-42-5	Styrene	ND	8.3	0.31	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	8.3	0.30	ug/kg	
127-18-4	Tetrachloroethene	ND	8.3	0.32	ug/kg	
108-88-3	Toluene	ND	1.7	0.63	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	8.3	0.57	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	8.3	0.40	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	8.3	0.72	ug/kg	
79-01-6	Trichloroethene	ND	8.3	0.41	ug/kg	
75-69-4	Trichlorofluoromethane	ND	8.3	0.80	ug/kg	
75-01-4	Vinyl chloride	ND	8.3	0.77	ug/kg	
1330-20-7	Xylene (total)	ND	1.7	0.31	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		67-131%
17060-07-0	1,2-Dichloroethane-D4	97%		66-130%
2037-26-5	Toluene-D8	94%		76-125%
460-00-4	4-Bromofluorobenzene	94%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	82.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119813.D	1	01/26/12	RS	01/19/12 16:00	n/a	VY5123
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	13	8.6	ug/kg	
71-43-2	Benzene	ND	1.3	0.17	ug/kg	
75-27-4	Bromodichloromethane	ND	6.5	0.29	ug/kg	
75-25-2	Bromoform	ND	6.5	0.98	ug/kg	
74-83-9	Bromomethane	ND	6.5	0.51	ug/kg	
78-93-3	2-Butanone (MEK)	ND	13	5.6	ug/kg	
75-15-0	Carbon disulfide	ND	6.5	0.25	ug/kg	
56-23-5	Carbon tetrachloride	ND	6.5	0.45	ug/kg	
108-90-7	Chlorobenzene	ND	6.5	0.42	ug/kg	
75-00-3	Chloroethane	ND	6.5	0.53	ug/kg	
67-66-3	Chloroform	ND	6.5	0.63	ug/kg	
74-87-3	Chloromethane	ND	6.5	0.81	ug/kg	
110-82-7	Cyclohexane	ND	6.5	0.49	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	13	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	6.5	0.22	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.3	0.31	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	6.5	0.36	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	6.5	0.25	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	6.5	0.22	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.5	0.42	ug/kg	
75-34-3	1,1-Dichloroethane	ND	6.5	0.28	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.3	0.24	ug/kg	
75-35-4	1,1-Dichloroethene	ND	6.5	0.80	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	6.5	0.42	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	6.5	0.55	ug/kg	
78-87-5	1,2-Dichloropropane	ND	6.5	0.35	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	6.5	0.20	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	6.5	0.44	ug/kg	
100-41-4	Ethylbenzene	ND	1.3	0.19	ug/kg	
76-13-1	Freon 113	ND	6.5	0.93	ug/kg	
591-78-6	2-Hexanone	ND	6.5	3.2	ug/kg	
98-82-8	Isopropylbenzene	ND	6.5	0.18	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	82.0
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	6.5	2.9	ug/kg	
108-87-2	Methylcyclohexane	ND	6.5	0.32	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.3	0.23	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.5	3.4	ug/kg	
75-09-2	Methylene chloride	ND	6.5	0.30	ug/kg	
100-42-5	Styrene	ND	6.5	0.24	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.5	0.23	ug/kg	
127-18-4	Tetrachloroethene	ND	6.5	0.25	ug/kg	
108-88-3	Toluene	ND	1.3	0.49	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.5	0.44	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	6.5	0.31	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	6.5	0.56	ug/kg	
79-01-6	Trichloroethene	ND	6.5	0.32	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.5	0.63	ug/kg	
75-01-4	Vinyl chloride	ND	6.5	0.60	ug/kg	
1330-20-7	Xylene (total)	0.97	1.3	0.24	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		67-131%
17060-07-0	1,2-Dichloroethane-D4	85%		66-130%
2037-26-5	Toluene-D8	94%		76-125%
460-00-4	4-Bromofluorobenzene	90%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	86.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y119811.D	1	01/26/12	RS	01/19/12 16:00	n/a	VY5123
Run #2							

	Initial Weight
Run #1	6.3 g
Run #2	

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	9.2	6.1	ug/kg	
71-43-2	Benzene	1.6	0.92	0.12	ug/kg	
75-27-4	Bromodichloromethane	ND	4.6	0.21	ug/kg	
75-25-2	Bromoform	ND	4.6	0.70	ug/kg	
74-83-9	Bromomethane	ND	4.6	0.36	ug/kg	
78-93-3	2-Butanone (MEK)	ND	9.2	4.0	ug/kg	
75-15-0	Carbon disulfide	ND	4.6	0.18	ug/kg	
56-23-5	Carbon tetrachloride	ND	4.6	0.32	ug/kg	
108-90-7	Chlorobenzene	ND	4.6	0.30	ug/kg	
75-00-3	Chloroethane	ND	4.6	0.38	ug/kg	
67-66-3	Chloroform	ND	4.6	0.45	ug/kg	
74-87-3	Chloromethane	ND	4.6	0.58	ug/kg	
110-82-7	Cyclohexane	ND	4.6	0.35	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	9.2	1.4	ug/kg	
124-48-1	Dibromochloromethane	ND	4.6	0.16	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.92	0.22	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	4.6	0.26	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	4.6	0.18	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	4.6	0.16	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.6	0.30	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.6	0.20	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.92	0.17	ug/kg	
75-35-4	1,1-Dichloroethene	ND	4.6	0.57	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	4.6	0.30	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	4.6	0.39	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.6	0.25	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.6	0.14	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.6	0.31	ug/kg	
100-41-4	Ethylbenzene	4.3	0.92	0.14	ug/kg	J
76-13-1	Freon 113	ND	4.6	0.66	ug/kg	
591-78-6	2-Hexanone	ND	4.6	2.3	ug/kg	
98-82-8	Isopropylbenzene	4.5	4.6	0.13	ug/kg	J

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8260B SW846 5035	Percent Solids:	86.0
Project:	Ramapo, NY		

VOA TCL List (OLM4.2)

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	4.6	2.0	ug/kg	
108-87-2	Methylcyclohexane	1.2	4.6	0.23	ug/kg	J
1634-04-4	Methyl Tert Butyl Ether	ND	0.92	0.17	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.6	2.4	ug/kg	
75-09-2	Methylene chloride	ND	4.6	0.21	ug/kg	
100-42-5	Styrene	ND	4.6	0.17	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.6	0.17	ug/kg	
127-18-4	Tetrachloroethene	ND	4.6	0.18	ug/kg	
108-88-3	Toluene	0.41	0.92	0.35	ug/kg	J
120-82-1	1,2,4-Trichlorobenzene	ND	4.6	0.31	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.6	0.22	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.6	0.40	ug/kg	
79-01-6	Trichloroethene	ND	4.6	0.23	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.6	0.44	ug/kg	
75-01-4	Vinyl chloride	ND	4.6	0.43	ug/kg	
1330-20-7	Xylene (total)	299	0.92	0.17	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		67-131%
17060-07-0	1,2-Dichloroethane-D4	88%		66-130%
2037-26-5	Toluene-D8	93%		76-125%
460-00-4	4-Bromofluorobenzene	87%		53-142%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
103-65-1	Benzene, propyl-	15.17	5.5	ug/kg	JN
	C3 alkyl benzene	15.24	29	ug/kg	J
108-67-8	Benzene, 1,3,5-trimethyl-	15.31	9.1	ug/kg	JN
	C3 alkyl benzene	15.55	13	ug/kg	J
95-63-6	Benzene, 1,2,4-trimethyl-	15.70	40	ug/kg	JN
496-11-7	Indane	16.39	17	ug/kg	JN
	Total TIC, Volatile		113.6	ug/kg	J

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3510C	Percent Solids:	86.6
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P62028.D	1	01/25/12	NAP	01/24/12	OP54405	EP2671
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate — TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.010	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0093	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.016	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.013	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0036	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0043	mg/l	J
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0034	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0051	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0055	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0042	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0032	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		13-68%
4165-62-2	Phenol-d5	30%		10-49%
118-79-6	2,4,6-Tribromophenol	115%		37-130%
4165-60-0	Nitrobenzene-d5	95%		25-112%
321-60-8	2-Fluorobiphenyl	88%		31-106%
1718-51-0	Terphenyl-d14	97%		14-122%

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	82.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M84533.D	1	01/27/12	OYA	01/23/12	OP54377	EM3373
Run #2							

	Initial Weight	Final Volume
Run #1	35.7 g	1.0 ml
Run #2		

ABN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	170	35	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	170	34	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	170	55	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	170	57	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	680	42	ug/kg	J
534-52-1	4,6-Dinitro-o-cresol	ND	680	42	ug/kg	
95-48-7	2-Methylphenol	ND	68	39	ug/kg	
	3&4-Methylphenol	ND	68	43	ug/kg	
88-75-5	2-Nitrophenol	ND	170	36	ug/kg	
100-02-7	4-Nitrophenol	ND	340	58	ug/kg	J
87-86-5	Pentachlorophenol	ND	340	58	ug/kg	
108-95-2	Phenol	ND	68	36	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	170	40	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	170	32	ug/kg	
83-32-9	Acenaphthene	ND	34	9.9	ug/kg	
208-96-8	Acenaphthylene	42.1	34	11	ug/kg	
98-86-2	Acetophenone	ND	170	6.0	ug/kg	
120-12-7	Anthracene	28.6	34	12	ug/kg	J
1912-24-9	Atrazine	ND	170	6.7	ug/kg	
56-55-3	Benzo(a)anthracene	65.1	34	11	ug/kg	
50-32-8	Benzo(a)pyrene	86.9	34	10	ug/kg	J
205-99-2	Benzo(b)fluoranthene	88.7	34	11	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	73.0	34	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	20.4	34	13	ug/kg	J
101-55-3	4-Bromophenyl phenyl ether	ND	68	12	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	68	20	ug/kg	
92-52-4	1,1'-Biphenyl	ND	68	4.0	ug/kg	
100-52-7	Benzaldehyde	ND	170	7.9	ug/kg	
91-58-7	2-Chloronaphthalene	ND	68	11	ug/kg	
106-47-8	4-Chloroaniline	ND	170	11	ug/kg	
86-74-8	Carbazole	ND	68	16	ug/kg	
105-60-2	Caprolactam	ND	68	11	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	82.0
Project:	Ramapo, NY		

ABN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
218-01-9	Chrysene	82.3	34	12	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	68	14	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	68	10	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	68	10	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	68	10	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	68	15	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	68	13	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	170	8.7	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	21.1	34	12	ug/kg	J
132-64-9	Dibenzofuran	ND	68	10	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	68	7.6	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	68	17	ug/kg	
84-66-2	Diethyl phthalate	ND	68	12	ug/kg	
131-11-3	Dimethyl phthalate	ND	68	12	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	68	30	ug/kg	
206-44-0	Fluoranthene	71.4	34	15	ug/kg	J
86-73-7	Fluorene	ND	34	11	ug/kg	
118-74-1	Hexachlorobenzene	ND	68	11	ug/kg	
87-68-3	Hexachlorobutadiene	ND	34	9.5	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	680	35	ug/kg	
67-72-1	Hexachloroethane	ND	170	9.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	53.7	34	12	ug/kg	
78-59-1	Isophorone	ND	68	9.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	68	19	ug/kg	
88-74-4	2-Nitroaniline	ND	170	15	ug/kg	
99-09-2	3-Nitroaniline	ND	170	14	ug/kg	
100-01-6	4-Nitroaniline	ND	170	13	ug/kg	
91-20-3	Naphthalene	39.4	34	9.3	ug/kg	J
98-95-3	Nitrobenzene	ND	68	9.9	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	68	8.3	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	170	20	ug/kg	
85-01-8	Phenanthrene	40.3	34	16	ug/kg	J
129-00-0	Pyrene	122	34	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%		21-116%
4165-62-2	Phenol-d5	61%		19-117%
118-79-6	2,4,6-Tribromophenol	85%		24-136%
4165-60-0	Nitrobenzene-d5	80%		21-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	82.0
Project:	Ramapo, NY		

ABN TCL List (CLP4.2 list)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
321-60-8	2-Fluorobiphenyl	76%		30-117%
1718-51-0	Terphenyl-d14	76%		31-129%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	86.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M84508.D	1	01/26/12	OYA	01/23/12	OP54377	EM3372
Run #2							

	Initial Weight	Final Volume
Run #1	35.1 g	1.0 ml
Run #2		

ABN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
95-57-8	2-Chlorophenol	ND	170	33	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	170	33	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	170	53	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	170	56	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	660	40	ug/kg	J
534-52-1	4,6-Dinitro-o-cresol	ND	660	40	ug/kg	
95-48-7	2-Methylphenol	ND	66	38	ug/kg	
	3&4-Methylphenol	ND	66	42	ug/kg	
88-75-5	2-Nitrophenol	ND	170	35	ug/kg	
100-02-7	4-Nitrophenol	ND	330	56	ug/kg	J
87-86-5	Pentachlorophenol	ND	330	57	ug/kg	
108-95-2	Phenol	ND	66	35	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	170	38	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	170	31	ug/kg	
83-32-9	Acenaphthene	ND	33	9.6	ug/kg	
208-96-8	Acenaphthylene	ND	33	11	ug/kg	
98-86-2	Acetophenone	ND	170	5.8	ug/kg	
120-12-7	Anthracene	ND	33	12	ug/kg	
1912-24-9	Atrazine	ND	170	6.5	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	10	ug/kg	J
205-99-2	Benzo(b)fluoranthene	ND	33	11	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	ND	33	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	12	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	66	12	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	66	19	ug/kg	
92-52-4	1,1'-Biphenyl	ND	66	3.8	ug/kg	
100-52-7	Benzaldehyde	ND	170	7.6	ug/kg	
91-58-7	2-Chloronaphthalene	ND	66	10	ug/kg	
106-47-8	4-Chloroaniline	ND	170	11	ug/kg	
86-74-8	Carbazole	ND	66	15	ug/kg	
105-60-2	Caprolactam	ND	66	10	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	86.0
Project:	Ramapo, NY		

ABN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
218-01-9	Chrysene	ND	33	11	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	66	13	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	66	10	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	66	9.8	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	66	10	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	66	14	ug/kg	J
606-20-2	2,6-Dinitrotoluene	ND	66	13	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	170	8.4	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	11	ug/kg	
132-64-9	Dibenzofuran	ND	66	9.8	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	66	7.4	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	66	16	ug/kg	
84-66-2	Diethyl phthalate	ND	66	11	ug/kg	
131-11-3	Dimethyl phthalate	59.7	66	12	ug/kg	J
117-81-7	bis(2-Ethylhexyl)phthalate	ND	66	29	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	J
86-73-7	Fluorene	ND	33	11	ug/kg	
118-74-1	Hexachlorobenzene	ND	66	11	ug/kg	
87-68-3	Hexachlorobutadiene	ND	33	9.2	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	660	34	ug/kg	
67-72-1	Hexachloroethane	ND	170	9.2	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	11	ug/kg	
78-59-1	Isophorone	ND	66	8.9	ug/kg	
91-57-6	2-Methylnaphthalene	42.8	66	18	ug/kg	J
88-74-4	2-Nitroaniline	ND	170	15	ug/kg	
99-09-2	3-Nitroaniline	ND	170	13	ug/kg	
100-01-6	4-Nitroaniline	ND	170	13	ug/kg	
91-20-3	Naphthalene	441	33	9.0	ug/kg	
98-95-3	Nitrobenzene	ND	66	9.6	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	66	8.1	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	170	20	ug/kg	
85-01-8	Phenanthrene	ND	33	15	ug/kg	J
129-00-0	Pyrene	ND	33	13	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		21-116%
4165-62-2	Phenol-d5	30%		19-117%
118-79-6	2,4,6-Tribromophenol	73%		24-136%
4165-60-0	Nitrobenzene-d5	33%		21-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8270D SW846 3550C	Percent Solids:	86.0
Project:	Ramapo, NY		

ABN TCL List (CLP4.2 list)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
321-60-8	2-Fluorobiphenyl	37%		30-117%
1718-51-0	Terphenyl-d14	68%		31-129%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact/aldol-condensation	3.21	390	ug/kg	J N
	C3 alkyl benzene	4.52	390	ug/kg	J
	C3 alkyl benzene	4.61	1600	ug/kg	J
	C3 alkyl benzene	4.70	680	ug/kg	J
	C3 alkyl benzene	4.85	670	ug/kg	J
	C3 alkyl benzene	5.02	2800	ug/kg	J
	C3 alkyl benzene	5.40	940	ug/kg	J N
496-11-7	Indane	5.58	770	ug/kg	JN
	C4 alkyl benzene	5.83	430	ug/kg	J N
	C4 alkyl benzene	6.09	410	ug/kg	J N
85-44-9	Phthalic anhydride	9.01	770	ug/kg	JN
	unknown	12.65	1000	ug/kg	J N
	unknown	13.14	460	ug/kg	J N
57-10-3	Hexadecanoic acid	15.06	480	ug/kg	JN
	unknown	16.26	580	ug/kg	J N
	unknown	16.59	370	ug/kg	J
	unknown	17.85	1100	ug/kg	J
	unknown	18.08	580	ug/kg	J
	unknown	18.89	420	ug/kg	J
	alkane	19.62	550	ug/kg	J
	unknown	21.87	500	ug/kg	J
	unknown	21.94	760	ug/kg	J
	unknown	22.11	520	ug/kg	J
	unknown	22.22	420	ug/kg	J
	unknown	22.33	950	ug/kg	J
	unknown	22.50	1600	ug/kg	J
	Total TIC, Semi-Volatile		19750	ug/kg	J N

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8151 SW846 3510C	Percent Solids:	86.6
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA80925.D	1	01/28/12	VDT	01/26/12	OP54383	GOA2754
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Herbicide TCLP Leachate — TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0050	0.0013	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0015	0.00018	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	61%		50-142%
19719-28-9	2,4-DCAA	51%		50-142%

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3G61475.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8081B SW846 3510C	Percent Solids:	86.6
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G61475.D	1	01/25/12	VDT	01/24/12	OP54389	G3G2220
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Pesticide TCLP Leachate — TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.00010	0.000041	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0050	0.0024	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.00010	0.000064	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.00010	0.000084	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.00010	0.000038	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00020	0.000082	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0025	0.0015	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		30-137%
877-09-8	Tetrachloro-m-xylene	105%		30-137%
2051-24-3	Decachlorobiphenyl	98%		10-137%
2051-24-3	Decachlorobiphenyl	94%		10-137%

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3G61598.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8081B SW846 3545A	Percent Solids:	82.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G61598.D	1	01/31/12	VDT	01/21/12	OP54360	G3G2224
Run #2							

	Initial Weight	Final Volume
Run #1	17.3 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.70	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.70	0.53	ug/kg	
319-85-7	beta-BHC	ND	0.70	0.49	ug/kg	
319-86-8	delta-BHC	ND	0.70	0.41	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.70	0.32	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.70	0.46	ug/kg	
5103-74-2	gamma-Chlordane	ND	0.70	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.70	0.55	ug/kg	
72-54-8	4,4'-DDD	3.5	0.70	0.36	ug/kg	
72-55-9	4,4'-DDE	2.4	0.70	0.42	ug/kg	
50-29-3	4,4'-DDT	9.4	0.70	0.52	ug/kg	
72-20-8	Endrin	ND	0.70	0.36	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.70	0.64	ug/kg	
7421-93-4	Endrin aldehyde	ND	0.70	0.67	ug/kg	
959-98-8	Endosulfan-I	ND	0.70	0.34	ug/kg	
33213-65-9	Endosulfan-II	ND	0.70	0.46	ug/kg	
76-44-8	Heptachlor	ND	0.70	0.43	ug/kg	
1024-57-3	Heptachlor epoxide	ND	0.70	0.35	ug/kg	
72-43-5	Methoxychlor	ND	1.4	0.50	ug/kg	
53494-70-5	Endrin ketone	ND	0.70	0.46	ug/kg	
8001-35-2	Toxaphene	ND	18	8.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	40%		23-137%
877-09-8	Tetrachloro-m-xylene	48%		23-137%
2051-24-3	Decachlorobiphenyl	53%		22-160%
2051-24-3	Decachlorobiphenyl	68%		22-160%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3G61599.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8081B SW846 3545A	Percent Solids:	86.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G61599.D	1	01/31/12	VDT	01/21/12	OP54360	G3G2224
Run #2							

	Initial Weight	Final Volume
Run #1	17.3 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.67	0.34	ug/kg	
319-84-6	alpha-BHC	ND	0.67	0.50	ug/kg	
319-85-7	beta-BHC	ND	0.67	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.67	0.39	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.67	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.67	0.44	ug/kg	
5103-74-2	gamma-Chlordane	ND	0.67	0.34	ug/kg	
60-57-1	Dieldrin	ND	0.67	0.52	ug/kg	
72-54-8	4,4'-DDD	ND	0.67	0.34	ug/kg	
72-55-9	4,4'-DDE	ND	0.67	0.40	ug/kg	
50-29-3	4,4'-DDT	ND	0.67	0.49	ug/kg	
72-20-8	Endrin	ND	0.67	0.34	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.67	0.61	ug/kg	
7421-93-4	Endrin aldehyde	ND	0.67	0.64	ug/kg	
959-98-8	Endosulfan-I	ND	0.67	0.33	ug/kg	
33213-65-9	Endosulfan-II	ND	0.67	0.44	ug/kg	
76-44-8	Heptachlor	ND	0.67	0.41	ug/kg	
1024-57-3	Heptachlor epoxide	ND	0.67	0.33	ug/kg	
72-43-5	Methoxychlor	ND	1.3	0.47	ug/kg	
53494-70-5	Endrin ketone	ND	0.67	0.44	ug/kg	
8001-35-2	Toxaphene	ND	17	8.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		23-137%
877-09-8	Tetrachloro-m-xylene	103%		23-137%
2051-24-3	Decachlorobiphenyl	129%		22-160%
2051-24-3	Decachlorobiphenyl	141%		22-160%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 2G62829.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8082A SW846 3545A	Percent Solids:	82.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G62829.D	1	01/23/12	AZ	01/21/12	OP54359	G2G2270
Run #2							

	Initial Weight	Final Volume
Run #1	17.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	9.2	ug/kg	
11104-28-2	Aroclor 1221	ND	35	21	ug/kg	
11141-16-5	Aroclor 1232	ND	35	18	ug/kg	
53469-21-9	Aroclor 1242	ND	35	11	ug/kg	
12672-29-6	Aroclor 1248	ND	35	11	ug/kg	
11097-69-1	Aroclor 1254	ND	35	16	ug/kg	
11096-82-5	Aroclor 1260	ND	35	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	40%		22-141%
877-09-8	Tetrachloro-m-xylene	38%		22-141%
2051-24-3	Decachlorobiphenyl	28%		18-163%
2051-24-3	Decachlorobiphenyl	48%		18-163%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 2G62830.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
Method:	SW846 8082A SW846 3545A	Percent Solids:	86.0
Project:	Ramapo, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G62830.D	1	01/23/12	AZ	01/21/12	OP54359	G2G2270
Run #2							

	Initial Weight	Final Volume
Run #1	17.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	8.7	ug/kg	
11104-28-2	Aroclor 1221	ND	33	20	ug/kg	
11141-16-5	Aroclor 1232	ND	33	17	ug/kg	
53469-21-9	Aroclor 1242	ND	33	11	ug/kg	
12672-29-6	Aroclor 1248	ND	33	10	ug/kg	
11097-69-1	Aroclor 1254	ND	33	16	ug/kg	
11096-82-5	Aroclor 1260	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		22-141%
877-09-8	Tetrachloro-m-xylene	98%		22-141%
2051-24-3	Decachlorobiphenyl	67%		18-163%
2051-24-3	Decachlorobiphenyl	116%		18-163%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	86.6
Project:	Ramapo, NY		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.50	D004	5.0	0.50	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Barium	< 1.0	D005	100	1.0	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Cadmium	< 0.0050	D006	1.0	0.0050	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Lead	< 0.50	D008	5.0	0.50	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	01/25/12	01/25/12	JW	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.50	D010	1.0	0.50	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	01/24/12	01/27/12	VC	SW846 6010C [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA27835
(2) Instrument QC Batch: MA27847
(3) Prep QC Batch: MP62330
(4) Prep QC Batch: MP62351

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)

Accutest Laboratories

Report of Analysis

Client Sample ID:	FB-01192012		
Lab Sample ID:	JA97463-2	Date Sampled:	01/19/12
Matrix:	AQ - Field Blank Soil	Date Received:	01/19/12
		Percent Solids:	n/a
Project:	Ramapo, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Antimony	< 6.0	6.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Arsenic	< 3.0	3.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Barium	< 200	200	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Beryllium	< 1.0	1.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Cadmium	< 3.0	3.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Calcium	< 5000	5000	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Chromium	< 10	10	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Cobalt	< 50	50	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Copper	< 10	10	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Iron	< 100	100	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Lead	< 3.0	3.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Magnesium	< 5000	5000	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Manganese	< 15	15	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Mercury	< 0.20	0.20	ug/l	1	01/24/12	01/24/12	JW	SW846 7470A [2]	SW846 7470A [3]
Nickel	< 10	10	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Potassium	< 10000	10000	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Selenium	< 10	10	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Silver	< 10	10	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Sodium	< 10000	10000	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Thallium	< 2.0	2.0	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Vanadium	< 50	50	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]
Zinc	< 20	20	ug/l	1	01/21/12	01/23/12	VC	SW846 6010C [1]	SW846 3010A [4]

(1) Instrument QC Batch: MA27821
(2) Instrument QC Batch: MA27828
(3) Prep QC Batch: MP62220
(4) Prep QC Batch: MP62380

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-09(0-0.5)		
Lab Sample ID:	JA97463-4	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	90.0
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	7470	53	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Antimony	< 2.1	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Arsenic	3.9	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Barium	519	21	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Beryllium	< 0.21	0.21	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.53	0.53	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Calcium	1560	530	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Chromium	11.1	1.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cobalt	< 5.3	5.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Copper	11.1	2.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Iron	13600	53	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Lead	114	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Magnesium	1910	530	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Manganese	253	1.6	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Mercury	< 0.036	0.036	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [4]
Nickel	9.6	4.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Potassium	< 1100	1100	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 2.1	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.53	0.53	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Sodium	< 1100	1100	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Thallium	< 1.1	1.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Vanadium	15.1	5.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Zinc	47.4	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Prep QC Batch: MP62387
(4) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-09(14.5-15)		
Lab Sample ID:	JA97463-5	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	92.3
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	4690	51	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Antimony	< 2.0	2.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Arsenic	2.0	2.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Barium	79.5	20	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Beryllium	< 0.20	0.20	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.51	0.51	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Calcium	1550	510	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Chromium	9.9	1.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cobalt	< 5.1	5.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Copper	6.0	2.6	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Iron	12500	51	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Lead	33.3	2.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Magnesium	1900	510	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Manganese	221	1.5	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Mercury	< 0.034	0.034	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [4]
Nickel	8.3	4.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Potassium	1150	1000	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 2.0	2.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.51	0.51	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Sodium	< 1000	1000	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Thallium	< 1.0	1.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Vanadium	14.0	5.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Zinc	29.8	2.0	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Prep QC Batch: MP62387
(4) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-10(14-14.5)		
Lab Sample ID:	JA97463-6	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	60.8
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	10700	84	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Antimony	< 3.4	3.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Arsenic	< 3.4	3.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Barium	44.5	34	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Beryllium	0.37	0.34	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.84	0.84	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Calcium	3440	840	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Chromium	24.9	1.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cobalt	< 8.4	8.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Copper	< 4.2	4.2	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Iron	6480	84	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Lead	5.6	3.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Magnesium	1360	840	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Manganese	63.3	2.5	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Mercury	< 0.052	0.052	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [4]
Nickel	6.8	6.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Potassium	< 1700	1700	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 3.4	3.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.84	0.84	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Sodium	< 1700	1700	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Thallium	< 1.7	1.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Vanadium	16.5	8.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Zinc	19.6	3.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Prep QC Batch: MP62387
(4) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-17(0-0.5)		
Lab Sample ID:	JA97463-7	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	71.4
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	10500	69	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Antimony	< 2.8	2.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Arsenic	2.9	2.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Barium	74.9	28	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Beryllium	< 0.28	0.28	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.69	0.69	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Calcium	6150	690	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Chromium	8.6	1.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Cobalt	9.8	6.9	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Copper	27.4	3.5	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Iron	21700	69	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Lead	74.2	2.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Magnesium	5360	690	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Manganese	369	2.1	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Mercury	0.054	0.047	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [4]
Nickel	11.7	5.5	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Potassium	< 1400	1400	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 2.8	2.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.69	0.69	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Sodium	< 1400	1400	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Thallium	< 1.4	1.4	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Vanadium	49.6	6.9	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]
Zinc	72.4	2.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Prep QC Batch: MP62387
(4) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	82.0
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	8290	58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Antimony	49.4	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Arsenic	19.4	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Barium	3730	23	mg/kg	1	01/23/12	01/31/12	BL	SW846 6010C [4]	SW846 3050B [5]
Beryllium	< 0.23	0.23	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Cadmium	2.3	0.58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Calcium	2040	580	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Chromium	64.1	1.2	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Cobalt	< 5.8	5.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Copper	49.1	2.9	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Iron	18300	58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Lead	2540	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Magnesium	2150	580	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [3]	SW846 3050B [5]
Manganese	364	1.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Mercury	0.072	0.039	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [6]
Nickel	25.9	4.6	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Potassium	< 1200	1200	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.3	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Silver	1.3	0.58	mg/kg	1	01/23/12	01/31/12	BL	SW846 6010C [4]	SW846 3050B [5]
Sodium	< 1200	1200	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Thallium	< 1.2	1.2	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Vanadium	19.4	5.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]
Zinc	531	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Instrument QC Batch: MA27847
(4) Instrument QC Batch: MA27862
(5) Prep QC Batch: MP62387
(6) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	86.0
Project:	Ramapo, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	7880	58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Antimony	< 2.3	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Arsenic	< 2.3	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Barium	58.2	23	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Beryllium	< 0.23	0.23	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.58	0.58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Calcium	2480	580	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Chromium	13.4	1.2	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Cobalt	< 5.8	5.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Copper	4.3	2.9	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Iron	7310	58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Lead	6.8	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Magnesium	1490	580	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [3]	SW846 3050B [4]
Manganese	79.8	1.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.038	0.038	mg/kg	1	01/25/12	01/25/12	MP	SW846 7471B [1]	SW846 7471B [5]
Nickel	6.4	4.7	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Potassium	< 1200	1200	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.3	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Silver	< 0.58	0.58	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Sodium	< 1200	1200	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Thallium	< 1.2	1.2	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Vanadium	14.6	5.8	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]
Zinc	20.4	2.3	mg/kg	1	01/23/12	01/26/12	VC	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA27834
(2) Instrument QC Batch: MA27838
(3) Instrument QC Batch: MA27847
(4) Prep QC Batch: MP62387
(5) Prep QC Batch: MP62420

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-WC-01		
Lab Sample ID:	JA97463-3	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	86.6
Project:	Ramapo, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.74 NC J		su	1	01/30/12	SA	SW846 CHAP7
Cyanide Reactivity	< 12	12	mg/kg	1	01/29/12 15:22	VA	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	01/30/12	SA	SW846 CHAP7/ASTM D93
Solids, Percent	86.6		%	1	01/24/12	BM	SM18 2540G
Sulfide Reactivity	< 120 J	120	mg/kg	1	01/30/12	SS	SW846 CHAP7/9034

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-16(0-0.5)		
Lab Sample ID:	JA97463-8	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	82.0
Project:	Ramapo, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.29	0.29	mg/kg	1	01/20/12 14:36	JA	SW846 9012 M/LACHAT
Solids, Percent	82		%	1	01/27/12	BM	SM18 2540G

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OU3-SB-13(14.5-15)		
Lab Sample ID:	JA97463-9	Date Sampled:	01/19/12
Matrix:	SO - Soil	Date Received:	01/19/12
		Percent Solids:	86.0
Project:	Ramapo, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	<0.26	0.26	mg/kg	1	01/26/12 16:17	JJY	SW846 9012 M/LACHAT
Solids, Percent	86		%	1	01/27/12	BM	SM18 2540G

RL = Reporting Limit