Air Force Center for Environmental Excellence US Army Corps of Engineers Air Force Center for US Army Corps of Engineers Engineering and the Environment Seneca Army Depot Activity **Romulus**, New York 00694 33 **FOR SEAD-16 AND** S **ENECA ARMY Seneca Army Depot Activity Romulus, New York DEPOT ACTIVITY** COMPLETION SEAD-17 Seneca Army Depot Activity REPORT **FINAL CONSTRUCTION COMPLETION REPORT** FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY **FINAL** AFCEE CONTRACT NO. FA8903-04-D-8675 TASK ORDER NO. 0031 CDRL A001D PARSONS PARSONS EPA SITE ID# NY0213820830 **SEPTEMBER 2008** NY SITE ID# 8-50-006 SEPTEMBER 2008

Air Force Center for **Environmental Excellence US Army Corps of Engineers Air Force Center for US Army Corps of Engineers Engineering and the Environment** Seneca Army Depot Activity **Romulus**, New York CONSTRUCTION FOR SEAD-16 AND **Seneca Army Depot Activity Romulus**, New York **COMPLETION REPORT** SEAD-17 Seneca Army Depot Activity **FINAL CONSTRUCTION COMPLETION REPORT** FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY **FINAL** AFCEE CONTRACT NO. FA8903-04-D-8675 TASK ORDER NO. 0031 CDRL A001D PARSONS EPA SITE ID# NY0213820830 NY SITE ID# 8-50-006 SEPTEMBER 2008 SEPTEMBER 2008

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FINAL

CONSTRUCTION COMPLETION REPORT

FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY, ROMULUS, NY

Prepared for: AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT BROOKS CITY-BASE, TEXAS

and

SENECA ARMY DEPOT ACTIVITY

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Contract Number FA8903-04-D-8675 Task Order 0031, CDRL A001D EPA Site ID# NY0213820830 NY Site ID# 8-50-006

September 2008

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the RA at SEAD-16 and SEAD-17. Construction activities began with mobilization of personnel and equipment by Parsons and the selected earthwork subcontractor, S. St. George Enterprises, Inc of Fredonia, New York, on July 9, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and S. St. George demobilized from the sites. All construction activities that took place at SEDA were documented in daily reports (Appendix A).

3.1 SITE PREPARATION

The field crew and equipment were mobilized to the site on July 9, 2007. Site preparation included the following activities:

- Mobilization; and
- Removal of the fence along the north and west side of SEAD-17.

3.1.1 Mobilization

The field crew and the equipment were mobilized to the site on July 9, 2007. Equipment included one dozer, two excavators, a mini excavator, a Bobcat, a skid steer, a water truck, a fuel truck, and a mechanics truck.

3.1.2 Removal of SEAD-17 Fencing

To facilitate access by the excavators to the SEAD-17 excavation area, 150 linear feet of fence was removed along the west side of SEAD-17. In addition, 30 linear feet of fence was removed on the north side of the access road to facilitate truck access to SEAD-17. The fence posts were pulled from the ground. The fence fabric was rolled back and secured.

3.2 HEALTH AND SAFETY DURING CONSTRUCTION

At the start of each work day, all on-site workers attended a daily health and safety briefing conducted by the SHSO. Site visitors were required to review the project Health and Safety Plan (Parsons, 2005; 2006b) and attend a site-specific health and safety briefing. These "tailgate" meetings were mandatory for all subcontractors and Parsons personnel working at the site. At each meeting, the SHSO discussed personal protective equipment (PPE) needs for that day and any potential hazards associated with the day's scheduled activities. The topics covered and all attendees at each daily briefing were documented, and the records were stored by the SHSO in the project files.

Dust monitoring for lead was conducted during the work at SEAD-16 and SEAD-17 in accordance with the project Health and Safety Plan (Parsons, 2006b), which included a Lead Monitoring Plan. An IOM personal sampler was used to monitor for lead, and samples were submitted to Galson Laboratories in East Syracuse, New York for subsequent analysis. All personal lead monitoring sample results indicated that lead levels were well below action levels.

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3.3 DUST MONITORING

Dust monitoring was conducted during the work using two Thermo Anderson DR-4000 dust monitors. Perimeter air monitoring of the work area for dust was conducted during the excavations. The dust monitor provided real time perimeter measurements. The air monitoring equipment was positioned downwind of the work areas. The dust monitors were set up from July 9 through July 18, 2007, during which time the majority of the excavation work at SEAD-16 and SEAD-17 was completed. It was determined that dust was not a problem at the sites based on the low air monitoring readings. Therefore, air monitoring was discontinued during the additional excavation activities performed during August.

The dust monitoring record is included in Appendix C.

3.4 SEAD-16

3.4.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation areas were delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. The soil was excavated to a depth of 1 foot, except for two areas, Grids E5 and D8, which were planned to be excavated to depths of 2 feet and 3 feet, respectively, based on RI subsurface soil data. Excavation began on July 10, 2007 and the initial excavation, referred to as the Phase I excavation, was completed on July 18, 2007. **Drawing C-4** shows the excavation area at SEAD-16. Bedrock was encountered at 2 feet at the subsurface excavation located between the tracks in Grid E5, shown in **Drawing C-4**. Excavated soil was temporarily staged at the southern end of the excavation area at the southwest corner of Building S-311, as shown in **Drawing C-2**. Excavated material was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. Soil excavated during Phase I activities at SEAD-16 totaled 1,626 cy, and is summarized in **Table 3-1**. Photographs of the excavation activity are included in **Appendix D**.

General Confirmatory Sampling Collection Details

As general requirements at both SEAD-16 and SEAD-17, confirmatory samples were collected from the base ("floor") and perimeter of the excavation to confirm that soil with concentrations above the cleanup goals was excavated and removed from the sites. Floor and perimeter samples were collected at a frequency of 1 sample every 2,500 sf or less of excavation floor and 1 sample every 50 lf or less of excavation perimeter, respectively. In the event that an excavation extended 2 or more feet below the original ground surface, sidewall samples were collected instead of perimeter samples.

Field duplicates were collected to meet the quality assurance/quality control (QA/QC) requirements established in the Final Work Plan. Samples were analyzed for specific metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) identified in the ROD based on metals that contribute potential human health risk to the site; and samples collected from Grids G4 and G5 were also analyzed for cPAHs since they were detected at that location during the RI (as discussed in **Section 1.3**). Samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of selected metals (antimony,

arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B and mercury by USEPA SW846 Method 7471A. Samples collected from Grids G4 and G5 at SEAD-16 were also submitted for analysis of cPAHs by USEPA SW846 Method 8270C. The cleanup goals (listed in **Table 2-1**) for cPAHs and metals at SEAD-16 are as follows:

Compound	Units	Cleanup Goal
cPAHs		
Benzo(a)pyrene Toxicity Equivalence	mg/kg	10
Metals		
Antimony	mg/kg	41
Arsenic	mg/kg	21.5
Cadmium	mg/kg	60
Copper	mg/kg	10,000
Lead	mg/kg	1,250
Mercury	mg/kg	5.7
Thallium	mg/kg	6.7
Zinc	mg/kg	10,000

All samples were collected following procedures outlined in the Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (Parsons, 2006a). A 50-foot by 50-foot grid matrix was laid out over the excavation area as a means of tracking the locations of confirmatory samples; the grids are shown in **Drawing C-4**. Floor and perimeter samples were collected as grab samples from unique locations, at a depth between 0 and 2 inches below ground surface. Floor samples were collected from the center of each grid, unless biased by field observations or site features. Sidewalls were collected as grab samples from a depth halfway between the ground surface and the base of excavation.

The analytical results of each field duplicate pair were averaged to produce a single result to represent the level at the sample location. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states that: "Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Analytical data for all confirmatory samples are provided in **Appendix E**. The chain-of-custodies for the confirmatory samples are included in **Appendix F** and the case narratives for laboratory sample delivery groups are presented in **Appendix G**. All of the analytical results were validated in a manner that is consistent with procedures defined in the USEPA's National Functional Guidelines for Organic Data Review and consistent with USEPA Region 2's Standard Operating Procedures (SOPs). A data validation report is provided in **Appendix H**.

Phase I Sampling

After the Phase I excavation, seven perimeter samples (plus one field duplicate), 33 floor samples (plus two field duplicates), and eight sidewall samples (plus one field duplicate) were collected between July 18, 2007 and July 20, 2007. Analytical results from five Phase I samples (three floor samples and two

sidewall samples) exceeded the cleanup goal for antimony (41 mg/kg), and four samples (three floor samples and one sidewall sample) exceeded the lead cleanup goal (1,250 mg/kg). The failed sample locations are shown in **Figure 3-1** and listed below.

Summary of Phase I Confirmatory Soil Samples with Exceedances of Cleanup Goals			
	Antimony	Lead	
Sample ID	(CUG = 41 mg/kg)	(CUG = 1,250 mg/kg)	
16EXFL-B8-02	67.3	1370	
16EXFL-C9-01	230	6410	
16EXFL-D8-01	95.2	4090	
16EXSW-D8-05	68.1	3380	
16EXSW-D8-02	191	*	

* The lead concentration at 16EXSW-D8-02 did not exceed 1,250 mg/kg.

Floor sample 16EXFL-B8-02 was collected from Ditch #1; a floor sample collected upgradient of the failed 16EXFL-B8-02 met the cleanup goals. Floor sample 16EXFL-C9-01 was collected from the center of Grid C9. Samples 16EXFL-D8-01, 16EXSW-D8-01, and 16EXSW-D8-05 were collected from the subsurface excavation area in Grid D8 located southeast of Building S-311 next to the ramp. Floor sample 16EXFL-D8-01 was collected from the center of the 2-foot excavation area. Sidewall sample 16EXSW-D8-05 was collected at sample location 16EXSW-D8-01 (duplicate of sample ID 16EXSW-D8-01) located on the northwest side of the deep excavation close to Building S-311 at a depth approximately 1 below ground surface; sidewall sample 16EXSW-D8-02 was collected on the east side of the deep excavation at a depth 1 below ground surface.

All confirmatory samples met the cleanup goals for the other metals, and all samples analyzed for cPAHs achieved the cPAH cleanup goal.

On July 18, 2007, five split soil samples (plus one field duplicate) were collected by USEPA representatives at the same locations as five of the confirmatory samples submitted to TestAmerica Laboratories, Inc. by Parsons and the Army. The USEPA samples were analyzed by the USEPA and are not part of the Army's dataset. The analytical results for the samples collected and analyzed by the USEPA varied from the analytical results for the split samples analyzed by TestAmerica. The analytical results for the split samples analyzed by TestAmerica. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher value for samples 16EXPR-C10-02 and 16EXPR-F9-02 was greater than 1,250 mg/kg for lead (1,360 mg/kg and 2,940 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids C10 and F9, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed at SEAD-16 between July 30, 2007 and August 2, 2007 to remove soil associated with the five failed samples and two USEPA split samples, shown in **Drawing C-4**. The details of the Phase II excavation were as follows:

- (1) Ditch #1, running through Grids B8, C7, and C8, was excavated to bedrock so that the total depth of excavation in Ditch #1 extended approximately 2 feet below the original ground surface, to remove the soil associated with high levels of antimony and lead found in floor sample 16EXFL-B8-02;
- (2) An additional foot of soil was excavated from the entire Grid C9 area, so that the total depth of excavation in this grid extended to 2 feet below ground surface, due to the results of floor sample 16EXFL-C9-01, which exceeded the cleanup goals for antimony and lead;
- (3) The limits of excavation extended laterally to include a 1-foot excavation in a portion of Grid C10 and a portion of Grid F9 due to the higher of the two sample results from the split samples (16EXPR-C10-02 and 16EXPR-F9-02) exceeding the cleanup goal for lead;
- (4) The subsurface excavation in Grid D8 was expanded vertically and horizontally due to the failure of soil at two sidewall sample locations (16EXSW-D8-01 and 16EXSW-D8-02) and the floor sample (16EXFL-D8-01) to meet the cleanup goals. The excavation extended northeast of the original area up to the building ramp, and 1-foot of soil was scraped off the bottom of the deep excavation and bedrock was encountered. Any residual soil in the excavation area was removed from the area along the building ramp or Building S-311 until both of those surfaces were scraped clean and exposed. The total depth of excavation in this area reached 3 feet.

An additional 235 cy of soil was removed from SEAD-16 during the Phase II excavation activities. All excavation activities were completed by August 2, 2007. A total of 1,862 cy of soil was excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the final excavation areas and the final depths of excavations. Phase II confirmatory samples were collected after the completion of the Phase II excavation.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on July 30, 2007 and August 2, 2007 to confirm that soil remaining on-site met the cleanup goals for metals. Four floor samples (plus one field duplicate), two perimeter samples, and one sidewall sample (plus one field duplicate) were collected and analyzed by TestAmerica for targeted metals (antimony, arsenic, cadmium, copper, lead, thallium, zinc, and mercury) to confirm that the removal action was complete. The four floor samples were collected to confirm that the base of newly excavated areas met the cleanup goals. Phase II confirmatory samples were collected in the following locations, shown in **Drawing C-4**:

- Floor sample 16EXFL-C9-02 was collected in the center of Grid C9 after the excavation of an additional foot of soil;
- Floor sample 16EXFL-C10-01 was collected from the base of Grid C10 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-C10-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid C10;

- Floor samples 16EXFL-F9-01 and field duplicate 16EXFL-F9-02 were collected at the base of Grid F9 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-F9-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid F9;
- Floor sample 16EXFL-D8-02 was collected from the base of the expanded excavation in Grid D8 adjacent to the Building S-311 ramp, and the original excavation around SB16-5 in Grid D8 was excavated to bedrock; and
- Sidewall sample 16EXSW-D8-06 (along with field duplicate 16EXSW-D8-07) was collected at a location along the southern wall of the excavation close to the building ramp; a sample was collected at this location rather than along the ramp (where the failed sample 16EXSW-D8-02 was collected) since the ramp was scraped clean during the Phase II excavation and no soil remained to sample.

Phase II samples were not collected from the sidewall of Building S-311, since the foundation of the building was exposed and no soil remained to be sampled. A floor sample was not collected from the base of Ditch #1 since the Phase II excavation removed the soil in the ditch to bedrock, and no soil remained in the ditch to sample.

All Phase II samples met the cleanup goals.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the antimony and/or lead cleanup goals. Therefore, the data for the samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3-2**. The locations of all final confirmatory samples are shown in **Drawing C-4**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-1**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter/Sidewall	Frequency	No. of	No. of Final	No. of QA/QC
	Length of	Requirement	Samples	Samples	Samples
	Excavation Area		Required	Collected	Collected ¹
Floor	41,616 sf	1 per 2,500	17	34 ²	3
Samples		sf			
Perimeter	1,366 lf	1 per 50 lf	28	35	3
Samples					
Sidewall	152 lf	1 per 50 lf	3	7	1
Samples					

1. QA/QC samples included collection of a field duplicate.

2. The number of final floor samples collected includes the collection of ditch samples and floor samples in partial grids.

All excavation activities were completed on August 14, 2007. A total of 1,862 cy of soil were excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the extent and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.4.2 Water Removal

The basement of Building S-311 contained approximately 2 to 3 feet of standing water at the time field work began. One sample of the water (16WWT16-0703) was collected on July 3, 2007 prior to the start of field activities. The sample was submitted to TestAmerica Laboratories, Inc. for analysis of volatile organic compounds (VOCs) by USEPA SW846 Method 8260B, semivolatile organic compounds (SVOCs) by USEPA SW846 Method 8270C, metals by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7470A. Metals were the only analytes detected in the sample; analytical results are provided in **Appendix J**. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill.

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

3.4.3 Unexploded Ordnance

SEAD-16, the Abandoned Deactivation Furnace, was historically used for the demilitarization of various small arms munitions via a heated rotating steel kiln. SEAD-16 has been inactive and abandoned since the 1960s and the presence of materials presenting potential explosive hazard (MPPEH) and propellant residue in pipes/equipment at the site was considered possible. An Unexploded Ordnance (UXO) technician was on-site to provide construction support as a safety measure during excavation activities.

Small arms munitions scrap removed from the basement of Building S-311 was spread out for visual inspection and classification by the UXO technician prior to transport off-site for disposal; no MPPEH was found as only small arms casing and bullets were discovered in material recovered from and inside the building. Pipes (approximately 200 linear feet) and equipment (cyclone, bag filter, and vacuum pump) potentially contaminated with propellant were removed from SEAD-16 and transported to the Open Burn Ground in the northwest portion of SEDA for heat treatment in a burn tray.

3.4.4 Building Demolition

Debris was removed from inside Building S-311, the Abandoned Deactivation Furnace, and Building 366, the Process Support Building, and the floors were swept to reduce potential dust mobilization during demolition activities. As part of a separate effort completed under a different contract, both of these buildings were demolished and removed from the site due to safety concerns.

3.4.5 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated non-

hazardous soil at Ontario County Landfill in Flint, NY. A decontamination area was setup adjacent to the stockpile location to facilitate the loading and exiting of haul trucks from the site. Truck load out was completed by August 2, 2007. A total of 2,532 tons (101 loads) of soil were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.4.6 Site Restoration

The excavated areas that extended to 2-feet below ground surface or greater and the areas between the railroad tracks were backfilled with clean bank-run gravel provided by Riccelli. One sample (16FM-SPX-01) was collected from the off-site borrow source material (clean bank-run gravel) and submitted to TestAmerica for analysis of VOCs by USEPA SW846 Method 8260B, cPAHs by USEPA SW846 Method 8270C, selected metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7471A. The analytical results met the acceptance criteria for borrow source material detailed in the Final Work Plan.

- VOCs below NYSDEC Unrestricted Soil Cleanup Objectives (Table 375-6.8(a));
- cPAHs below site cleanup goals; and
- Metals below site cleanup goals.

Analytical results of the clean bank-run gravel are presented in Appendix L.

The entire site was graded to promote positive drainage. Re-seeding was not required since the area was not originally vegetated. The crew demobilized from the site on August 13, 2007.

3.5 SEAD-17

3.5.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation area was delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. Excavation began on July 10, 2007 and the initial excavation to a depth of 1 foot, referred to as the Phase I excavation, was completed on July 17, 2007. **Drawing C-5** shows the final excavation area at SEAD-17. Excavated soil was temporarily staged at the northern edge of the excavation area adjacent to the gravel access road entering the site northeast of Building 367. Excavated soil was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. All Phase I excavated material totaled 1,995 cy, as is summarized in **Table 3-1**.

As discussed in **Section 2.11**, an area around Grid E6 with high levels of leachable lead was delineated based on the extensive TCLP metals sampling results. The soil in this area was excavated and mixed with 6.8 tons of Portland cement provided by Riccelli Enterprises, Inc on July 13, 2007. The excavator was used to spread and mix the cement with the impacted soil. A sample of the stabilized material, DS-17-18, was collected and submitted to TestAmerica for analysis of TCLP metals. The lead TCLP result for DS-17-18, 14.6 mg/L, exceeded the TCLP limit of 5 mg/L. As a result, on July 18, 2007 an additional 3.4

tons of Portland cement was mixed with the cement/soil mixture using the excavator. A new disposal characterization sample, 17-DS-19, was collected and submitted to TestAmerica for TCLP lead analysis. The analytical results showed that the lead level (0.0468 mg/L) was below the TCLP limit, and the Portland cement had stabilized the lead in the soil to reduce its leachability. The stabilized material was suitable for off-site disposal as non-hazardous waste.

Photographs of the excavation activity are shown in Appendix D.

Phase I Sampling

The general sample collection information presented above in **Section 3.4.1** applies to the work completed at SEAD-17.

During the Phase I excavation, seven perimeter samples and 36 floor samples (plus two field duplicates) were collected between July 13 and July 18, 2007 and submitted to TestAmerica for analysis of selected metals. Two Phase I floor samples exceeded the cleanup goal for lead (1,250 mg/kg): lead was detected at 17EXFLE5-01 and 17EXFL-F2-01 with concentrations 1,910 J mg/kg and 1,500 mg/kg, respectively. The failed sample locations are shown in **Figure 3-2**. All other samples met the cleanup goals for metals.

On July 18, 2007 five split soil samples (plus one field duplicate) were collected by USEPA representatives and submitted for analysis by the USEPA. The analytical results for the samples the USEPA collected varied from the analytical results for the split samples analyzed by TestAmerica. The table below summarizes the validated TestAmerica analytical results and the USEPA analytical results for the split samples. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher values for samples 17EXFL-G3-03 and 17EXPR-D2-02 were greater than 1,250 mg/kg for lead (2,210 mg/kg and 2,300 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids D2 and G3, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed between July 30, 2007 and August 2, 2007 to remove 1-foot of soil associated with the two failed samples and two of the USEPA split samples. The Phase II excavation consisted of removing soil in the four following areas, shown in **Drawing C-5**:

- (1) An additional foot of soil was excavated from the floor of Grids E5 and F2, so that the total depth of excavation in these areas reached 2 feet below the original ground surface. This was due to levels of lead detected in floor samples 17EXFL-E5-01 and 17EXFL-F2-01;
- (2) An additional foot of soil located within Grid G3 was excavated so that the total depth of excavation in this area reached 2 feet below the original ground surface. The additional excavation was conducted due to the higher of the pair of sample results from the split sample 17EXFL-G3-03 (USEPA Sample ID 17EXFL-G3-02) exceeding the lead cleanup goal; and
- (3) The excavation area was expanded laterally in Grids D2 and E2 beyond the original excavation boundary to a depth of 1 foot of soil due to the higher of the pair of sample results from the split sample 17EXPR-D2-02 exceeding the lead cleanup goal.

An additional 570 cy of soil was removed from SEAD-17 during the Phase II excavation. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the final excavation areas and the final depths of excavations.

Phase II Sampling

Phase II confirmatory sampling was completed between July 30, 2007 and August 2, 2007 at the areas excavated during Phase II. Five floor samples and one perimeter sample were collected at the following locations:

- Floor sample 17EXFL-D2-01 was collected at Grid D2 at the same location (northing and easting) as excavated sample 17EXPR-D2-01;
- Perimeter sample 17EXPR-D2-03 was collected outside of the new excavation area in Grid D2;
- Floor sample 17EXFL-D6-02 was collected at Grid D6 under the location of the former stockpile of stabilized soil to confirm that all lead contamination was removed;
- Floor sample 17EXFL-E5-02 was collected at the center of Grid E5;
- Floor sample 17EXFL-F2-02 was collected at the center of Grid F2; and
- Floor sample 17EXFL-G3-04 was collected at Grid G3 at the same location (northing and easting) as excavated sample 17EXFL-G3-01.

All Phase II samples met the cleanup goals. All final samples representative of soil remaining on-site met the cleanup goals, shown in **Table 3-3**.

The discussion above details the field activities and the removal of soil associated with samples that failed to meet the lead cleanup goal. Therefore, the data for samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, but are not included in the final confirmatory dataset, presented in **Table 3-3**. The locations of all final confirmatory samples are shown in **Drawing C-5**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-2**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter Length	Frequency	No. of	No. of Final	No. of QA/QC
	of Excavation	Requirement	Samples	Samples	Samples
	Area		Required	Collected	Collected ¹
Floor	69,560	1 per 2,500	28	37	1
Samples		sf			
Perimeter	1396 ft	1 per 50 lf	28	34 ²	1
Samples		-			

1. QA/QC samples included collection of a field duplicate.

2. The number of final perimeter samples includes nine historic RI samples (listed in Section 2.1) to define the limits of excavation.

All excavation activities were completed on August 14, 2007. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the phases and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.5.2 Building Demolition

As part of a separate effort performed under a different contract, both buildings (Building 367 and 311) were demolished. The Army elected to remove these buildings since it was more cost effective to remove them rather than decontaminating the buildings in order to comply with RCRA requirements. The detailed discussion of the building demolition actions can be found in the Building Demolition and Cleaning Report (Parsons, 2008).

3.5.3 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated material at Ontario County Landfill in Flint, NY. A decontamination area was setup at the gate entering SEAD-17 from the north, and a stockpile staging area was setup within the excavation area adjacent to the decontamination area. A total of 10.2 tons of Portland cement was provided by Riccelli Enterprises, Inc. to stabilize the lead contaminated soil prior to disposal as non-hazardous waste off-site. Truck load out was completed by August 2, 2007. A total of 3,540 tons (143 loads) were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.5.4 Site Restoration

The excavation areas that extended to 2 feet or more bgs. were backfilled with clean bank-run gravel provided by Riccelli. Details of the borrow source material sampling are discussed in **Section 3.4.6**. The rest of the site was graded to promote positive drainage. The areas at SEAD-17 that were vegetated prior to the remedial action were seeded to restore the vegetation. The selected seed mixture consisted of the following:

30% Timothy
30% Perennial Ryegrass
15% Alfalfa
10% Red Clover
10% While Clover
5% Ladino Clover

The crew demobilized from the site on August 13, 2007.

3.6 CONSTRUCTION COSTS

The total construction costs for the Remedial Actions at SEAD-16 and SEAD-17 were approximately \$717,300. The cost break down is as follows:

Engineering/Oversight	\$94,000
Construction	\$600,000
Analytical Laboratory	\$23,300

7.0 **REFERENCES**

- Army, United States Environmental Protection Agency (USEPA) Region 2, New York State Department of Environmental Conservation (NYSDEC). 1993. Federal Facilities Agreement (FFA).
- NYSDEC. 2006. Remedial Program Soil Cleanup Objectives. 6 NYCRR Subpart 375-6.
- NYSDEC. 1998 with 2000 and 2004 Addendum. Ambient Water Quality Standard and Guidance Values and Groundwater Effluent Limitations.
- Parsons, 2005. Project Safety Plan and Site-Specific Health and Safety Plan for Remediation of the Seneca Army Depot Activity. Revised Final. October 2005.
- Parsons, 2006a. Generic Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity. Revised Final. July 2006.
- Parsons, 2006b. Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBC II. August 2006.
- Parsons, 2006c. Record of Decision for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17). March 2006.
- Parsons, 2007. Remedial Design Work Plan and Design Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, July 2007.
- Parsons, 2008. Building Demolition and Cleaning Report. August, 2008.
- SEDA, 2006. Land Use Control Remedial Design (LUC RD) Plan for SEADs 27, 66, and 64A. December 2006.
- United States Environmental Protection Agency (USEPA), 2004. Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category.
- United States Environmental Protection Agency (USEPA), 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. October 1999.
- United States Environmental Protection Agency (USEPA) Region 2. Region 2 RCRA and CERCLA Data Validation Standard Operating Procedures (SOPs). On-line resources at http://www.epa.gov/region02/desa/hsw/sops.htm.
- United States Environmental Protection Agency (USEPA) Region 9. 2004. Preliminary Remediation Goals. On-line resources available at <u>http://www.epa.gov/region09/waste/sfund/prg/index.htm</u>, last updated December.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Response to USEPA Comments dated 021208 Draft Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Romulus, New York

Comments Dated: July 10, 2008 (email)

Date of Comment Response: September 09, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: The Army's response to EPA Comment 3 is inadequate. Based on the issues identified in EPA's previous Comment 3 (i.e., concerns over potential low bias in the metals results as well as in the precision and representativeness of the metal results) and the data validation in Appendix H, concerns remain over how accurately the results document that the Record of Decision (ROD) dictated remedial goals have been achieved with the desired certainty. While, the Data Validation Memorandum provides an overview of the data validation, the level of detail is insufficient to ensure the data were properly validated and assessed. Please provide a complete electronic copy of the data package(s) received from the laboratory used by the Army in addition to the information included in Appendix H. Alternatively, please revise the Report to provide a validation memorandum which presents the actual values for each of the QC exceedances observed, a table of all results including those that were rejected and subsequently reanalyzed (e.g., the initial analysis of 16EXPR-G5-01 and 16EXPR-G5-02), a discussion on the differences between the EPA method and the facility's procedures, and a thorough assessment of the impact of the observed QC exceedances on the data.

Response 1: All data collected by Parsons have been validated by chemists according to the EPA Region 2 SOPs (on-line resources available at <u>http://www.epa.gov/region02/qa/documents.htm</u>). The qualifiers were added according to the Region 2 SOPs. The detailed data validation results and discussions including QC exceedance details are presented in Appendix H of the CCR. More specifically:

- Noncompliance matrix spike results are presented in Table H-3.
- LCS exceedance results are presented in Table H-4.
- Noncompliance blank results are presented in Table H-5.
- Duplicate analysis (including field duplicate and laboratory duplicate) %RPD exceedance results are presented in Table H-7.
- Calibration noncompliance results are presented in Table H-8.
- CRDL standard check noncompliance results are listed in Table H-9.
- Serial dilution noncompliance results are summarized in Table H-10.
- Percentage of solids noncompliance results are presented in Table H-11.

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated July 10, 2008 Page 2 of 6

All the affected results (also shown in the above tables) were qualified in accordance with the Region 2 SOPs and Table H-2 summarizes all non-usable results due to the QC exceedances. Although QC non-compliances were observed for the project, the data have all been validated accordingly and non-usable results were not used for project management decision. In other words, all the results used in the CCR for the project management decision are usable according to the Region 2 SOPs, although some are considered "estimated" values. Further, there is no indication of consistent low bias based on the review of the QC data.

In summary, it is the Army's position that there is no evidence the data produced for the project are biased low and the rationales are summarized below:

- The laboratory used for this project (Test American Laboratories, Inc., Amherst, NY) is a certified laboratory for New York State's Contract Laboratory Program, Analytical Services Protocol (administered by NYSDOH).
- The QC data that support the sample results do not suggest that there is a biased low trend.
- The data have been validated in accordance with the EPA Region 2 SOPs.

Although the results for soil confirmation samples reported by the Army's laboratory were generally lower than the EPA split sample results, relative percent difference (RPD) values computed for these paired analyses, exclusive of the results reported by the two laboratories for 16EXPR-F9-02, were less than 120%, which is Region 2's limit for judging whether the duplicate pair data reported by a single laboratory are usable or not. Therefore, with the exception of the results for the questionable sample 16EXPR-F9-02, the noted differences between split sample results obtained would not result in rejection of any of the data. The Army further believes that it is necessary to remind the EPA commenter that the 120% threshold is for duplicate samples that are handled in the same manner and sent to one laboratory for analysis via identical methods; there is no threshold guidance value defined for RPD for interlaboratory comparisons. As such, achieving agreement within the single laboratory duplicate pair RPD threshold value (120%) is a very conservative demonstration of the data acceptability as there are differences between the split pairs regarding analytical operations due to the different laboratories used.

Ultimately, soil associated with questionable sample 16EXPR-F9-02 was excavated and disposed off-site in accordance with the agreement made between the EPA and the Army due to the noted data variation, which called for the larger of the split sample results to be used as the basis of the decision, so the failure of this single sample is no longer of importance. Subsequent to the excavation of soil at location 16EXPR-F9-02, three new samples (a floor sample/duplicate pair, 16EXFL-F9-01/16EXFL-F9-02, 13.5 mg/Kg/10.1 mg/Kg; perimeter sample 16EXPR-F9-03, 8.3 mg/Kg) were collected from the area and analyzed for lead. As is shown above, all lead results surrounding the former location of questionable sample 16EXPR-F9-02 are below the defined cleanup goal for lead.

Further, it is important to note that while the Army's data have been validated, we have not received information from the EPA that indicates that their data were validated beyond the level that is normally done in the laboratory. Without this independent verification of the EPA laboratory results, Parsons and

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated July 10, 2008 Page 3 of 6

the Army believe that it is inappropriate to use the split sample results produced by the EPA lab to criticize the results provided by the Army's laboratory. Parsons and the Army were unable to evaluate the differences between the split sample results because we were not provided the detailed report of the EPA split sample results.

The Army would be glad to submit the original hardcopy data package for your review if requested.

Comment 2: The Army's response to EPA Comment 4 is inadequate. The comment response indicates that the standing water removed from the basement of Building S-311 was pumped into the on-site water truck and used for dust control of soils within the excavation areas at SEAD-16. The analytical results obtained from the analysis of the basement water indicate that it contained concentrations of metals above Maximum Contaminant Levels (MCLs). The described use of the pumped out water was not an EPA authorized use; please revise the Report to indicate this. Once a material considered a waste is removed from its original location, current RCRA regulations require that it be managed as a waste. If reuse/recycling options are to be considered, analytical results need to be available to support the option.

Response 2: The EPA's original comment on the Draft SEAD-16 and SEAD-17 Construction Completion Report is presented below.

"Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix I. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document."

The revision to Section 3.4.2 provided the location where the analytical results for the water were presented within the Draft Final Construction Completion Report (Appendix J) and the response included a comparison to New York State GA Groundwater standards, which indicates that several metals in the standing water were observed at concentrations in excess of GA groundwater standards.

Language incorporated into the Draft Final Completion Report indicating this will be modified to read as follows (Reference last paragraph of Section 3.4.2 of Completion Report):

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

As is indicated in the proposed revised text for the Construction Completion Report, the soil upon which the Building 311 water was used for dust suppression was subsequently excavated and removed from the

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated July 10, 2008 Page 4 of 6

site. The water was not allowed to pond or puddle on the site, and controls were in place to prevent the water from running onto other areas of the greater site.

Confirmatory soil sample results for samples collected from beneath the areas where soils were sprayed and then excavated indicate that there were no exceedances of cleanup goals, so it is not likely that metals entrained or dissolved in the water impacted the underlying soils. Groundwater sampling data collected from SEAD-16 after the completion of the removal action, further suggests that the groundwater underlying the site has not been impacted as a result of this water's use as groundwater concentrations are generally lower now than previously reported during the RI.

As Section 3.4.2 is currently written, there is no claim or representation that the EPA approved of the use of the water for dust suppression. Comment 3: The Army's response to EPA Comment 8 is inadequate. The Army has indicated that when EPA split sample data and the Army's split sample data were compared, it was agreed that the higher of the two values would be used to determine when the ROD required remedial levels had been obtained. However, when Army duplicate data was compared, the two values were averaged, and an EPA citation that is found in the Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, USEPA, 2004 is used as reference for this approach. This stance is inconsistent and unsubstantiated, as EPA guidance for liquid media is not transferable to solids, and National Pollutant Discharge Elimination System (NPDES) data is intended to be averaged over a typical 24-hour discharge period, which is not similar to the remedial conditions at Seneca. Further, the stated Report objectives indicate that data will be compared to the ROD clean-up levels to determine if the remedy is complete, without any reference to averaging the data. Revise the Report so that whenever two data points are available to define site conditions, the higher of the two values is used. If this impacts the determination that the remedial action is complete, revise the Report to indicate where additional excavation and sampling is warranted. It may be necessary to present the results and associated sampling points visually to clearly make this assessment.

Response 3: As has been discussed with all parties (i.e., EPA, NYSDEC, NYSDOH) repeatedly during the course of the CERCLA-related activities at the Seneca Army Depot, it is the Army position that decisions relative to completion of work are based on site-wide assessments and determinations, and not on the basis of individual sample results. This has been, and will continue to be, the Army's process and basis of action, and it is our belief that this approach and process is reasonable and appropriate, and compliant with the requirements of CERCLA.

The lead in soil cleanup goal for SEAD-17 was 1250 mg/Kg. Sixty-four soil samples were collected, characterized, and qualified as appropriate during the confirmation sampling, and these samples were used as the basis of the Army's decisions made at SEAD-17. These samples were collected from 62 locations, with sample/duplicate pairs being collected at two locations. After reflecting on the EPA's comment, the Army believes that there are four alternative ways that the available data could have been evaluated and presented. These are summarized below:

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated July 10, 2008 Page 5 of 6

- 1. All 64 data points used;
- 2. Data from all 62 locations considered, with the maximum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach specified in the EPA's comment);
- 3. Data from all 62 locations considered, with the minimum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations;
- 4. Data from all 62 locations considered, with the average result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach used by the Army).

Description	Minimum Lead Concentration Detected at SEAD-17 (mg/Kg)	Maximum Lead Concentration Detected at SEAD-17 (mg/Kg)	Average Lead Concentration Detected at SEAD-17 (mg/Kg)	95 th UCL Concentration of Lead Detected at SEAD-17 (mg/Kg)
Approach 1: 64 samples collected, all data points considered	4.8	1540	350.5	643.7
Approach 2: 62 data points (use MAXIMUM value for sample/duplicate pairs) EPA approach	4.8	1540	350	648.9
Approach 3: 62 data points (use MINIMUM value for sample/duplicate pairs) EPA approach	4.8	1120	336.5	611.9
Approach 4: 62 data points (use AVERAGE value for sample/duplicate pairs) Army approach	4.8	1121	343.2	627.5

Summary results for each of these alternative approaches are presented below:

Regardless of the data analysis and assessment approach that was used for the identified dataset, it is the Army's contention that the lead cleanup goal has been achieved on a site-wide basis. In each case, the 95th UCL value for lead in soil is roughly half of the cleanup goal specified. Under two approaches, the maximum value reported exceeds the cleanup goal. Examination of the full confirmatory soil data set for SEAD-17 shows that the highest value is 1,540 "J" mg/Kg, and the next highest value is 1,120 mg/Kg. The presence of this lone value above the cleanup goal suggests that there is no wide-spread problem at the site, and in fact, the duplicate associated with the sample value of concern further supports this belief, as the value of lead reported for it was 702 "J" mg/Kg. Both of the reported values reported for this

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated July 10, 2008 Page 6 of 6

location are equally likely to be correct, and as such, the best one can do within reason is to presume that the real level of lead lies somewhere in the middle (e.g., at the average concentration). In the Army's opinion, the degree of variation shown at this one location is more suggestive of soil heterogeneity rather than an indication of a possible wide-spread contaminated zone at the site. Simply put, data from the other sixty-one locations does not support this fear, as they are all lower than the cleanup goal.

The EPA's approach (see Approach 2 above) which uses only the maximum value from sample/duplicate pairs skews the assessment of what is presented on a site-wide and a location-by-location basis. Approach 3 also skews the site-wide and location-by-location assessment of the data, but in this case to the opposite pole. Approach 1 gives more credence to the results found at two locations than to the other 60 locations that are within the site's dataset, and as such, one could argue that this approach also skews the analysis. The approach selected by the Army gives equal weight to all sample locations within the dataset, and in our opinion, produces a fair representation of what is present on a site-wide basis. Under the Army's approach, results from each individual location (i.e., 62 locations) in the SEAD-17 area affected were compared to the cleanup value, and data from all of the locations were found to be lower than the goal.

As is currently documented in the Construction Completion Report, the lead cleanup goal was achieved in accordance with common practices that have been used by the Army throughout all investigative and remedial actions at the Depot since the late 1990s, which includes averaging the results of sample/duplicate pairs in data presentations. Parsons and the Army adopted the practice of averaging the results of samples and sample duplicates and have reported and analyzed data presented to the agency in this manner since that time. This is referenced in several of the reports that have been issued to the EPA since that time. The EPA has not previously commented on this approach in any of this other work. This procedure is also consistent with the Army and EPA's approach that has been used at other Army installations as is documented in the EPA Superfund Record of Decision for Fort Devens Operable Unit (Refer Tables 13 ----15 and footnotes of ROD found 03 to at http://www.epa.gov/superfund/sites/rods/fulltext/r0196119.pdf).

Finally, the Army believes that it is appropriate to note that the lead in soil cleanup value established for SEAD-17 (i.e., 1250 mg/Kg) is itself an average, based on the range defined (750 – 1750 mg/Kg) in the document "*Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*" (USEPA, December 1996) for an acceptable residual risk under an industrial use scenario

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September 17, 2008

Mr. John Hill U.S. Air Force Center for Engineering and the Environment HQ AFCEE/IWP 3300 Sidney Brooks Brooks City-Base, TX 78235-5112

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York. Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

Parsons appreciates the opportunity to provide you with the report for this work. Should you have any questions concerning these replacements to the document, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E. Project Manager

Enclosure

cc:

P

S. Absolom, SEDA (3 copies)
K. Hoddinott, USACHPPM (2 copies)
R. Walton, USAEC (1 copy)
R. Battaglia, USACE - NY District (1 paper copy)
T. Battaglia, USACE - NY District (1 paper copy)
AFCEE Contact Data Library (letter only via email)

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September 17, 2008

Mr. Julio Vazquez USEPA Region II Superfund Federal Facilities Section 290 Broadway, 18th Floor New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E. New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Remedial Bureau A, Section C 625 Broadway Albany, NY 12233-7015

Mr. Mark Sergott Bureau of Environmental Exposure Investigation Flanigan Square, Room 300 547 River Street Troy, New York 12180

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York (USEPA Site ID# NY0213820830 and NY Site ID# 8-50-006). Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

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Todd Heino, P.E. Program Manager

Enclosures cc: J. Hill, AFCEE S. Absolom, SEDA R. Battaglia, USACE - NY

AFCEE CDL (letter only) K. Hoddinott, USACHPPM T. Battaglia, USACE - NY M. Heaney, TechLaw R. Walton, USAEC

SENECA ARMY DEPOT ACTIVITY FINAL CONSTRUCTION COMPLETION REPORT FOR SEAD-16 AND SEAD-17 SEPTEMBER 2008

Instructions to Complete Edit/Update to Final Document

Please find enclosed the following items to update the May 2008 draft final document to the September 2008 final document.

- 1. Update report cover and spine for the Construction Completion Report.
- 2. Replace title page (first page of the report).
- 3. Section 3: Reissued the entire section to replace the previous section.
- 4. Section 7: Reissued the entire section (1 page) to replace the previous section.
- 5. Appendix N: Please add the Response to USEPA Comments to the end of the report.

If you have any questions, please contact Todd Heino at (617) 449-1405.

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September 17, 2008

Mr. John Hill U.S. Air Force Center for Engineering and the Environment HQ AFCEE/IWP 3300 Sidney Brooks Brooks City-Base, TX 78235-5112

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York. Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

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Todd Heino, P.E. Project Manager

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September 17, 2008

Mr. Julio Vazquez USEPA Region II Superfund Federal Facilities Section 290 Broadway, 18th Floor New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E. New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Remedial Bureau A, Section C 625 Broadway Albany, NY 12233-7015

Mr. Mark Sergott Bureau of Environmental Exposure Investigation Flanigan Square, Room 300 547 River Street Troy, New York 12180

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

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Todd Heino, P.E. Program Manager

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AFCEE CDL (letter only) K. Hoddinott, USACHPPM T. Battaglia, USACE - NY M. Heaney, TechLaw R. Walton, USAEC

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May 27, 2008

Mr. John Hill U.S. Air Force Center for Engineering and the Environment HQ AFCEE/IWP 3300 Sidney Brooks Brooks City-Base, TX 78235-5112

SUBJECT: Draft Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Final Construction Completion Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17) at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This Construction Completion Report describes the removal action construction activities completed at SEAD-16 and SEAD-17 between July 9, 2007 and August 13, 2007.

Responses to USEPA comments received on February 12, 2008 and to NYSDEC comments received on April 7, 2008, are included as Appendix N.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

Parsons appreciates the opportunity to provide you with the Construction Completion Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E. Project Manager

Enclosure

cc:

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S. Absolom, SEDA (3 copies) K. Hoddinott, USACHPPM (2 copies) R. Walton, USAEC (1 copy) R. Battaglia, USACE - NY District (1 copy) T. Battaglia, USACE - NY District (1 copy) J. Fallo, USACE - NY District (1 copy) P. O'Connor, Portage (1 electronic copy) Air Force email (letter only)

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May 27, 2008

|?]

Mr. Julio Vazquez USEPA Region II Superfund Federal Facilities Section 290 Broadway, 18th Floor New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E. New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Remedial Bureau A, Section C 625 Broadway Albany, NY 12233-7015

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Mr. Julio Vazquez Mr. Kuldeep K. Gupta Mr. Mark Sergott May 27, 2008 Page 2

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Enclosures

cc:

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FINAL CONSTRUCTION COMPLETION REPORT

FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY, ROMULUS, NY

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and

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ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Engineering and the Environment
ARAR	Applicable or Relevant and Appropriate Requirement
AWQS	Ambient Water Quality Criteria
bgs	below ground surface
BRAC	Base Realignment and Closure
CCR	Construction Completion Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
cPAH	Carcinogenic Polycyclic Aromatic Hydrocarbon
CQP	Construction Quality Plan
су	cubic yards
DDESB	Department of Defense Explosive Safety Board
FFA	Federal Facility Agreement
FSP	Field Sampling Plan
IAG	Interagency Agreement
LUC	Land Use Control
lf	linear feet
LTM	Long-Term Monitoring
mg/kg	Milligram per kilogram
MPPEH	Materials Presenting Potential Explosive Hazard
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NPL	National Priorities List
NY	New York
NYSDEC	New York State Department of Environmental Conservation
NYSEG	New York State Electric and Gas
ORP	Oxidation-Reduction Potential
PAH	Polycyclic Aromatic Hydrocarbon
PM	Project Manager
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goal
QC	Quality Control
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SEDA	Seneca Army Depot Activity

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sf	square feet
SHSO	Site Health and Safety Officer
SM	Site Manager
SOP	Standard Operating Procedure
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

This Construction Completion Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York is intended to provide record documentation of the removal action construction activities completed at the two historic solid waste management units (SWMUs). In addition, post-remediation groundwater sampling results indicate that groundwater has not been significantly impacted by site activities, and recommends annual groundwater monitoring and reevaluate as part of the 5-year review. This document provides documentation that all soil exceeding cleanup goals were removed and no further action is required for soil at the SWMUs.

<u>SEAD-16</u>

During April and May 2007, prior to the commencement of the remedial action (RA), pre-excavation soil samples were collected outside of the planned excavation area to supplement the existing analytical data from the remedial investigation (RI) and to delineate the full extent of the excavation area. Once the analytical results from the pre-excavation samples were reviewed and assessed, Parsons and the selected earthwork contractor, S. St George Enterprises, Inc., (St. George) mobilized to SEDA on July 9, 2007 to conduct necessary construction activities.

The initial (Phase I) excavation area at SEAD-16, which was delineated based on metal and carcinogenic polycyclic aromatic hydrocarbon (cPAH) concentrations measured in the pre-construction activity soil samples, was excavated to a depth ranging from 1 foot to 3 feet below ground surface (bgs) as specified in the Final Work Plan. Once the Phase 1 excavation was completed, floor, perimeter, and sidewall confirmatory soil samples were collected and analyzed for selected metals and cPAH compounds. Confirmatory soil samples were collected at a frequency of one sample for every 2,500 square feet (sf) or less of excavation perimeter. Sidewall samples were collected instead of perimeter samples when the completed excavation extended deeper than 2 feet bgs. The soil samples were analyzed for metals (antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc), while selected samples were compared to the cleanup goals defined in the Final Work Plan.

The Phase I excavation soil sample results indicated that samples collected from eight locations failed to meet the established cleanup goals. As such, Parsons and St. George returned to SEAD-16 and completed additional excavations (i.e., the Phase II excavations) to ensure that all soil left at the SWMU met the cleanup goals established in the Final Work Plan for metals and cPAHs. The Phase II excavation at SEAD-16 was completed on August 2, 2007. When Phase II confirmatory samples were collected and analyzed, analytical results indicated that all Phase II samples met the cleanup goals.

The extent of excavations completed at SEAD-16 is documented and verified by the analytical results obtained for 34 (plus three field duplicates) floor samples, 35 (plus three field duplicates) perimeter samples, and seven (plus one field duplicate) sidewall samples, which were collected in accordance with

the frequency requirement identified in the Final Work Plan. The final depth of excavation completed at SEAD-16 varied from 1 foot to 3 feet.

During remedial action construction activities, the excavated soil was temporarily staged within the limits of the excavation area before it was loaded out, transported off-site, and disposed at a licensed landfill by Riccelli Enterprises, Inc. A total of 2,532 tons, or approximately 1,862 cubic yards (cy), of soil were excavated from SEAD-16 and disposed at Ontario County Landfill in Flint, New York (NY).

<u>SEAD-17</u>

Pre-construction activity soil samples were also collected from the area of the planned excavation at SEAD-17 prior to the commencement of the remedial action. The resulting analytical results were used to supplement the available RI data from SEAD-17 and to delineate the extent of the excavation area. Parsons and St. George initiated excavations at SEAD-17 during the week of July 9, 2007. The Phase I excavation performed at SEAD-17 extended to a depth of approximately 1 foot bgs as specified in the Final Work Plan, and was delineated laterally using metal concentrations observed in soil samples obtained during the RI and pre-construction activity sampling and analysis sequences. Once the Phase I excavation was completed at SEAD-17, floor and perimeter confirmatory soil samples were collected and analyzed for designated metals of interest. Confirmatory soil samples were collected at the frequency specified in the Final Work Plan (i.e., one excavation floor soil sample for every 2,500 sf or less of area, and one perimeter sample for every 50 lf or less of excavation perimeter). Each of the soil samples was analyzed for metals (antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc). The reported concentrations for the confirmatory samples were compared to the cleanup goals, and the SEAD-17 Phase I excavation results indicated that samples collected from 16 locations failed to meet the cleanup goals. Additional Phase II excavations were subsequently completed in the areas where confirmatory soil sample concentrations exceeded cleanup goals to ensure that all soil left at the SWMU met the cleanup goals for metals. The Phase II excavation was completed on August 2, 2007. Phase II confirmatory soil samples were subsequently collected and analyzed and the analytical results indicate that all Phase II samples met the established cleanup goals.

The extent of excavation completed at SEAD-17 is documented and verified by the analytical results for 37 (plus one field duplicate) floor samples and 25 (plus one field duplicate) perimeter samples, which were collected in accordance with the frequency requirement identified in the Final Work Plan. The final depth of excavation after all of the phases were completed varied from 1 foot to 2 feet.

During each excavation phase performed at SEAD-17, the excavated soil was temporarily staged within the excavation area, prior to load out, transport and disposal at a licensed landfill by Riccelli Enterprises, Inc. A total of 3,540 tons (approximately 2,565 cy) of soil were excavated from SEAD-17 and disposed at Ontario County Landfill in Flint, NY.

Once the excavations and confirmatory sampling were completed at both SEAD-16 and SEAD-17, areas that were excavated to a depth of 2 feet or greater, as well as the excavation areas surrounding railroad tracks, were backfilled with clean bank-run gravel. SEAD-16 and SEAD-17 were graded to promote

positive drainage. SEAD-16 was not seeded since it was not previously vegetated. Areas of SEAD-17 that were vegetated prior to construction were seeded to promote re-vegetation.

The cleanup objectives for SEAD-16 and SEAD-17 have been achieved and no further action is required for soil at either of the SWMUs. Post-remediation groundwater sampling conducted in 2007 at SEAD-16 and SEAD-17 confirms that groundwater has not been impacted by site activities, though some metals were detected above their respective New York State Department of Environmental Conservation (NYSDEC; 1998 with addendum) Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

1.0 INTRODUCTION

This Construction Completion Report (CCR) has been prepared for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York. It is intended to provide record documentation of the removal action construction activities completed for SEAD-16 and SEAD-17 and to provide documentation that all soil exceeding cleanup goals was removed and that no further action is required for soil at the historic SWMUs. In addition, the report will confirm that groundwater has not been impacted by site activities. Additional groundwater monitoring is not required at this time.

This Construction Completion Report describes the removal action activities at SEAD-16 and SEAD-17 and presents sample collection and laboratory test results, record survey data, record (as-built) drawings, and photo documentation to demonstrate compliance with the requirements set forth by the Remedial Design Work Plan/Design Report for SEAD-16 and SEAD-17 (Parsons, 2007), hcreafter referred to as the Final Work Plan. The report also documents the post-remediation groundwater monitoring, which demonstrate that groundwater has not been impacted by site activities.

1.1 PURPOSE OF THE CONSTRUCTION COMPLETION REPORT

The purpose of this CCR is to document that all construction activities associated with the removal action at SEAD-16 and SEAD-17 were completed in accordance with the Final Work Plan unless otherwise noted and that no further action for soil remaining at SEAD-16 and SEAD-17 is required. The removal action involved the removal and off-site disposal of impacted soil at a licensed facility.

This CCR documents that the main elements of the remedy established in the Record of Decision (ROD) (Parsons, 2006c), listed below, were completed during the Remedial Action (RA) or are scheduled as part of post-construction activities:

- Conduct additional sampling as part of the pre-design sampling program to further delineate the areas of excavation;
- Remove, test, and dispose of the SEAD-16 building debris off-site;
- Excavate ditch soil to a depth of 1 foot with lead concentrations greater than 1250 mg/kg until cleanup standards are achieved;
- Excavate surface soils to a depth of 1 foot at SEAD-16 with lead concentrations greater than 1250 mg/kg, and polycyclic aromatic hydrocarbon (PAH) and metal concentrations greater than cleanup standards;
- Excavate subsurface soils to a depth of 2 feet to 3 feet at SEAD-16 (areas around SB16-2, SB16-4, and SB16–5) with lead concentrations greater than 1250 mg/kg, and PAH and metal concentrations greater than cleanup standards;
- Excavate surface soils to a depth of 1 foot at SEAD-17 with lead concentrations greater than 1250 mg/kg and metal concentrations greater than cleanup standards;
- Stabilize excavated soils from SEAD-16 and SEAD-17 and building debris from SEAD-16 exceeding the toxicity characteristic leaching procedure (TCLP) criteria in order to attain Land Disposal Restrictions (LDR):

- Dispose of the excavated material in an off-site landfill;
- Backfill the excavated areas with clean backfill;
- Conduct groundwater monitoring at SEAD-16 and SEAD-17 until concentrations are below the GA criteria;
- Remediate material potentially presenting an explosive hazard and munitions and explosives of concern to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or to put into place land use restrictions as may be required by DDESB;
- Complete Resource Conservation and Recovery Act (RCRA) closure of the deactivation furnace at SEAD-17 by either further decontaminating or demolishing and disposing off-site the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).
- Submit a Completion Report following the remedial action;
- Establish and maintain land use controls (LUCs) to prevent access to or use of the groundwater and to prevent residential use until cleanup standards are met; and
- Complete a review of the selected remedy every 5 years (at minimum), in accordance with Section 121(c) of the CERCLA.

Construction activities documented within this report were performed in accordance with the Final Work Plan, which included a Field Sampling Plan (FSP) and a Construction Quality Plan (CQP). This CCR will document that all required construction activities were completed in an appropriate and satisfactory manner. This document has been prepared for the Air Force Center for Engineering and the Environment (AFCEE) and the U.S. Army under Contract No. FA8903-04-D-8675, Task Order No. 0031.

1.2 SITE LOCATION AND HISTORY

Since its inception in 1941, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items. SEDA was proposed for the National Priorities List (NPL) in July 1989. In August 1990, SEDA was formally listed under Group 14 on the Federal Section of the NPL. To facilitate resolution of contamination issues at SEDA, the United States Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and the Army entered into a Federal Facility Agreement (FFA). also known as the Interagency Agreement (IAG). This agreement stated that future investigations would be based on Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) guidelines, and that the RCRA was considered an Applicable or Relevant and Appropriate Requirement (ARAR) pursuant to Section 121 of CERCLA. In October 1995, SEDA was designated by the Department of Defense for closure under provisions of the 1995 Base Realignment and Closure (BRAC) process.

SEDA is a 10,587-acre former military facility located in Seneca County in the towns of Romulus and Varick, New York, which has been owned by the United States Government and operated by the Department of the Army since 1941. A location map for SEDA is shown in **Drawing C-1**.

SEAD-16 and SEAD-17, the Abandoned Deactivation Furnace and the Active Deactivation Furnace, are retained by the Army pending the completion and close out of their environmental obligations at these historic SWMUs. SEAD-16 and SEAD-17 are located in the east-central portion of the former Depot, within the Depot's former ammunition storage area where vehicular and pedestrian access is restricted.

Both SEAD-16 and SEAD-17 were used for the demilitarization of various small arms munitions. The process of deactivation of munitions involved heating the munitions within a rotating steel kiln. The heat would cause the munitions to detonate once the detonation temperature was reached. The byproducts produced during this detonation were then either swept out of the kiln through the stack or were expelled from the kiln as bottom ash or debris.

SEAD-16 consists of 2.6 acres of fenced land with grasslands in the north, east, and west, a storage area for empty boxes and wooden debris, and an unpaved roadway in the south. Also on-site is the building which housed the deactivation furnace (Building S-311), a smaller abandoned building known as the Process Support Building (Building 366), two sets of SEDA railroad tracks, and utilities. A site plan for SEAD-16 is included as **Drawing C-2**.

SEAD-17 consists of a deactivation furnace building (Building 367) that is surrounded by a crushed shale road. Beyond the perimeter of the crushed shale road is grassland. Two small sheds are located in the eastern portion of SEAD-17, and there is vehicular access to SEAD-17 from an unpaved road to the north. A map of SEAD-17 is included as **Drawing C-3**.

SEAD-16 has been inactive and abandoned since the 1960s. SEAD-17 was constructed to replace the deactivation furnace at SEAD-16. However, SEAD-17 has been inactive since 1989 as a result of RCRA permitting issues.

1.3 CONTAMINANTS OF CONCERN

SEAD-16

<u>Soil</u>

The primary constituents of concern in SEAD-16 soil include arsenic, copper, lead, and zinc. Additionally, cPAHs were detected in soils found at discrete locations. The highest concentrations of soil contamination resulted from the operations that were performed within and in close proximity to the Abandoned Deactivation Furnace Building and the Process Support Building.

Metals (antimony, copper, lead, mercury, and zinc) were found at concentrations greater than the sitespecific cleanup goals in soils located in portions of the drainage ditches that were investigated at SEAD-16. CPAHs were detected in the surface soil along the railroad tracks located immediately to the northwest of Building S-311. Polycyclic aromatic hydrocarbons (PAHs) are commonly associated with the historic "creosote" preservatives used on railroad track ties, and are common components and byproducts of the combustion of railroad fuels (coal and diesel) and the spillage of rolling stock lubricants. The fact that cPAHs were only found in a discrete location near the tracks leads the Army to believe that their presence at SEAD-16 is not connected to site activities.

Groundwater

Groundwater is not considered a medium of concern at SEAD-16. Metals were detected at concentrations that exceeded the NYSDEC Class GA Ambient Water Quality Standard (AWQS) levels. All of the exceedances were less than or close to SEDA background groundwater quality concentrations, except for

sodium. Therefore, groundwater at SEAD-16 is not considered impacted and contaminants of concern (COCs) were not identified for SEAD-16 groundwater.

SEAD-17

Soil

The primary constituents of concern in SEAD-17 soil are the metals including antimony, arsenic, copper, lead, mercury, and zinc. In all instances, the detected concentrations of metals were found to be highest in those samples collected closest to the Active Deactivation Furnace Building, particularly near the southwestern area near the building. None of the ditch soil samples exceeded the site-specific cleanup goals.

Groundwater

Groundwater is not considered a medium of concern at SEAD-17. Metals were detected at concentrations that exceeded their respective NYSDEC Class GA AWQS. However, the levels detected were less than SEDA background concentrations, except for sodium. Therefore, groundwater at SEAD-17 is not considered impacted and COCs were not identified for SEAD-17 groundwater.

1.4 REPORT ORGANIZATION

The first section of this report serves as an introduction to the CCR and provides site history. Section 2 details the pre-construction activities completed at SEAD-16 and SEAD-17. Section 3 summarizes the construction activities, including the earthwork and confirmatory sample collection and analysis. Section 4 addresses differences from the Final Work Plan. Section 5 presents a summary of the post-construction activities. Section 6 presents the conclusions and recommendations. References are provided in Section 7.

Appendix A includes the daily reports; **Appendix B** includes the waste disposal characterization data; **Appendix C** presents the dust monitoring record; **Appendix D** provides photo documentation of the field work; **Appendix E** presents the complete analytical results of the confirmatory samples: the chain of custodics for the confirmatory soil samples are provided in **Appendix F**, and the Sample Delivery Group (SDG) case narratives from the laboratory are included as **Appendix G**; **Appendix H** includes the data validation report; USEPA's analytical results for split soil samples are provided in **Appendix I**; the sump water analytical results are presented in **Appendix J**; **Appendix K** includes a summary of the nonhazardous solid waste manifests and a CD of the manifest; the analytical results for the bank-run gravel arc listed in **Appendix L**; the post-remediation groundwater monitoring results are presented in **Appendix M**; and the comment and response are shown in **Appendix N**.

2.0 PRE-CONSTRUCTION ACTIVITIES

This section discusses the activities performed in preparation for RA implementation at SEAD-16 and SEAD-17. These activities included pre-excavation perimeter sampling and analysis; a health and safety kick-off meeting; establishment of site access and security, such as access roads, fencing, and signage; clearing requirements; utility clearance; establishment of work and staging areas; control of run-on and run-off waters; water management; establishment of erosion and sedimentation controls; well protection; disposal characterization and approval; and a pre-construction meeting.

2.1 PRE-EXCAVATION PERIMETER SAMPLING

R1 data did not adequately define the southcastern boundaries of soil contamination at SEAD-16 and SEAD-17; therefore, pre-excavation perimeter samples were collected and analyzed to address these identified data gaps. The horizontal limits of excavation at both SEAD-16 and SEAD-17 were verified by collecting perimeter samples between April 4, 2007 and May 3, 2007 prior to the initiation of the RA. This is fully discussed in the Final Work Plan (Parsons, 2007). Additional soil samples were collected and characterized so that analytical results for samples were available for each 50-foot length of the perimeter at each site. All of the pre-excavation soil samples were collected using disposable sampling scoops and following procedures outlined in the Sampling and Analysis Plan (SAP) (Parsons, 2006a). Quality control (QC) samples were collected in accordance with Section 16.7 of the SAP. Pre-excavation perimeter samples were collected at 28 new locations at SEAD-16 and 19 new locations at SEAD-17. All perimeter confirmatory soil samples collected from SEAD-16 were analyzed for metals by USEPA SW846 Method 6010B and for mercury by USEPA SW846 Method 7471A. Three confirmatory samples, 16EXPR-G4-01 and a field duplicate pair 16EXPR-G5-01 and 16EXPR-G5-02 (located in areas where elevated cPAH concentrations were observed) were also analyzed for cPAHs by USEPA SW846 Method 8270C. The confirmatory samples collected at SEAD-17 were analyzed for metals by USEPA SW846 Method 6010B and for mercury by USEPA SW846 Method 7471A. All results were compared to the cleanup goals listed in Table 2-1.

Pre-excavation soil samples exhibiting soil concentrations that were less than established site cleanup goals were merged with similar data collected during the RI, and this merged dataset was used to establish the limits of the excavations planned at both SWMUs. Three historic samples collected during the RI (SS16-25, SS16-13, and SS16-28) at SEAD-16 and nine historic RI samples (SS17-16, SS17-20, SS17-19, SS17-28, SS17-12, SS17-24, SS17-26, SS17-31, and SS17-34) at SEAD-17 were used as part of this perimeter confirmatory sample set. All of the sample results used to bound the extent of the planned excavations at SEAD-16 and at SEAD-17 met the cleanup goals listed in **Table 2-1**. These samples are also shown in **Drawings C-4** and **C-5**. Analytical results for the pre-excavation samples used to bound the limits of the excavations are presented in **Tables 3-2** and **3-3** for SEAD-16 and SEAD-17, respectively, in combination with the post-excavation confirmatory soil sampling results. The historic samples collected during the RI are not included in **Table 3-2** or **3-3**.

Perimeter samples were not collected along the boundary of Building S-311 and 366 at SEAD-16 or along the boundary of Building 367, since the excavation extended to the base of the buildings.

Soil samples were also collected in drainage ditches as part of the pre-excavation sampling effort to determine the downgradient endpoint of each ditch excavation. A sample was not collected from a ditch end if (1) the ditch end is encapsulated by a soil excavation area (e.g., northwestern edge of drainage ditch 1 and 2) in which case it would be removed as part of the main excavation area regardless of the presence or absence of contaminants or (2) it is the upgradient end of the ditch (e.g., north end of drainage ditch 4 or west end of drainage ditch 3) since there is no surface water flow to transport sediments beyond this end. Additionally, perimeter soil samples were not collected around the sides of drainage ditches since the entire width of the ditch was exeavated.

2.2 HEALTH AND SAFETY MEETING

A health and safety indoctrination meeting was held at SEDA on July 9, 2007 prior to the commencement of construction at SEAD-16 and SEAD-17. Parsons employees, SEDA personnel, and personnel of the earthwork subcontractor, S St. George Enterprises, Inc., attended the health and safety meeting. A review of the project health and safety requirements and procedures outlined in the Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBCII (Parsons, 2006b) was performed. Project coordination and communication and the scope of work were discussed. Additionally, due to the fact that the work at SEAD-16, SEAD-17, and SEAD-121C (which was completed simultaneously) involved excavation of lead contaminated soils, lead awareness training was also provided to all personnel.

2.3 SITE SECURITY

SEAD-16 and SEAD-17 are located within the former Munitions Storage Area of the Depot, and as such, they are surrounded by security fences, and access into the area is controlled by one gate that is normally locked closed. Additionally, prior to the construction activity, both SWMUs were surrounded by secondary locked security fences that identified the bounds of the land at each SWMU that was retained by the Army pending completion of necessary RAs. The Army provided site access to the field team prior to, and during the performance of, construction activities at SEAD-16 and SEAD-17. The area immediately surrounding the work area was clearly marked through the use of signs, barrier rope, tape, and fencing.

All visitors to the work sites reported to the Site Manager (SM) and/or the Site Health and Safety Officer (SHSO) when they arrived on-site. Necessary site-specific information and training was provided to all visitors, as needed, prior to their entry into any of the active work zones.

Construction activities were coordinated with the United States Army Corps of Engineers (USACE) point-of-contact in advance of their implementation. Additionally, daily reports were prepared and provided to the Army and Parsons' home-office personnel summarizing location of activity, equipment on the job site, site personnel present, visitors present, work performed, and estimated quantities of materials excavated, loaded, or disposed. Copies of the daily reports prepared for the work performed at SEAD-16 and at SEAD-17 are provided in **Appendix A**.

2.4 CLEARING

Trccs are not present within the work areas at either SEAD-16 or at SEAD-17. The SWMUs were covered with low lying brush, which was cleared. A brush hog was used to mulch the brush, which was then left in place on-site.

2.5 IDENTIFICATION OF OBSTRUCTIONS AND UTILITIES

Personnel and equipment of New York State Electric and Gas (NYSEG) were on-site on July 11, 2007 to disconnect the main overhead electrical power feeders at SEAD-16 and at SEAD-17.

No other underground utilities were identified within any of the work zones prior to the commencement of construction activities.

2.6 ESTABLISHMENT OF WORK AND STAGING AREAS

The perimeter of the initial excavations planned at each of the areas was defined and staked prior to the initiation of construction activities. Entry/exit ways to the construction areas were placed as required to support needed traffic flow. The support area for SEAD-16 was established at the southwestern edge of the excavation, to the south and west of Building S-311 (see **Drawing C-2**). The work support zone was arranged to facilitate free and logical equipment movement to and from the site of the excavation work within the area, which enhanced safety and security. Excavated soil was temporarily stockpiled at the southwestern end, but within the footprint of the planned excavation area over material that was to be excavated last pending load out and transport off-site. Equipment leaving the work area was decontaminated in an area adjacent to the stockpile area. Erosion control measures were taken to prevent sediment transport.

The support area for SEAD-17 was established at the northeastern edge of the excavation. The work support zone was arranged to facilitate free and logical equipment movement to and from the site of the excavation work within the area, which enhanced safety and security. Excavated soil was temporarily stockpiled at the northeastern edge of the planned excavation pending load out and transport off-site. The stockpiles were sited within the footprint of the planned excavation, above material that was excavated last, shown in **Drawing C-3**. Equipment leaving the work area was decontaminated in an area adjacent to the stockpile area. Erosion control measures were taken to prevent sediment transport.

Equipment leaving the work area was inspected prior to departure to ensure that loads were covered, and to ensure site contaminants were not transported away from work zone. Site vehicles and equipment were inspected to ensure that clods of dirt and debris were not trapped between wheels and that the exterior of the vehicles were not covered with excavated soil and debris. No soil/debris clods were observed on or in any of the vehicle tires during this work, as the soil was generally dry and well compacted in all of the construction zones. Evidence of excavated soil was occasionally found on other exterior portions of the vehicles, and it was removed by brushing prior to the departure of the vehicle from the work or loading area. Vehicle washing operations were not performed during any of the construction activity.

2.7 CONTROL OF RUN-ON AND RUN-OFF WATERS

The subcontractor provided silt fencing along the downgradient edges of the excavation areas at SEAD-16 and SEAD-17 to prevent sediment transport to clean areas, shown in **Drawings C-2** and **C-3**, respectively. Hay bales were installed in the drainages swales downgradient of the work areas. The silt fencing was left in place after all construction activities were completed.

2.8 WATER MANAGEMENT

Significant rain events did not occur during the construction activities performed at SEAD-16 and SEAD-17. There was no significant accumulation of water in any of the work zones during construction, and no water collection was necessary.

2.9 ESTABLISHMENT OF EROSION AND SEDIMENTATION CONTROLS

Temporary crosion and sedimentation controls, such as silt fencing and hay bales, were installed in downgradient areas during operations to prevent migration of sediments and erosion. Prior to beginning any excavation work, temporary silt fencing was erected, which surrounded the downgradient sides of disturbed areas to prevent contaminated sediment transport. The temporary silt fencing was maintained throughout the project and will not be removed until permanent vegetation has been re-established. Any temporary crosion control measures were removed following remediation so as to return drainage patterns to their general conditions prior to remediation.

2.10 WELL PROTECTION

Monitoring wells located within the areas of excavation were protected. Of the seven monitoring wells present at SEAD-16, four of them are located within the excavation area. MW16-3, MW16-4, MW16-6 and MW16-7 were protected during remediation activities by placing visible barriers around them. All four monitoring wells present at SEAD-17 were outside of the limits of excavation and were protected during remediation activities by placing visible barriers around them. All seaD-17 are included in post-construction long-term groundwater monitoring.

2.11 DISPOSAL CHARACTERIZATION AND APPROVAL

Pre-approval from the disposal facility that accepted the material from SEAD-16 and SEAD-17 was obtained. The disposal facility, Ontario County Landfill in Flint, New York, required the analysis of one sample per 700 cy of material from the areas anticipated to be excavated at SEAD-16 and SEAD-17. This sampling requirement was based on the disposal facility's review of the historic sampling results at SEAD-16 and SEAD-17 and their specific sampling requirements.

At SEAD-16, three samples were collected, and each sample was a composite of multiple grabs. The samples were submitted to TestAmerica Laboratories, Inc. (formerly Severn Trent Laboratories, Inc.), Amherst, NY. The disposal facility required that all samples be tested for hazardous waste characteristics (reactivity, ignitability, corrosivity, and Toxicity Characteristic Leaching Procedure [TCLP] metals). Based on the analytical results, shown in **Appendix B**, all results for the SEAD-16 samples met the RCRA requirements for non-hazardous material, and the disposal facility approved acceptance of the material at SEAD-16 as non-hazardous material suitable for daily cover.

Initially, four disposal characterization samples were collected at SEAD-17, and each sample was a composite of multiple grabs. The samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of hazardous waste characteristics (i.e., reactivity, ignitability, and corrosivity and TCLP metals). Lead was detected above the TCLP limit of 5 mg/L in one composite sample collected from locations within Grid E6. As a result, 15 additional disposal characterization samples were collected and analyzed for TCLP metals from locations surrounding the area where the hazardous lead was identified in Grid E6. The 15 samples were collected on five different sampling dates as part of the effort to delineate the extent of the soil with hazardous concentrations of lead. The analytical data for these samples are provided in **Appendix B**.

Parsons and the disposal facility agreed that the area surrounding the high lead TCLP levels would be isolated from the rest of the material excavated and addressed during construction activities through stabilization. Based on the historic data and the waste characterization sampling results, the disposal facility pre-approved acceptance of the other material from SEAD-17, excluding the area surrounding Grid E6, as non-hazardous material suitable for daily cover.

2.12 PRE-CONSTRUCTION MEETING

A project kick-off meeting was held at SEDA on July 9, 2007. Attendees included Parsons' Project Manager (PM), SM, SEDA personnel, and personnel of the earthwork subcontractor, S St. George Enterprises, Inc. The meeting included a review of health and safety issues, construction quality management requirements, and a site walk at SEAD-16, SEAD-17, and SEAD-121C. SEDA, Parsons, and the earthwork subcontractor coordinated administrative issues related to the project to ensure that the remedial action would be executed smoothly.

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the RA at SEAD-16 and SEAD-17. Construction activities began with mobilization of personnel and equipment by Parsons and the selected earthwork subcontractor, S. St. George Enterprises, Inc of Fredonia, New York, on July 9, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and S. St. George demobilized from the sites. All construction activities that took place at SEDA were documented in daily reports (Appendix A).

3.1 SITE PREPARATION

The field crew and equipment were mobilized to the site on July 9, 2007. Site preparation included the following activities:

- Mobilization; and
- Removal of the fence along the north and west side of SEAD-17.

3.1.1 Mobilization

The field crew and the equipment were mobilized to the site on July 9, 2007. Equipment included one dozer, two excavators, a mini excavator, a Bobcat, a skid steer, a water truck, a fuel truck, and a mechanics truck.

3.1.2 Removal of SEAD-17 Fencing

To facilitate access by the excavators to the SEAD-17 excavation area, 150 linear feet of fence was removed along the west side of SEAD-17. In addition, 30 linear feet of fence was removed on the north side of the access road to facilitate truck access to SEAD-17. The fence posts were pulled from the ground. The fence fabric was rolled back and secured.

3.2 HEALTH AND SAFETY DURING CONSTRUCTION

At the start of each work day, all on-site workers attended a daily health and safety briefing conducted by the SHSO. Site visitors were required to review the project Health and Safety Plan (Parsons, 2005; 2006b) and attend a site-specific health and safety briefing. These "tailgate" meetings were mandatory for all subcontractors and Parsons personnel working at the site. At each meeting, the SHSO discussed personal protective equipment (PPE) needs for that day and any potential hazards associated with the day's scheduled activities. The topics covered and all attendees at each daily briefing were documented, and the records were stored by the SHSO in the project files.

Dust monitoring for lead was conducted during the work at SEAD-16 and SEAD-17 in accordance with the project Health and Safety Plan (Parsons, 2006b), which included a Lead Monitoring Plan. An IOM personal sampler was used to monitor for lead, and samples were submitted to Galson Laboratories in East Syracuse, New York for subsequent analysis. All personal lead monitoring sample results indicated that lead levels were well below action levels.

3.3 DUST MONITORING

Dust monitoring was conducted during the work using two Thermo Anderson DR-4000 dust monitors. Perimeter air monitoring of the work area for dust was conducted during the excavations. The dust monitor provided real time perimeter measurements. The air monitoring equipment was positioned downwind of the work areas. The dust monitors were set up from July 9 through July 18, 2007, during which time the majority of the excavation work at SEAD-16 and SEAD-17 was completed. It was determined that dust was not a problem at the sites based on the low air monitoring readings. Therefore, air monitoring was discontinued during the additional excavation activities performed during August.

The dust monitoring record is included in Appendix C.

3.4 SEAD-16

3.4.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation areas were delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. The soil was excavated to a depth of 1 foot, except for two areas, Grids E5 and D8, which were planned to be excavated to depths of 2 feet and 3 feet, respectively, based on RI subsurface soil data. Excavation began on July 10, 2007 and the initial excavation, referred to as the Phase I excavation, was completed on July 18, 2007. **Drawing C-4** shows the excavation area at SEAD-16. Bedrock was encountered at 2 feet at the subsurface excavation located between the tracks in Grid E5, shown in **Drawing C-4**. Excavated soil was temporarily staged at the southern end of the excavation area at the southwest corner of Building S-311, as shown in **Drawing C-2**. Excavated material was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. Soil excavated during Phase I activities at SEAD-16 totaled 1,626 cy, and is summarized in **Table 3-1**. Photographs of the excavation activity are included in **Appendix D**.

General Confirmatory Sampling Collection Details

As general requirements at both SEAD-16 and SEAD-17, confirmatory samples were collected from the base ("floor") and perimeter of the excavation to confirm that soil with concentrations above the cleanup goals was excavated and removed from the sites. Floor and perimeter samples were collected at a frequency of 1 sample every 2,500 sf or less of excavation floor and 1 sample every 50 lf or less of excavation perimeter, respectively. In the event that an excavation extended 2 or more feet below the original ground surface, sidewall samples were collected instead of perimeter samples.

Field duplicates were collected to meet the quality assurance/quality control (QA/QC) requirements established in the Final Work Plan. Samples were analyzed for specific metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) identified in the ROD based on metals that contribute potential human health risk to the site; and samples collected from Grids G4 and G5 were also analyzed for cPAHs since they were detected at that location during the RI (as discussed in **Section 1.3**). Samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of selected metals (antimony,

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arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B and mercury by USEPA SW846 Method 7471A. Samples collected from Grids G4 and G5 at SEAD-16 were also submitted for analysis of cPAHs by USEPA SW846 Method 8270C. The cleanup goals (listed in **Table 2-1**) for cPAHs and metals at SEAD-16 are as follows:

Compound	Units	Cleanup Goal	
сРАНѕ			
Benzo(a)pyrene Toxicity Equivalence	mg/kg	10	
Metals			
Antimony	mg/kg	41	
Arsenic	mg/kg	21.5	
Cadmium	mg/kg	60	
Copper	mg/kg	10,000	
Lead	mg/kg	1,250	
Mercury	mg/kg	5.7	
Thallium	mg/kg	6.7	
Zinc	mg/kg	10,000	

All samples were collected following procedures outlined in the Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (Parsons, 2006a). A 50-foot by 50-foot grid matrix was laid out over the excavation area as a means of tracking the locations of confirmatory samples; the grids are shown in **Drawing C-4**. Floor and perimeter samples were collected as grab samples from unique locations, at a depth between 0 and 2 inches below ground surface. Floor samples were collected from the center of each grid, unless biased by field observations or site features. Sidewalls were collected as grab samples from a depth halfway between the ground surface and the base of excavation.

The analytical results of each field duplicate pair were averaged to produce a single result to represent the level at the sample location. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states that: "Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Analytical data for all confirmatory samples are provided in **Appendix E**. The chain-of-custodies for the confirmatory samples are included in **Appendix F** and the case narratives for laboratory sample delivery groups are presented in **Appendix G**. All of the analytical results were validated in a manner that is consistent with procedures defined in the USEPA's National Functional Guidelines for Organic Data Review and consistent with USEPA Region 2's Standard Operating Procedures (SOPs). A data validation report is provided in **Appendix H**.

Phase I Sampling

After the Phase I excavation, seven perimeter samples (plus one field duplicate), 33 floor samples (plus two field duplicates), and eight sidewall samples (plus one field duplicate) were collected between July 18, 2007 and July 20, 2007. Analytical results from five Phase I samples (three floor samples and two

sidewall samples) exceeded the cleanup goal for antimony (41 mg/kg), and four samples (three floor samples and one sidewall sample) exceeded the lead cleanup goal (1,250 mg/kg). The failed sample locations are shown in **Figure 3-1** and listed below.

Summary of Phase I Confirmatory Soil Samples with Exceedances of Cleanup Goals					
	Antimony	Lead $(CUG = 1,250 \text{ mg/kg})$			
Sample ID	(CUG = 41 mg/kg)				
16EXFL-B8-02	67.3	1370			
16EXFL-C9-01	230	6410			
16EXFL-D8-01	95.2	4090			
16EXSW-D8-05	68.1	3380			
16EXSW-D8-02	2 191 *				

* The lead concentration at 16EXSW-D8-02 did not exceed 1,250 mg/kg.

Floor sample 16EXFL-B8-02 was collected from Ditch #1; a floor sample collected upgradient of the failed 16EXFL-B8-02 met the cleanup goals. Floor sample 16EXFL-C9-01 was collected from the center of Grid C9. Samples 16EXFL-D8-01, 16EXSW-D8-01, and 16EXSW-D8-05 were collected from the subsurface excavation area in Grid D8 located southeast of Building S-311 next to the ramp. Floor sample 16EXFL-D8-01 was collected from the center of the 2-foot excavation area. Sidewall sample 16EXSW-D8-05 was collected at sample location 16EXSW-D8-01 (duplicate of sample ID 16EXSW-D8-01) located on the northwest side of the deep excavation close to Building S-311 at a depth approximately 1 below ground surface; sidewall sample 16EXSW-D8-02 was collected on the east side of the deep excavation at a depth 1 below ground surface.

All confirmatory samples met the cleanup goals for the other metals, and all samples analyzed for cPAHs achieved the cPAH cleanup goal.

On July 18, 2007, five split soil samples (plus one field duplicate) were collected by USEPA representatives at the same locations as five of the confirmatory samples submitted to TestAmerica Laboratories, Inc. by Parsons and the Army. The USEPA samples were analyzed by the USEPA and are not part of the Army's dataset. The analytical results for the samples collected and analyzed by the USEPA varied from the analytical results for the split samples analyzed by TestAmerica. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher value for samples 16EXPR-C10-02 and 16EXPR-F9-02 was greater than 1,250 mg/kg for lead (1,360 mg/kg and 2,940 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids C10 and F9, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed at SEAD-16 between July 30, 2007 and August 2, 2007 to remove soil associated with the five failed samples and two USEPA split samples, shown in **Drawing C-4**. The details of the Phase II excavation were as follows:

- (1) Ditch #1, running through Grids B8, C7, and C8, was excavated to bedrock so that the total depth of excavation in Ditch #1 extended approximately 2 feet below the original ground surface, to remove the soil associated with high levels of antimony and lead found in floor sample 16EXFL-B8-02;
- (2) An additional foot of soil was excavated from the entire Grid C9 area, so that the total depth of excavation in this grid extended to 2 feet below ground surface, due to the results of floor sample 16EXFL-C9-01, which exceeded the cleanup goals for antimony and lead;
- (3) The limits of excavation extended laterally to include a 1-foot excavation in a portion of Grid C10 and a portion of Grid F9 due to the higher of the two sample results from the split samples (16EXPR-C10-02 and 16EXPR-F9-02) exceeding the cleanup goal for lead;
- (4) The subsurface excavation in Grid D8 was expanded vertically and horizontally due to the failure of soil at two sidewall sample locations (16EXSW-D8-01 and 16EXSW-D8-02) and the floor sample (16EXFL-D8-01) to meet the cleanup goals. The excavation extended northeast of the original area up to the building ramp, and 1-foot of soil was scraped off the bottom of the deep excavation and bedrock was encountered. Any residual soil in the excavation area was removed from the area along the building ramp or Building S-311 until both of those surfaces were scraped clean and exposed. The total depth of excavation in this area reached 3 feet.

An additional 235 cy of soil was removed from SEAD-16 during the Phase II excavation activities. All excavation activities were completed by August 2, 2007. A total of 1,862 cy of soil was excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the final excavation areas and the final depths of excavations. Phase II confirmatory samples were collected after the completion of the Phase II excavation.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on July 30, 2007 and August 2, 2007 to confirm that soil remaining on-site met the cleanup goals for metals. Four floor samples (plus one field duplicate), two perimeter samples, and one sidewall sample (plus one field duplicate) were collected and analyzed by TestAmerica for targeted metals (antimony, arsenic, cadmium, copper, lead, thallium, zinc, and mercury) to confirm that the removal action was complete. The four floor samples were collected to confirm that the base of newly excavated areas met the cleanup goals. Phase II confirmatory samples were collected in the following locations, shown in **Drawing C-4**:

- Floor sample 16EXFL-C9-02 was collected in the center of Grid C9 after the excavation of an additional foot of soil;
- Floor sample 16EXFL-C10-01 was collected from the base of Grid C10 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-C10-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid C10;

- Floor samples 16EXFL-F9-01 and field duplicate 16EXFL-F9-02 were collected at the base of Grid F9 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-F9-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid F9;
- Floor sample 16EXFL-D8-02 was collected from the base of the expanded excavation in Grid D8 adjacent to the Building S-311 ramp, and the original excavation around SB16-5 in Grid D8 was excavated to bedrock; and
- Sidewall sample 16EXSW-D8-06 (along with field duplicate 16EXSW-D8-07) was collected at a location along the southern wall of the excavation close to the building ramp; a sample was collected at this location rather than along the ramp (where the failed sample 16EXSW-D8-02 was collected) since the ramp was scraped clean during the Phase II excavation and no soil remained to sample.

Phase II samples were not collected from the sidewall of Building S-311, since the foundation of the building was exposed and no soil remained to be sampled. A floor sample was not collected from the base of Ditch #1 since the Phase II excavation removed the soil in the ditch to bedrock, and no soil remained in the ditch to sample.

All Phase II samples met the cleanup goals.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the antimony and/or lead cleanup goals. Therefore, the data for the samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3-2**. The locations of all final confirmatory samples are shown in **Drawing C-4**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-1**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter/Sidewall	Frequency	No. of	No. of Final	No. of QA/QC
	Length of	Requirement	Samples	Samples	Samples
	Excavation Area		Required	Collected	Collected ¹
Floor	41,616 sf	1 per 2,500	17	34 ²	3
Samples		sf			
Perimeter	1,366 lf	1 per 50 lf	28	35	3
Samples					
Sidewall	152 lf	1 per 50 lf	3	7	1
Samples					

1. QA/QC samples included collection of a field duplicate.

2. The number of final floor samples collected includes the collection of ditch samples and floor samples in partial grids.

All excavation activities were completed on August 14, 2007. A total of 1,862 cy of soil were excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the extent and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.4.2 Water Removal

The basement of Building S-311 contained approximately 2 to 3 feet of standing water at the time field work began. One sample of the water (16WWT16-0703) was collected on July 3, 2007 prior to the start of field activities. The sample was submitted to TestAmerica Laboratories, Inc. for analysis of volatile organic compounds (VOCs) by USEPA SW846 Method 8260B, semivolatile organic compounds (SVOCs) by USEPA SW846 Method 8270C, metals by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7470A. Metals were the only analytes detected in the sample; analytical results are provided in **Appendix J**. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill.

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

3.4.3 Unexploded Ordnance

SEAD-16, the Abandoned Deactivation Furnace, was historically used for the demilitarization of various small arms munitions via a heated rotating steel kiln. SEAD-16 has been inactive and abandoned since the 1960s and the presence of materials presenting potential explosive hazard (MPPEH) and propellant residue in pipes/equipment at the site was considered possible. An Unexploded Ordnance (UXO) technician was on-site to provide construction support as a safety measure during excavation activities.

Small arms munitions scrap removed from the basement of Building S-311 was spread out for visual inspection and classification by the UXO technician prior to transport off-site for disposal; no MPPEH was found as only small arms casing and bullets were discovered in material recovered from and inside the building. Pipes (approximately 200 linear feet) and equipment (cyclone, bag filter, and vacuum pump) potentially contaminated with propellant were removed from SEAD-16 and transported to the Open Burn Ground in the northwest portion of SEDA for heat treatment in a burn tray.

3.4.4 Building Demolition

Debris was removed from inside Building S-311, the Abandoned Deactivation Furnace, and Building 366, the Process Support Building, and the floors were swept to reduce potential dust mobilization during demolition activities. As part of a separate effort completed under a different contract, both of these buildings were demolished and removed from the site due to safety concerns.

3.4.5 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated non-

hazardous soil at Ontario County Landfill in Flint, NY. A decontamination area was setup adjacent to the stockpile location to facilitate the loading and exiting of haul trucks from the site. Truck load out was completed by August 2, 2007. A total of 2,532 tons (101 loads) of soil were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.4.6 Site Restoration

The excavated areas that extended to 2-feet below ground surface or greater and the areas between the railroad tracks were backfilled with clean bank-run gravel provided by Riccelli. One sample (16FM-SPX-01) was collected from the off-site borrow source material (clean bank-run gravel) and submitted to TestAmerica for analysis of VOCs by USEPA SW846 Method 8260B, cPAHs by USEPA SW846 Method 8270C, selected metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7471A. The analytical results met the acceptance criteria for borrow source material detailed in the Final Work Plan.

- VOCs below NYSDEC Unrestricted Soil Cleanup Objectives (Table 375-6.8(a));
- cPAHs below site cleanup goals; and
- Metals below site cleanup goals.

Analytical results of the clean bank-run gravel are presented in Appendix L.

The entire site was graded to promote positive drainage. Re-seeding was not required since the area was not originally vegetated. The crew demobilized from the site on August 13, 2007.

3.5 SEAD-17

3.5.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation area was delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. Excavation began on July 10, 2007 and the initial excavation to a depth of 1 foot, referred to as the Phase I excavation, was completed on July 17, 2007. **Drawing C-5** shows the final excavation area at SEAD-17. Excavated soil was temporarily staged at the northern edge of the excavation area adjacent to the gravel access road entering the site northeast of Building 367. Excavated soil was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. All Phase I excavated material totaled 1,995 cy, as is summarized in **Table 3-1**.

As discussed in Section 2.11, an area around Grid E6 with high levels of leachable lead was delineated based on the extensive TCLP metals sampling results. The soil in this area was excavated and mixed with 6.8 tons of Portland cement provided by Riccelli Enterprises, Inc on July 13, 2007. The excavator was used to spread and mix the cement with the impacted soil. A sample of the stabilized material, DS-17-18, was collected and submitted to TestAmerica for analysis of TCLP metals. The lead TCLP result for DS-17-18, 14.6 mg/L, exceeded the TCLP limit of 5 mg/L. As a result, on July 18, 2007 an additional 3.4

tons of Portland cement was mixed with the cement/soil mixture using the excavator. A new disposal characterization sample, 17-DS-19, was collected and submitted to TestAmerica for TCLP lead analysis. The analytical results showed that the lead level (0.0468 mg/L) was below the TCLP limit, and the Portland cement had stabilized the lead in the soil to reduce its leachability. The stabilized material was suitable for off-site disposal as non-hazardous waste.

Photographs of the excavation activity are shown in Appendix D.

Phase I Sampling

The general sample collection information presented above in **Section 3.4.1** applies to the work completed at SEAD-17.

During the Phase I excavation, seven perimeter samples and 36 floor samples (plus two field duplicates) were collected between July 13 and July 18, 2007 and submitted to TestAmerica for analysis of selected metals. Two Phase I floor samples exceeded the cleanup goal for lead (1,250 mg/kg): lead was detected at 17EXFLE5-01 and 17EXFL-F2-01 with concentrations 1,910 J mg/kg and 1,500 mg/kg, respectively. The failed sample locations are shown in **Figure 3-2**. All other samples met the cleanup goals for metals.

On July 18, 2007 five split soil samples (plus one field duplicate) were collected by USEPA representatives and submitted for analysis by the USEPA. The analytical results for the samples the USEPA collected varied from the analytical results for the split samples analyzed by TestAmerica. The table below summarizes the validated TestAmerica analytical results and the USEPA analytical results for the split samples. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher values for samples 17EXFL-G3-03 and 17EXPR-D2-02 were greater than 1,250 mg/kg for lead (2,210 mg/kg and 2,300 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids D2 and G3, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed between July 30, 2007 and August 2, 2007 to remove 1-foot of soil associated with the two failed samples and two of the USEPA split samples. The Phase II excavation consisted of removing soil in the four following areas, shown in **Drawing C-5**:

- (1) An additional foot of soil was excavated from the floor of Grids E5 and F2, so that the total depth of excavation in these areas reached 2 feet below the original ground surface. This was due to levels of lead detected in floor samples 17EXFL-E5-01 and 17EXFL-F2-01;
- (2) An additional foot of soil located within Grid G3 was excavated so that the total depth of excavation in this area reached 2 feet below the original ground surface. The additional excavation was conducted due to the higher of the pair of sample results from the split sample 17EXFL-G3-03 (USEPA Sample ID 17EXFL-G3-02) exceeding the lead cleanup goal; and
- (3) The excavation area was expanded laterally in Grids D2 and E2 beyond the original excavation boundary to a depth of 1 foot of soil due to the higher of the pair of sample results from the split sample 17EXPR-D2-02 exceeding the lead cleanup goal.

An additional 570 cy of soil was removed from SEAD-17 during the Phase II excavation. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the final excavation areas and the final depths of excavations.

Phase II Sampling

Phase II confirmatory sampling was completed between July 30, 2007 and August 2, 2007 at the areas excavated during Phase II. Five floor samples and one perimeter sample were collected at the following locations:

- Floor sample 17EXFL-D2-01 was collected at Grid D2 at the same location (northing and easting) as excavated sample 17EXPR-D2-01;
- Perimeter sample 17EXPR-D2-03 was collected outside of the new excavation area in Grid D2;
- Floor sample 17EXFL-D6-02 was collected at Grid D6 under the location of the former stockpile of stabilized soil to confirm that all lead contamination was removed;
- Floor sample 17EXFL-E5-02 was collected at the center of Grid E5;
- Floor sample 17EXFL-F2-02 was collected at the center of Grid F2; and
- Floor sample 17EXFL-G3-04 was collected at Grid G3 at the same location (northing and easting) as excavated sample 17EXFL-G3-01.

All Phase II samples met the cleanup goals. All final samples representative of soil remaining on-site met the cleanup goals, shown in **Table 3-3**.

The discussion above details the field activities and the removal of soil associated with samples that failed to meet the lead cleanup goal. Therefore, the data for samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, but are not included in the final confirmatory dataset, presented in **Table 3-3**. The locations of all final confirmatory samples are shown in **Drawing C-5**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-2**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter Length	Frequency	No. of	No. of Final	No. of QA/QC
	of Excavation	Requirement	Samples	Samples	Samples
	Area	_	Required	Collected	Collected ¹
Floor	69,560	1 per 2,500	28	37	1
Samples		sf			
Perimeter	1396 ft	1 per 50 lf	28	34 ²	1
Samples		_			

1. QA/QC samples included collection of a field duplicate.

^{2.} The number of final perimeter samples includes nine historic RI samples (listed in Section 2.1) to define the limits of excavation.

All excavation activities were completed on August 14, 2007. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the phases and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.5.2 Building Demolition

As part of a separate effort performed under a different contract, both buildings (Building 367 and 311) were demolished. The Army elected to remove these buildings since it was more cost effective to remove them rather than decontaminating the buildings in order to comply with RCRA requirements. The detailed discussion of the building demolition actions can be found in the Building Demolition and Cleaning Report (Parsons, 2008).

3.5.3 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated material at Ontario County Landfill in Flint, NY. A decontamination area was setup at the gate entering SEAD-17 from the north, and a stockpile staging area was setup within the excavation area adjacent to the decontamination area. A total of 10.2 tons of Portland cement was provided by Riccelli Enterprises, Inc. to stabilize the lead contaminated soil prior to disposal as non-hazardous waste off-site. Truck load out was completed by August 2, 2007. A total of 3,540 tons (143 loads) were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.5.4 Site Restoration

The excavation areas that extended to 2 feet or more bgs. were backfilled with clean bank-run gravel provided by Riccelli. Details of the borrow source material sampling are discussed in **Section 3.4.6**. The rest of the site was graded to promote positive drainage. The areas at SEAD-17 that were vegetated prior to the remedial action were seeded to restore the vegetation. The selected seed mixture consisted of the following:

30% Timothy 30% Perennial Ryegrass 15% Alfalfa 10% Red Clover 10% While Clover 5% Ladino Clover

The crew demobilized from the site on August 13, 2007.

3.6 CONSTRUCTION COSTS

The total construction costs for the Remedial Actions at SEAD-16 and SEAD-17 were approximately \$717,300. The cost break down is as follows:

Engineering/Oversight	\$94,000
Construction	\$600,000
Analytical Laboratory	\$23,300

4.0 SUMMARY OF DIFFERENCES FROM THE FINAL WORK PLAN

In general, there were no substantive changes between what was proposed in the Final Work Plan and the work completed during the construction activities in the field. This section summarizes the deviations from the Final Work Plan. Noncompliance of the sample quality control limits from the project limits are discussed in detail in the data validation report (**Appendix H**).

4.1 TEMPORARY STAGING AREAS

For SEAD-16, the Final Work Plan designates an area within the excavation area to the north of Building S-311 as the temporary staging area. During the excavation, an area within the excavation area that is adjacent to Building S-311's southwest corner was used as the temporary staging area based on site conditions and professional judgment.

For SEAD-17, the temporary staging area assigned in the Final Work Plan was used during the excavation.

The temporary staging areas used during the excavation are shown in **Drawings C-2** and **C-3**, respectively, for SEAD-16 and SEAD-17.

4.2 POST-EXCAVATION CONFIRMATORY SAMPLE COLLECTION

The post-excavation confirmatory samples were collected in accordance with the frequency requirement proposed in the Final Work Plan. According to the Final Work Plan, confirmatory samples will be collected from the floor of the excavation at a frequency of one sample per 2,500 square feet, or one sample per 50-foot by 50-foot grid. Floor samples were collected for all the excavated grids after the final excavation except when bedrock was encountered, which occurred at Grid E5 and at Ditch #1 in Grid B8.

4.3 EXCAVATION VOLUME

According to the Final Work Plan, 2,102 cy of soil were expected to be excavated from SEAD-16 and 2,590 cy of soil was expected to be excavated from SEAD-17. The estimates in the Final Work Plan were volume estimates from the ROD. The cleanup goals presented in the Final Work Plan differ from the cleanup goals in the ROD, as they reflect new NYSDEC cleanup soil guidance. As such, the limits of excavation were modified in the Final Work Plan based on the updated cleanup goals, which resulted in adjustments to the limits of excavation from those presented in the ROD. As a result, the excavation volume was different from those estimates presented in the Final Work Plan.

Based on the actual tonnage of soil removed, the estimated ex-situ excavation volumes from SEAD-16 and SEAD-17 are presented in **Table 3-1**. A total of 1,862 cy of soil was excavated from SEAD-16 and a total of 2,565 cy of soil was excavated from SEAD-17.

5.0 POST-CONSTRUCTION ACTIVITIES

5.1 Groundwater Monitoring Activities

Groundwater monitoring of the six existing wells (MW16-1 through MW16-7, with the exception of MW16-3, which was destroyed during the construction activitics) shown in **Drawing C-2** at SEAD-16 was completed on December 20 and 21, 2007; and groundwater monitoring of five existing wells, MW17-1 through MW17-5) shown in **Drawing C-3** at SEAD-17 was completed on December 19 and 20, 2007. Prior to the remedial action, the soils had been impacted by heavy metals. The Remedial Design Report (Parsons, 2007) summarized that although metals had been detected in groundwater during previous sampling events, the groundwater was not impacted by site activities based on a comparison to groundwater data collected from unaffected parts of the Depot. This post-excavation sampling events, and to check the groundwater concentrations compared to the GA standards, and to determine whether further action is needed for groundwater at SEAD-16 and SEAD-17.

Groundwater samples were collected using low flow sampling techniques at SEAD-16 and SEAD-17 in December 2007. A bladder pump was used to collect the samples at the 11 wells. Sampling procedures, sample handling and custody, holding times, and collection of field parameters were conducted in accordance with the "Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP)" (Parsons, 2006c). Samples were collected from the 11 wells and submitted to TestAmerica for analysis of antimony and thallium by USEPA SW846 Method 6020, mercury by USEPA SW846 7470A, and all other target analyte list (TAL) metals by USEPA SW846 Method 6010B. One duplicate and one matrix spike/matrix spike duplicate (MS/MSD) were collected at MW16-1. In the field, pH, oxidation-reduction potential (ORP), dissolved oxygen, conductivity, and temperature were measured with a Horiba water quality meter. The turbidity was measured using a Lamotte turbidity meter.

SEAD-16 Data and Analysis

Groundwater elevation data collected during previous investigations indicate that groundwater generally flows in a southwesterly direction at SEAD-16; however, groundwater elevation data also indicate that there may be a regional high southwest of the Building 311, which could create local fluctuations in groundwater flow direction. As a result, it is difficult to determine which wells are upgradient or downgradient of the site. Instead, wells are identified relative to their proximity to the soil excavation areas. Three wells, MW16-1, MW16-2, and MW16-5, monitor the quality of the groundwater outside the areas that were excavated. Monitoring wells MW16-4, MW16-6, and MW16-7 monitor the groundwater quality at locations within the excavated area. The soils that required excavation were impacted by heavy metals and the soils in the areas outside of the excavated areas were not impacted by historic site conditions.

A summary of the post-remediation groundwater data for SEAD-16 is presented in **Table 5-1**. At SEAD-16, five metals (antimony, iron, lead, manganese, and sodium) were detected above their respective NYSDEC Class GA groundwater standards. The maximum detections of four of the five metals (antimony, lead, manganese, and sodium) were observed at MW16-7, located within the historically soil-impacted area. At MW16-7, antimony was detected at 9.58 μ g/L compared to its NYSDEC Class GA

groundwater standard of 3 μ g/L, and lead was detected at 26.5 μ g/L compared to its respective NYSDEC Class GA groundwater standard of 25 μ g/L. The maximum detections of manganese and sodium (631 μ g/L and 68,400 μ g/L, respectively) were also found at MW16-7. Antimony and sodium were both detected in one other well located inside the excavated area, MW16-4, at concentrations of 5.11 μ g/L and 40,800 J μ g/L, respectively. The sole exceedance of iron was detected within the excavated area at MW16-6 with a concentration of 418 μ g/L, compared to the GA standard of 300 μ g/L.

To a lesser extent, antimony, iron, and sodium were detected in the wells located outside of the excavated area (MW16-1, MW16-2, and MW16-5). Antimony was detected in one of the wells located outside the excavated area, MW16-2, at a concentration barely above the GA standard (3 μ g/L) of 3.36 μ g/L. Iron exceeded its GA standard of 300 μ g/L at MW16-6, with a concentration of 418 μ g/L. Sodium was detected in each of these three wells at estimated concentrations ranging from 24,200 μ g/L to 49,600 μ g/L. A review of the data indicate metals were detected at the monitoring wells located on all sides of the site and at wells located both within and outside of the excavated area; the concentrations of metals detected at the monitoring wells do not vary significantly based on the location of the wells at SEAD-16.

The table below shows the maximum concentrations of antimony, iron, lead, manganese, and sodium in the groundwater at SEAD-16 compared to the maximum concentrations observed in the SEDA site-wide background dataset.

Parameter	Max. Detection (µg/L)	Max. SEDA Background (µg/L					
Antimony	9.58	52.7					
lron	1200	69,400					
Lead	26.5	34.8					
Manganese	631	1120					
Sodium	68,400	59,400					

The table above shows that, with the exception of sodium, the metals detected at SEAD-16 were detected at concentrations below SEDA background levels.

Thallium was detected in the groundwater during the RI sampling event in one sample but not in its associated duplicate. Thallium was detected at one of the six wells (MW16-7) at an estimated concentration of 0.03 μ g/L, which was below the Class GA groundwater standard of 2 μ g/L. This post-remediation monitoring event confirms that thallium is not a chemical of concern in the groundwater at SEAD-16.

It is noted that none of the concentrations detected in the groundwater exceeded the USEPA Region IX Preliminary Remediation Goals (PRGs) for tap water. As discussed above, groundwater concentrations detected during the post-remediation sampling event are less than the maximum concentrations of metals observed in groundwater in unaffected portions of the Depot. Post-remediation groundwater sampling confirms that groundwater has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 annually and reevaluate during the 5-year review.

SEAD-17 Data and Analysis

Results of groundwater contour mapping in the RI indicate that groundwater flows to the southwest. A summary of the post-remediation groundwater data for SEAD-17 is presented in **Table 5-2**. Two metals, antimony and sodium, were each detected once at concentrations above their NYSDEC Class GA groundwater standards. All other detected metals were observed at concentrations below their respective groundwater standards. Antimony was detected at a concentration of 3.44 μ g/L at MW17-2, above the GA standard of 3 μ g/L, which was less than the concentrations of antimony detected in the groundwater at upgradient locations at SEAD-16. Sodium was detected at monitoring well MW17-4 at an estimated concentration of 28,500 μ g/L, compared to the GA standard of 20,000 μ g/L. The table below shows a comparison of the maximum concentrations of antimony and sodium detected at SEAD-17 compared to the maximum concentrations observed in the SEDA site-wide background dataset.

Parameter	Maximum Detection at	Maximum SEDA Background
	SEAD-17 (µg/L)	(µg/L)
Antimony	3.44	52.7
Sodium	28,500	59,400

The comparison shows that the concentrations detected at SEAD-17 are well below the SEDA background concentrations. It is noted that none of the concentrations detected in the groundwater exceeded the USEPA Region IX PRGs for tap water. The concentrations of sodium and antimony found in the groundwater do not appear to be related to historic site activities. Therefore, the recent groundwater data confirms that site activities have not impacted the groundwater, though some metals were detected above their respective NYSDEC Class GA groundwater standards. The Army will continue to monitor the groundwater at SEAD-17 annually and reevaluate during the 5-year review.

Complete groundwater data for SEAD-16 and SEAD-17 are presented in Appendix M.

5.2 Routine Inspections

The condition of the existing groundwater monitoring wells at SEAD-16 and SEAD-17 was examined during the December 2007 monitoring event and reported to be in good condition. As noted above, MW16-3 was destroyed during the construction activities. This well was not replaced as groundwater concentrations on the southwest side of Building S-311 are well characterized by two other monitoring wells, MW16-2 and MW16-5. No well maintenance is needed at this time.

Site restoration activities at SEAD-17 included seeding of areas that were previously vegetated. The condition of vegetation at SEAD-17 was inspected in May 2008. A small amount of growth was observed, though most of the seeded area has not yet re-vegetated. The Army will monitor the vegetative growth and will reseed if the area does not vegetate over the summer.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results from the final confirmatory sampling, no further action for soil is required at SEAD-16 and SEAD-17.

Based on the construction work at SEAD-16 and SEAD-17, the Army has conducted the following:

- At SEAD-16, 2,532 tons (1,862 cy) of metals and cPAHs impacted soil was excavated and disposed as non-hazardous waste at Ontario County Landfill in Flint, NY.
- At SEAD-17, 3,540 tons (2,565 cy) of metal-impacted soil was excavated and disposed as nonhazardous waste at Ontario County Landfill in Flint, NY.
- A total of 76 final confirmatory samples (including pre-excavation perimeter samples, postexcavation floor samples, sidewall samples, and perimeter samples) plus seven field duplicates were collected from the SEAD-16 excavation area and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. Four of these samples plus two of these field duplicates were also submitted for cPAH analyses. All final confirmatory samples were collected in accordance with the frequency requirement identified in the Final Work Plan. All final confirmatory samples met the cleanup goals for antimony, arsenic, cadmium, copper, lead, mercury, thallium, zinc, and cPAHs.
- A total of 62 final confirmatory samples (including pre-excavation perimeter samples and postexcavation floor samples and perimeter samples) plus two field duplicates were collected from the SEAD-17 excavation area and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. All final confirmatory samples were collected in accordance with the frequency requirement identified in the Final Work Plan. All final confirmatory samples met the cleanup goal for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc.
- Post-remediation groundwater sampling was completed in December 2007, and results indicate that
 although the groundwater has not been impacted by site activities, concentrations were observed
 above the NYSDEC GA standard. Therefore, the Army will continue to monitor the groundwater at
 SEAD-16 and SEAD-17 annually and reevaluate as part of the 5-year review.
- The Land Use Control Remedial Design (LUC RD) for SEAD-16 and SEAD-17 will be prepared as an amendment to the LUC RD prepared for SEADs 27, 66, and 64A at SEDA. The LUC will be established and maintained to prohibit access to or use of the groundwater and to prohibit residential use until cleanup standards or goals are met in the future by a future owner.

The soil cleanup objectives for SEAD-16 and SEAD-17 have been achieved and no further action is required for soil at SEAD-16 or SEAD-17. Groundwater monitoring will be conducted annually and will be reassessed as part of the five-year review.

7.0 REFERENCES

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Table 2-1 CLEANUP GOALS Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Compounds	Units	Cleanup Goal	
Carcinogenic PAHs ¹			
BTE	mg/Kg	10	
Metals ²			
Antimony ⁵	mg/Kg	41	
Arsenic ³	mg/Kg	21.5	
Cadmium	mg/Kg	60	
Copper	mg/Kg	10,000	
Lead ⁴	mg/Kg	1,250	
Mercury	mg/Kg	5.7	
Thallium ⁵	mg/Kg	6.7	
Zinc	mg/Kg	10,000	

Notes:

BTE = Benzo(a)pyrene Toxicity Equivalence

1. The cleanup goal for cPAHs is the 10 ppm BTE value. The cPAH cleanup goal only applies to SEAD-16.

2. The cleanup goals for metals are the NYSDEC Restricted Use Soil Cleanup Objective for Industrial Use (Table 375-6.8(b)).

3. The cleanup goal for arsenic was replaced with the SEDA maximum background value since the NYSDEC restricted industrial value for arsenic was lower than the maximum SEDA site-wide background value.

4. The lead cleanup goal was derived in accordance with the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996) and in concurrence with NYSDEC and USEPA.

5. Since no NYSDEC Soil Cleanup Objective for Industrial use exists, 1/10th the USEPA Region IX PRG Industrial value was used.

Table 3-1

Summary of Excavation and Disposal Quantities Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

	SEA	D-16	SEAD-17				
	tons	cy ¹	tons	cy			
Phase I	2,212	1,626	2,753	1,995			
Phase II	321	236	787	570			
Total	2,532	1,862	3,540	2,565			

Note:

 The quantities were provided in tons by the weigh tickcts from Ontario County Landfill. The volume was calculated based on a site-specific density. The density values were calculated in the field by weighing three 5-gallon buckets of soil from each site. The density for SEAD-16 was calculated to be 1.36 tons/cy and the density for SEAD-17 was calculated as 1.38 tons/cy, respectively.

SITE LOCATION								SEAD-16							
ORD ID								A8	AS	A8	AУ	85	Bú	Bó	Bo
LOCATION (D								16EXFL-A8+01	16EXPR-A8-01	16EXPR-A8-02	10EXPR-A9-01	IVEXPR-B5-01	16EXEL-B5-01	16EXPR-B6-01	16EXPR-B6-02
MATRIX								SOIL	SOIL	SOI1.	SOIL.	SOIL	SOIL	SOIL.	SOIL
SAMPLE ID								16FXFL-A8-01	16EXPR-A&-01	16EXPR-A8-02	16EXPR-A9-01	TOEXPR-B5-01	16EXFL-Bo-01	IGEXPR-B6-01	LGFXPR-B6-02
FOR OF SAMPLE								Ω	0	(J	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	6/2	0.2	0.2	0.2	0 2	0.2
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Parameter	Units	1 alue	of Detection	Goal	Exceedances	Detected	Analyzes	Value (Q)							
Cateinogenie PAHs															
Benzo(a lanthrasiene	PG KG	2.900	~ Ke,		0	1	-1								
Henzo(a)pstenc	TIG KG	3860	60° e		0	2	-1								
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Arsenie	MG KG	8.9	100".	21.5	0	76	76	295	5.4	5 5	46	6 2	57	57	3.1
Cadnoum	MG KG	5.7	100*.	60	0	76	76	0.08 J	0.44 J	0.29.3	0.18 J	0 6 J	D 27	0.8	010
Copper	MO NO	23100	100.**	10000	p.	76	76	158 J	110	52.2	51.5	169	0.8 1	99	010
l cad	MO KO	11+0	100**	1250	0	76	76	5471	676	239	179	884	t6 6 J	-424	1 2 DF
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compound was not constrained, conceptuation
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 The compound was not detected, the associated repeating time is approximate.

SITE LOCATION ORIDID LSCATION ID MATRIX SAMPLI ID TOP OF SAMPLI- ROTTOM OF SAMPLI- ROTTOM OF SAMPLI- SAMPLI PATE OF CODI								SEAD-16 B7 16EXFL-87-01 SOIL 16EXFL-87-01 0,2 7 19 2007 SA	SEAD-16 B7 I6EXPR-B7-01 SOIL I6EXPR-H7-01 0 2 4-4-2007 SA	SEAD-16 B8 IGEXIFL-B8-01 SOLL IDEXFL-G8-01 0 0.2 7.19.2007 SA	SEAD-16 B8 16EXFL-B8-03 DITCH SOLL 16EXFL-B8-03 0 0 2 7-10-2007 SA	SEAD-16 B9 16EXFL-83-01 SOIL 16EXFL-83-01 0 2 7/19/2007 SA	SEAD-16 B9 I6EXPR-89-01 DITCH SOIL I6EXPR-89-01 0 2 4-4/2007 SA	SEAD-16 B10 IGEXPR-89-02 DITCH SOIL IGEXPR-89-02 0 U.2 4-4/2007 SA	SEAD-16 B10 IGEXFL-B16-01 OUTCH SON IOFXFL-B16-02 tr 0 2 7.19/2007 DU
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Cancinogenic PAHs															
Denzo(a anthra, enc	CG KG	2400	75**		C C	3	4								
Benzo(a)p\rene	PG KO	58.30	50° e		0	2	-1								
Bunzu(b)fluorauthene	PG KG	7500	75%		0	t	1								
Benzolk dhoranthene	UG KG	52.5 1	25~.		0	1	4								
Chrysene	UGIKO	2400	1(3° o		0	2	4								
Dimenzia hianthracene	UG KO	1500	2.5" =		0	1	4								
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BAP Joseph Equivalence*	MG KG	-2 (1 3	100*.	10	0	4	4								
Metals															
Arbusony	MG KG	24.2	×0*-	41	0	60	76	10.8.0	433	18.4 U	12 2 J	18 I U	20 8 J	14 8 3	671
Arsenic	MG KG	K ()	1004*	21.5	0	76	76	17	5.4	5 2	4 2 J	5 R	5.9	77	351
Cadminin	MG KG	27	100**	ω)	0	76	76	0.15.7	0.62	0.25	0 57 J	0.63	0.69	2 2	0 17 3
Courses	MG KG	2300	100**	10000	0	76	76	12.3	67 6	36 6 J	77 7 J	80 4 J	209.3	160.1	14 S J
Lead	MG KG	1160	100**	1250	1	76	76	3541	363	200 J	230 J	342 J	791 J	1050 /	147 1
Menary	MG KU	13	[191]* «	5 7	63	70	76	Ú 075	0.345	0 222	19	0 904	0 449	0.613	0 222
Thalloung	MC KG	1 385 *	4* •	67	0	3	76	0.88 U	1.1 U	0.81 U	0 21 12 0	0 S U	0.94 0	0 FR B	0.89 UJ
Zaus	MG KG	711	100*,	10000	e	76	76	44.8	112 2	60 [146 1	111	194	222	6291

"lote+		
(1) The creatury goal values are from Ta	ible 2-1 of SFAD=14-17 Remedial Dorign Work Plan	
(2) Sample-diplicate path were average in the table.	ed and the average certilizewere used in the anninary station	ur presented
ty The maximum detected emicrophysics	in war of tarried from the average of the raniple and its dript	n ale
4) Benz Hagework (DAP) Tourith Hip	is stonce value was calculated by inbutting the detection	laren C
with the method detailors (and be	non-detect ecodes and taking men-detect values at halt saline	
The tracers squarelent factors (TEF	D for the NYSDFC BTF gaskdings were as follow	
	JTA25	SYSDEC IF:
	Prenziwa antifu accene	91
	Benzoi azorane	1
	Henziwn if faus an thene	P 1
	Henzon (fluorauthenz	D-01
	('bry-cone	D O I
	fibben i, a bjanihrauene	1
	Indense1 1 Indepetence	D 1

Stepsona was not detected
 the reported value is an extensi editoria to
 the reported value is an extensi of second the associated reporting limit is approximate.

SITE LOCATION GRID ID LAX ATUN ID MATRIX SAMPLE ID IOP OF SAMPLE BOTTON OF SAMPLE SAMPLE DATE QC CODE STUDY ID						Number		SEAD-16 B10 IGEXFL-B10-01 DF1CH SOIL 66XFL-B10-01 6 0 2 7-19 2007 SA RA	SEAD-16 B10 I6EXPR-810-01 DITCIT SOIL 16EXPR-810-01 0 2 4 4 2007 SA RA	SEAD-16 B10 IGEXPR-B10-02 SOIL IGEXPR-B10-02 0 0 2 4.4.2007 SA RA	SEAD-16 C4 H6EXPR-C4-01 I6EXPR-C4-01 0 0 0 2 4 4 2007 SA RA	SEAD-16 C5 16EXFL-C5-01 16EXFL-C5-01 16EXFL-C5-01 0 0 2 7.19/2007 SA RA	SEAD-16 C6 16EXFL-C6-01 16EXFL-C6-01 16EXFL-C6-0 0 0 2 7:19/2007 SA RA	SEAD-16 C7 16EXFL-C7-01 16EXFL-C7-01 16EXFL-C7-01 0 0 2 7.16-2007 SA RA	SEAD-16 C8 16EXFL-C8-01 SOIL 16EXFL-C8-01 0 2 7:15/2007 SA RA
		Valimum	Frequency	Cleanup	Number of	of Times	Number of								
t'ai ameter	Lats) alue	of Detection	Goal	Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q)	Value (O)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
BenzojaJanibracene	DO KO	24081	75%		0	1	4								
Renzista)ps rene	CO KO	581241	< ()*		0	2	4								
BenzothDuoranthene	UG NG	75110	75**		n	4	4								
Benzoik aluorathene	LIG KG	12.5	25**		0	1	4								
Chrysene	DG KG	2300	40° .		- 0	2	4								
Fibenzia hanthracene	DG KG	1505	25**		0	1	4								
Indeno(1.2.3-ed)pyrene	LIG KO	easile.	50° a		0	2	4								
BAP Toxicity Equivalence*	MG KG	4013	100**	10	0	4	1								
Victale															
Antimum	MG SG	24.2	>0° +	41	0	60	76	6 J	9.9 J	2.1 J	3.6 J	20 I U	0 68 U	24 2	0 63 U
Arsenic	MG KG	2.7	10:3**	215	0	76	76	261	5.3	4 8	3.3	67	5 1	72	2 5
Cadmourn	NO KO	• 7	(DO* a	60	0	76	76	0.14.7	0.8	0.42	0 29	0.3	0 19 1	0.61	0 15 J
Copper	MG KG	2394	100.04	10.000	0	76	76	3213	142	44 3	68.5	20.4 /	13.7	380.1	14 /
l cad	MO KO	1100	2017**	1250	0	75	76	139.1	786	137	589	23.5.1	32.6 J	1160 1	1191
Marcury	MG KG	11	\$10±***	57	0	76	76	0 173	0 385	0.357	0.026	11	0.062	0.016.1	0.53
fhelliup,	MO KO	1.185.1	֥	67	0	1	?6	0 %2 UJ	1 1 U	0 92 U	0 GS U	6 88 U	0 84 17	0 76 U	077 U
Zarx.	MG KG	711	100%*	10000	0	76	76	515 J	143 J	815 J	62 G J	64 7	30-4	697	48.3

Solica (1) The channel guilt values are from Table 2-1 of \$LAT=10.13 Knownal George Work Plan (2) Zooph-disphate pairs were, neuroged and the in-order, territa was used with channels introduce practiced and/or table.
(3) Doministrative deviced consent down was obtained from the resurged of the sample and the deplocate (3) Doministrative (DA) Toronto Kapital Dance value was calculated by substrating the devices burn with the method aftersease have 10 providence restrict and using investors values at blance.

Dectorsory equivalent tectors (1) if (for the NYNDEC BIE guidelines were as follow
--

	STISTIFC TEF
. FAB	
Densities a Junification of the	¢1
** em a test a test income	1
Dep. orbitionanthese	e I
ftenzeek fluoranthene	2.01
Chrysene	0.01
Caburga hiarthrasins	1
Indexed 1.5 Socilipscore	D 1

comprising was not directed.
 exception divations an extension consistion.
 the comprising was used detected, the associated user time on its supprovision.

SITE LOCATION								SEAD-16	SEAD-10	SEAD-16	SEAD-16	SEAD-16	SEAD-10	SEAD-16 D4	SEAD-16
GRID ID								C9	C10	C 10 16EXPR-C 10-01	C10	16EXFL-D4-01	D4 16EXPR-D4-01	16EXPR-D4-02	D5 16EXF1-D5-01
Loc ATION ID								IoEXFL-C9-02 SOIL	16EXFL-C10-01 SOIL	SOIL	16EXPR-C10-03	SOIL	SOIL	SOIL	
MATRIX SAMPLE ID								16EXFL-C9-02	toEXFL-C10-01	16EXPR-C10-01	SOIL INEXPR-C10+03	16EXFL-D4-01	16EXPR-D4-01	16ENPR-104-02	SOIL 16EXI:L-D5-01
SAMPLE ID TOP OF SAMPLE								101.AFL -C9-02	IGEXFL-C10-01	INEATS-CIU-01	10EXPK-C10+03	0000000	106AFR-14-01	102.XFR-104-02	10EXPL=05=01
BOTTON NAMELL								0 2	0 2	0 2	0 2	0.2	0.2	0.2	0.2
SAMPLE DATE								8:2:2007	8-2 2007	4.4/2007	8/2.2007	7 19/2007	4.4/2007	4/4/2007	7'19.2007
OC CODE								SA	5.2 2007 SA	4.4-2007 SA	\$A \$A	SA	4-4-2007 S.A	\$A	5A
STUDY ID								RA RA	RA	RA RA	RA	RA	RA	RA	RA RA
STOLET						Number		154		101	104	104	1003	101	10A
		Maximum	Frequency	Cleanup	Number of	of Tunes	Number of								
Parameter		Value	of Detection	Geal	Exceedances	Detected	Analyzes	Value (Q	Value (Q)	Value (O) Value (Q)	Value (Q)	Value (Q)	Value (Q)	11-1
Carcinogenic PAHs	Unats	1 4104	of Detection	Crost	Exceedances	Detected	Anasyzes	vanie (Q	y value (Q)	value (Q	value (Q)	*attic (Q)	vance (Q)	vanie (0)	Value (Q)
Benzik ajarithrazeno	LO KO	2400	75*		0	1									
isenzog a jantara zenie Zsenzog a joy renie	LOKO	5800	50%		0	-	1								
henzo(h)fl toranthene	LO KO	7500	75%			2									
					0										
he izofkillaoranthens	116-66	515	25**		p	1									
Christene .	0.6 86	2305	500 •		0	ź	-								
Dibinz(a biant), racens	UG KG		25**		0	1	-								
Indeno(12,3-cd)pyrere	UG KG	6.190	56°*		0	2	-1								
bAL Loocity Equivalence*	MG KG	11213	100* .	14	υ	4	4								
Metals															
Antimosi	MO KG	24 2	×(-+ =	41	U	GQ	76	127	361	72)	1011	10 5 J	163 J	11.3	0.65 ĽJ
Arsenic	MO KO	2.0	100**	21.5	D	76	76	73	3.2	5 2	4.5	451	8.5	51	186
Cadmium	MO KG	57	10.10 0	60	0	76	76	0.5	0.80	0.93	0.65	0.22.1	0.74	0.03	0.22 1
Capper	M0 KC	2300	100**	10000	0	76	70	25.3	25.6	109	128	>7	196	154	16.1
1.034	MG KO	1 [164	100**	1250	0	76	76	27 3	79.2	530	659	229-1	1070	887	911
Mercury	MG KG	13	100**	57	0	76	76	0 163	0 234	0.331	15	0 \$05	0.126	0 104	0.047
Thallium	MG KO	1 185	1.*	Ex 7	0	1	76	n 75 tJ	6 69 U	10	071 U	074 UJ	074 U	0 87 U	0 % () 1
Ame	MO KO	7[]	100**	100.00	0	76	76	54 7	K1 0	140 J	109	897 J	153-3	176 J	4\$7J

with (1) The science goal values are from Table 2-1 of 3-1 Value 1-2 Remedial Licetge Work (Pan (1) Scienced-optimate pains were averaged and the science value average of the science protocol in the table. (1) The matta must doubled concentration was obtained from the sverage of the sample and to depleture (12) The matta must doubled concentration was obtained from the sverage of the sample and to depleture (12) The matta must doubled concentration was obtained from the sverage of the sample and to depleture (12) The matta must doubled concentration was obtained from the sverage of the sample and the depleture with the method devicesion into the wave execution was an integration between a follow. The instance segmenting theorem (TT F and the SNY-DEF (FTE gendeming was as a follow).

the protection of	for your through	(13.5, 1ot Mit 5	CAUDEC STEL	Cardelines were to	tol) ws

JP.VLB	SYSDEC IT I
Durget standy avene	0.1
Demonstrations	1
Denzeth of the anthems	0
Heazingk (Burnanshane	0.01
Choures	6.91
Enhewica hi anthracene	1
Indument 2 Trucksporters	01

C. * scorpe and main new detected 3 - the reported scale is survigolated societation. C2 + the composed war not do to 6.4 New stock and reporting long to reproceeding.

SUL FOUND								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-10	SEAD-16
GRID ID								DG	D7	128	D8	D8	D8	D8	D9
LOCATION ID								16EXFL-D6-01	16EXFL-D7-01	16EXFL-D8-02	16EXSW-D8-03	16EXSW-D8-04	IGEXSW-D8-06	16EXSW-D#-06	16EXFL-D9-01
MATRIX								SOIL	SOIL	SOU,	SOIL	SOIL.	SOIL	SOIL	SOIL
SAMPLE ID								16I;XI-1,-(Xi-0)	16EXFL+D7-01	16EXI:L-D8-02	16EXSW-D8-03	16EX\$W-D8-04	16EXSW-D8-07	16EX5W+D8+06	16EXFL-D9-01
LOF OF SAMPLE								0	0	U	0.5	0.5	1	1	0
BOTTOM OF SAMPLE								0 2	0.2	0.2	1.5	15	2	2	0.2
SAMPLI, DATE								7 19 2007	7 19:2007	7,30/2007	7.19/2007	7.19.2007	7/30/2007	7/30/2007	7.192007
OC CODE								SΛ	SA	SA	S۸	SA	DU	S٨	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
						Number									
		Matimum	Frequency	Cleanup	Number of	of Times	Number of								
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes ¹	Value (Q)	Value (O)	Value (O)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenie PAHs															
Benzel synthescene	PG KG	2400	7500		0	3	4								
Benzolaipyrene	LIG KG	58.00	50° u		0	2	4								
Ben roth illuoranthene	CO KG	7500	75*e		0	4	4								
Benzolk (Junianthene	UG KG	52.5 '	25**		0	1	1								
Chrysene	TIG KO	2 500	50° .		9	2	3								
Dibenzia hianthracene	UG KG	1600	25".		0	1	-1								
Indeno(1,2 + cd/pyrene	UG KO	6660	50° .		0	2	4								
BAP Toxicity Faturalence*	MG KG	2013	109**	Le	0	4	1								
Metals	1000 1000	7.015	100												
Attimon	MG KG	24.2	80° e	41	0	60	76	0 75 UJ	0 64 UJ	163 J	11	26.1	2 J	2,3 J	7 % J
AINER	MOKO	89	100*+	21.5	D	76	76	325	317	3 2	4 6	46	4.8	3.6	323
Cadmium	MGNO	\$ 7	100**	60	0	76	76	0 09 J	011	0.22	0.26	0.23 J	02,5	0.05 1/	L F I G
Copper	MG KG	21-20	100**	1000	D	76	76	21.9	19.4	25 2	20 J	23 3 J	24	14.6	371
Lead	MG KG	1150	100*	1250	a	76	76	1741	16 6 J	206 /	13 7 J	50 d J	5.1 8.1	472 1	221 J
Musan	MG KG	43	100*.	5 7	0	76	76	0.062	0 035	1.6.1	0.025 J	0.046	0.074 J	0.087 [0.436
i ha jium	MG KG	1.182	-1° •	67	¢	3	70	0 92 UJ	0.79 U I	0.82.1	0 82 U	678 U	075 U	076 U	0 76 UJ
1 n	MG KG	211	100**	10000	0	70	76	80.2	97.1	55 2 1	48.3	49.6	5431	44.4.1	70 5 1
1.00%	1407 60	1.9			0	2.62	10								

Versi (1) The design post velocies as from Table 2-1 of 2-AT2-10 (17 km edual Tazing) Work Tan 3: Single-degle, inc pairs were receiped with the inclusive rolation area used in the summers stational proceeding in Sty table (1) The maximum detection of the inclusive receiver and the even ge of the sample and the digition (1) The maximum detection of the inclusion of the even ge of the sample and the digition (1) The maximum detection of the inclusion of the even ge of the sample and the digition (1) The maximum detection of the inclusion of the even ge of the sample and the digition (1) The maximum detection of the inclusion of the even ge of the sample and the digition with the method maximum data resolution of the methods are start and data of the method Detection, regression takeness (TTF), for the ST2014 (-10 TT) gendences was as follow applied.

(PAL)	SYSUEC (FF
Figure 2 of a jamility system.	0.1
Benu of a lippe energy	1
Benzoch tils a anthens	0.1
Tenzora (Duorauthane	0.01
Christen	6-01
Esborg, a branche a spe-	1
Indepent 2, 3m, deposence	11

12 - composited was not detected in the reported value is an externated concentration. If 1 - the composited was not detected, the associated is porting from its appearantle.

P. 1917 Projects Suncea P10711-81. Mie10 7 Construction Completion Report Draft Final Tables Tables 3-2 S-10_final_confirm_soil_data xit S-16_final_soil_data_B&S

MEELOCATION GRID ID EOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID						Number		SEAD-16 E3 16EXPR-E1-01 SOIL 16EXPR-F1-01 0 0 2 4-4 2007 SA RA	SEAT> 16 16EXFL-E4-01 SOIL 16EXFL-E4-01 0 0.2 7.19:2007 SA RA	SEAD-16 E4 [6EXPR-E4-0] SO(L [0EXPR-E4-0] 0 0 2 7/19/2007 SA RA	SEAD-16 E5 10EXFL-E5-01 SOIL 10EXFL-E5-01 0 0 2 7 19 2007 SA RA	8EAD-16 E5 16EXSW-E5-01 SOIL 16EXSW-E5-01 0 5 1 5 7 19 2007 SA RA	SEAD-16 E3 16EXSW-E5-02 SOIL 14EXSW-E5-02 0 5 1 5 7-19-2007 SA RA	SEAD-16 E5 16EXSW-E5-03 SOIL 16EXSW-E5-03 0 5 1 5 7.19/2007 SA RA	SEAD-16 E5 16EXSW-E5-04 80HL 16EXSW-E5-04 0 5 1 5 7 10 2007 8A RA
		Masimum	Frequency	Cleanup	Number of	of Times	Number of								
Parameter	Umb	Velue	of Detection	Goal	Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Ben/o(a)anthracone	UG NG	2400	75°a		Ô	3	1								
lsenzo(appsrene	LIG KG	5600	50° u		0	2	-								
Elenzo(b)(Illusianthene	UG KG	7500	75° o		D	1	1								
Isonzo(k #Inoranthene	UG KG	125	25**		0	1	4								
Chry sene	UG KG	23/00	50° a		0	2	-4								
Dibenzia h)quilitacene	UG KG	1500	25°.		0	1	4								
Indeno(1.2.3-sd)pstene	L'G KG	5006	30*a		0	2	4								
BAL Losiety Equivalence*	MG KG	9011	100*+	10	0	4	4								
Metals															
Antimony	MG KG	24.2	80*.	41	0	60	76	56 J	[4]	79 J	28.1	18.2	562	3.1.7	14 G J
Arsenic	MG KG	5.0	100**	21.5	0	76	76	43	251	451	475	8.9	53	5.5	71
Cadmium	MG NG	۰7	100%	60	g	76	76	0.76	0 12 1	0 19 3	0 13 J	0 54	0.23	0 23 1	0.39
Copper	MG KO	2300	100**	10000	0	76	76	83 5 J	21.9	59.8	47 2	125 J	47 J	33.8 1	75 J
i end	MG KG	1150	100**	1250	ų	76	76	444 (22 2 J	233.3	5381	-149 J	234 J	646 J	281 J
Mercury	MG NO	1 1	100**	\$ 7	0	76	7n	0 409	12	0.315	0.148	1.5	0.122	0 149	0 987
Thallium	MG KG	1385	-{*•	0.7	6	3	76	13.0	0 79 UJ	0 82 UJ	07t U.t	078 U	072 U	07×U	079 U
	MG KG	711	1004	10000	õ	76	76	122	53.4.1	108 J	62 J	146	87.2	817	118
								122	2014	1011 /	02.7	110		511	110

Notes 13 The channe goal values are from Table 2-1 of VE-VLo. 0-17 Romedial Everyn Work, Pfan 1-17 Sumplexhiple, as purchase averaged and de inverger collinister modium de sammars statismus presented.

(1) supported to Legion Stress energies and the energies in this near near this takes the same in the same in the same intervent of the same intervent

(PA59	NUSDEC 19:5
Being or a familier as one	0.1
Party Halporetic	L.
Henzieth Huoranthens	0.1
Denz Mk illustrambune	0.01
• has sense	0.01
Deliverate a trianstation of	1
leidence 1 2 km digisterie	0.1

component was not downed.
 the reported value is an estimated concentration.
 the component was not detected the associated reporting linearies approximate.

SITE LOCATION								SEAD-16	SEAD-16	SEALF16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								Eo	EX	E9	E٩	E12	E13	E13	F3
LOCATION ID								16EXEL-E6-01	IOEXFL-E8-01	16EXFL-E9-01	16EXPR-E9+01	16EXFL-E12-01	(6EXFL-E13-0)	16EXPR-E13-01	16EXFL-F3-01
MATRIN								SOII.	SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL	SOIL
SAMPLE ID								165XFL-E6-01	IGEXFL-EX-01	16EXFL-E9-01	IGEXPR-E9-01	16EXFL+E12-01	16EXFL-E13-01	16EXPR-E13-01	16EXFL-F3-02
FOP OF SAMPLE.								0	()	0	0	c	0	Q	0
BOLLOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7 19 2007	7-19/2007	7 19:2007	4.4-2007	7,19-2007	7/19/2007	4-4.2007	7.19/2007
QC CODE								SA	SA	SA	SA	5A	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
						Number									
		Maximum	Frednency	Cleanup	Number of	of Times	Number of								
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 2	Value (Q)	Value (Q)	Value (Q)	Value (Q)				
Carcinogenic PAHs															
Benzogajanthracene	UG KG	2400	750.		0	3	4								
Henzo(a)pyrene	UG KG	5500	j()*•		0	2	4								
fienzo(b)(l) surantisene	UG KG	7560	75*.		n	1	4								
Benzo(k)(luorantnunc	UG KG	52.5 1	25**		0	1	4								
Chry sene	UG KG	2306	50° n		0	2	4								
Dibenzta hjanilitacene	LO KG	1500	257.4		0	1	4								
Indepo(1/2/3-ud)pyrene	LG KG	6300	50% .		Û	2	1								
DAP Toxicity Equivalence*	MG KG	9.013	100**	10	v	4	4								
Metals															
Antimony	MG KG	24.2	×0".	41	0	60	76	37 J	077 J	3.6 J	0.65 UJ	6.6 J	0.66 (1)	3.2 /	113
Arsenis	MG KG	× 2	100*.	21 5	0	70	76	5.1	317	121	4 2	59 J	491	7 %	331
Cadmium	MG KG	5.7	100* •	641	0	70	76	0 I7 J	0 [4 J	0111	0.3\$	0 23 J	0 07 J	1	011
Copper	Mir KG	2340	100*.	10000	G	76	76	28.6	144 J	316.3	[4][48.4.1	20 []	50.6.1	14 []
Lend	MG KG	1 1 10	100**	1250	0	76	76	613.1	733	112 J	70 1	-461 J	18.6.7	187 1	38 6 J
Mercury	MG KG	13	100**	5 7	0	76	76	0.041	0.041	d 471	0.01.3	0 097	0.021.1	0.042	0 134 3
Thellium	MO KG	1.384	4" .	6.7	U	3	76	0.78 UJ	0.75 UJ	0 79 UJ	0 S U	0.81 U.I	0.8 UJ	0 82 J	0 87 U.I
Zini	MO KO	711	100*.	10000	U	70	76	71 J	3373	46.2.3	36 2 J	59.4 ./	52 9 1	141	58.2 1

No.24 (1) De clamp pul values ne trom fable 2-1 of SFATE-16-17 Romedul Denge Work Plan (2) Sample-dight ale pars nere averaged and the inverse scotto were used in the sampare stationics presented

(2) Sample duply an pairs in an everygenerative obtained from the average of the stample and its duplicate in the axis and detected on accention was obtained from the average of the stample and its duplicate (3) Fee maximum (BAT) massing a gendines of this way obtained by the duplicate of the wash in student discrimenting the subsecrite visition and axis genomethet visition and that visits (bits broach) equivalent factors (1) Fe for the SYS(LC) PTT gendiner was at balance.

		The transity office	valorif factors (1)	FURTHER NAMED IN	to be guidelines were as incluse.	
--	--	---------------------	---------------------	------------------	-----------------------------------	--

17414	WYSDEC REF
Protoca undeal one	10 E
Henzoca govrane	1
Benzeeh Jihum and Suma	01
Transverk plans wateress	6 di
1 Tark serve	0.05
Cobustica hoandhras coe	1
Ind. and 2 be departure	5.1

compound way and detected.
 the compound way an extension concentration.
 the compound way is it detected in the an excented reporting function approximate.

SITELOCATION								SEAD-16	SEAD-16	SEAD-10 F3	SEAD-16 F4	SEAD-16 F8	SEAT-16 F9	SEAD-10 F9	SEAD-16 F9
GRID ID OF ATION ID								16FXEL-F3-01	16EXPR-F3-01	16EXPR-F3-01	10EXFL-F4-01	16EXPR-F8-01	16EXFL+F9+01	1GEXFL-F9-01	IGEXPR-F9-01
MATKIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLUID								10FXFL-F-1-01	16EXPR-13-02	16EXPR-F3-01	16EXFL-F4-01	16EXPR-F8-01	16EXFL-F9-02	16EXFL-F9-01	16EXPR-19-01
DP OF NAMPLE								0120120	0	0	0	0	0	0	0
BOITOM OF SAMPLE								0.2	02	0.2	9.2	0.2	0.2	0 2	0.2
SAMPLE DATE								7 19 2007	4 4,2007	4 4/2007	7 19 2007	4 4:2007	8 2 2007	8 2.2007	4/4 2007
OCCODE								SΛ	DU	SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	KA
						Number									
		Maximum	Frequency	Cleanup	Number of	of Times	Number of								
l'acapieter	l nits	Value	of Detection	Coal	Exceedances	Detected	Analyzes	Value (Q)	Value (())	Value (Q)	Value (())	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cetamogenic PAHs															
Benzol alanthrasene	UGKG	2.10/1	750.		0	3	4								
Eknowlappyrene	UG KG	5500	÷0° •		0	2	4								
Benzoft filturanthene	DG KG	7 Site)	TS*+		0	+	4								
Benzock/Bioranthene	UGKG	52.5	251.		0	1	4								
L'hrs sene	UG KG	2300	<0* e		a	2	4								
Dibenz(a hian,hrasene	UG KG	1600	250,		0	1	4								
Indeno(1/2/3-cd/pyrene	UG KG	6000	50**		0	2	1								
BAP TOACHY Equivalence	MG KG	9.217	100%+	10	U	4	4								
Metals															
Antimony	MG KG	24.2	547° a	41	Û	69	76	121	3.2.1	327	77 J	261	0.61 UJ	0.63 [J]	5 3
Arsenis	MO KG	8 0	100**	21.5	0	76	76	411	4.6	4 9	2.5.1	57	4 8	6.4	5
Calmoun	MG KO	5.7	100.**	60	Û	76	76	0.26 1	0.4	0.52	0.21 J	0.28	0.33	0.45	0 85
Copper	MO KO	23/00	100*4	10000	0	76	76	13.4.3	68.9	73.8	59 9 J	29 7	12 2	15.3	172
Lead	MO KG	1160	10.0**	1250	0	76	76	4333	498 1	170 J	247 J	205	10 1	13.5	643
Menury	NO NO	13	100**	57	0	76	76	0.085 /	0.035	0.023	0.051	0 0 2 2	0.025	0.031	0.021
Thallon	MG KG	1.385	4**	6 *	0	1	76	0 S2 UJ	07313	078 U	0.74 UJ	0.65 U	074 U	24 J	07 U
/m.	MG KG	711	10-3° a	10000	0	76	76	57 5 1	7463	91.9.7	49]	16 S J	40.8	47 \$	144 5

Unice		
(1) The cleanup goal values are from E	ible 2-1 of SEA1w16-17 Remedial Design Work Plan	
C't Sample-duplicate passa were average in thus while	ed and the average resultamers used in the statunary stati	where proceeded
(3) The maximum detected concentrate	si was obtained from the average of the sample and its de	iplicate
(4) Benz-Laipsteine (DAP) Lauren Ere	avrience value was calculated by substituting the detector	HIR STOLEN
with the method detection limit for	non-detect results and taking unn-detect values at halt wat	tin.
The toyouth equivalent factors (TE	Is for the NYSDEC BTE guidelines were as follow	
	.F U h	NUSDEC U
	from the additional other	0
	Benziscopsterie	1
	Denzoth (fluorandhenz	U 1
	Humzoph (fluor anthease	0.01
	L'INVALING	0.01
	Tabun ya hisanitzay ny	1
	Indunial 2 Independent	0.2

12 - composing was not detected. 3 - the reported value p an estimated - uncertaintion. C 3 = the composing was or C forced, the acrossition reporting unit to approximate.

STILLOCATION								SEAD-16	SEA12-10	SEAD-16	SEAD-16	SEAD-10	SEAD-16	SEAD-16	SEAD-16
CRID D								FO	G2	G3	G3	G3	G4	G5	G 5
LOCATION ID								16ENPR-F9-03	16EXPR-62-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02	16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL.	SO!1.
SAMPLE ID								IVEXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	IvEXPR-G3-02	16EXPR-G4-01	16EXFL-05-01	16EXPR-05-02
OF OF SAMPLE								Û	0	Ô	0	D	0	0	0
BOITOM OF SAMPLE								0.2	0.2	- 0 2	0 2	0.2	0.2	0.2	0 2
SAMPLE DATE								8.2 2007	4-4 2007	7 19.2007	4 4 2007	7/19/20/07	4/4/2007	7/18-2007	4-4 2007
QC CODE								SA	SA	SA	SA	\$A	SA	SA	DU
STUDY ID								R.A.	RA						
						Sumber									
		Maximum	Frequency	Cleanup	Number of	of Times	Number of								
Parameter	Units	\ slue	of Detection	Goal	Excerdances	Detected	Analyzes	Value (Q)							
Carcinogenic PAHs															
Events (a) with racione	UG KG	2400	75°.		0	3	4						2400 1	1900 U	160.3
Ken zoCalph tene	the Re-	\$800	>{}° =		0	2	-1						5800	1900 1J	230 J
Benzo(b)(fluoranthene	UGRO	2500	"1°•		tì	3	-1						7500 J	1900 12	170 3
benzotk (fluoranthene	UG KG	52 S 1	2500		Û	1	1						3600 UP	1900 ti	95 3
Chrysene	UG KG	2300	50° e		0	2	-1						2300 J	1900-11	4600 U
Dibenzla blanthraeene	LIG KG	1600	250.		0	1	-4						1600-1	1900-11	4600 U
Indented 1/2 3-schips tere	UG KG	Dirig	50° •		ů.	2	L.						6000	1900 1/	190 5
LAP Foxicity Equivalence	MG KG	-2 (1 1	100**	10	U	4	4						2 01	0 04	0 29
Metais															
Antimony	MG KG	24 2	30*.	41	0	60	76	0.59 UJ	0.56 U.J	491	311	0.59 ()]	5 J	1.6 J	0 77 UJ
Arsenne	MO KO	3.9	100*+	21 5	0	76	76	3.9	2.2	371	151	3.1.7	1 16	57 J	3.3
Cadioun	MO KO	> 7	100**	0.0	υ	76	76	0.29	0.33	0 23 3	0.25	011	0 52	0 28 J) A J
Copper	M0 KC	2390	100**	10000	0	76	76	10	951	46.5.1	30.4.1	17	72 7 J	\$3	27.9
Lead	MG KG	1160	100**	1250	0	76	76	8.8	12.4.3	166.5	285)	114.1	302 J	86 1	88 6 J
Manuev	MG KG	13	00**	57	a	76	76	0.03	0.102	0 1 17	0 147	0.01 1	0.263	0 0.36	0.05.1
1 halloum	MG KO	. 155	1	6.7	0	3	76	072 U	0.68 C	0.87 01	071 U	0 72 UJ	07 U	078 UJ	0.94 U
/ inc	MG KG	211	[00* e	10000	0	76	76	33.3	24	912 J	45	40 J	109	84 8 J	186 1

Solice.
(a) Decknown godd salwer wer feren Lable (2) of (3) AT + (6) 17 Periodicit Dar go Weik, Fan
(2) Sample-oliphi, inte pairs were researed and the solerier territor were read in the sationare statistic potential in the table.
(5) Permeasurance (RN) Fusion 15 in the solerier territor excurse of the sample and an deplosate (3) Perezo approximation (RN) Fusion 15 in the solerier territor territor excurse of the sample and integritistic (3) Perezo approximation (RN) Fusion 15 in the solerier territor territor of using an observable, set shows and half soler (3) Perezo approximation (RN) Fusion 15 in the soler (RN) Fusion (RN) Fusion (RN).

The towards opposited factors (TEP 1 with NYSDEP DTE guidelines were as follow	
--	--

6 P 5 P 6	SUSDEC TEF
Detuted a samble as envi	a (
Dism zing a spin none	1
Donzrophillum anthony	0.1
Build of L. Onen an there.	r 01
- The same	0.01
There is a hisedness cost	1
Induced Chile diport the	0.1

 $L \to composing that non-directed$ $<math display="inline">J \to dhe reported value on an estimated concernition$ $<math display="inline">1/L \to the composing was not detected, the area valued reporting limit is approximate$

P. PTP Projects Senses PBC II ST MI4-0-17 Construction Completion Report Death Final Tables Table 3-2 Seting final_confirm_soil_data xit/S-16_final_conf_data_RdsS

										65 a 19 b	15 · D · /	611 h Da 14	511×15×14	SEAD-16	SEAD-16
SITE LOCATION								55 SEAD-16	SEAD-16 G5	SEAD-10 G5	SEAD-16 H3	SEAD-16 B3	5EAD-16 H3	SEAD-10 12	35-41-10
GPID ID LOCATION ID								16EXPR-G 5-01	16EXPR-G5-93	IGEXPR-G5-03	16EXFL-H3-01	16EXPR-F13-01	16EXPR-H3-02	16ENPR-12-01	16EXPR-13-01
MATRIX								SOIL	SOIL						
SAMPLE ID								16EXPR-G5-01	L6EXPR-G5-04	16EXPR-G5-03	16EXFL-113-01	16EXPR-H3-01	10EXPR-113-02	16EXPR-12-01	16EXPR-13-01
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOITOM OF SAMPLE								0 2	0 2	0 2	0.2	0 2	0 2	0.2	0.2
SAMPLE DATE								4 4.2007	7 20 2007	7/20 2007	7.19.2007	4 4/2007	4 4/2007	7 20-2007	4:4/2007
OC CODE								SA	DU	SA	50	\$A	SA	SA	SA
STUDY ID								RA	KA						
						Number									
		Masumum	Frequency	Cleanap	Number of	of Times	Sumber of								
Parameter	1 nits	1 alue	of Detection	Goal	Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (O)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Henzotalanthracene	LIG KO	2400	3400		0	1	4	180 J	[400.]	1600 1					
Henze(a)pyrene	EG KG	5500	50° o		0	2	4	250 J	19000 U	20000 U					
Benzolb illuor inthene	LIG KG	7500	75"0		0	1	4	450 J	1100 /	130G J					
benzofk)thuaranthene	UG KG	52.5.2	25"*		0	1	4	6600 UJ	19000 U	20000 U					
Chrysene	UG KG	23140	5(10.		0	2	-	210 /	19000 U	20000 []					
Dibenz(a h)anthracene	UG KG	1500	25".		0	1	4	6600 U	19008 U	20000 U					
Indenset 2 3-edips rene	LO KO	CALIFFIC .	sor.		0	2	4	220 1	13000-11	2000011					
BAL Toxicity Equivalence*	MG KG	3013	(U)***	10	0	4	L	0 35	0.28	0.32					
Metals															
Anumous	MG KG	24.2	80*.	41	D	60	76	181	20 G J	19.1.1	233	773	15.8 J	123	10 9 J
Arsenie	MGNG	59	100*+	215	0	76	76	65	5 8 1	46.	661	53	5 5	3.9	5 1
Cadminum	MG KC	> 7	100**	60	0	76	71	27 J	321	357	0 32 J	2 5	57	0.24 1	47
Copper	MG KC	2100	100* •	10000	0	76	76	39-1	268 1	230.0	55.3	209 1	362)	20.3 /	2390 1
l cad	MG KC	1.00	100**	1250	o	70	76	132.3	958 1	910 1	\$75 J	822 1	1016 /	4973	765 J
MUTCUTY	MG KC	11	1:0**	57	o	76	76	0.069	0.137	0121	0.009.3	0.190	0 14	0.45	0 153
fhallmm	MG KC	124	4. *	67	0	3	76	5 U	0 75 UJ	0 8 U I	071 UI	t) 99 (J	0 79 U	0 \$2 U	0.87 U
/ ID 5	MO KC	211	[1N]* e	10000	0	76	76	377 J	275 /	298 1	x8 J	211	308	\$3	512

(1) steppedigitude pain meta energied and the integret result instead on the assistant and an integration price and gas table.
(1) The maximum detricted structure energies much devices of the sampler and the depication (1) Dataset approach detricted structure term structure endow one subsolution by molecular devices from which the method devicement has been ensured and stating association of the sampler and the distribution from which the method devicement has been ensured as a structure and stating association of the sampler and table of the distribution.

The terror equivalent factors (111	Hords NYSELCET	Legendelinea were as follow
------------------------------------	----------------	-----------------------------

- 1111	tok the lost applied in 11. Rangermen weak he tolling		
	CP 5.E6	NVSDRC TEF	
	Hockey a legitly as one	0.1	
	Henz-states one	3	
	Henzochithosanthene	0.1	
	Henzoek (Buoranikum)	0.01	
	("bas-eae	6.01	
	Enthering a hit and he accord	1	
	Indone(1.7 ks.d)pyrcm	-9.1	

omperiod was not detected.
 the reported value or an estimative conceptuation.
 the reported value or an estimative conceptuation.
 the composad was not detacted the avocated reporting limit to approximate.

Table 3-2

. -

SEAD-16 Final Confirmatory Soil Sample Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION GRD ID LOCATION (D) MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLI SAMPLE DAT QC CODE STUEA (D)				4		Number	Number of	SEAD-16 13 16EXPR-13-02 8OUL 16EXPR-13-02 0-2 4-4-2007 SA RA	SEAD-16 J1 16EXFL-11-01 DITCH SOLL 16EXFL-J1-01 0 2 7.19/2007 SA RA	SEAD-10 K1 IAEXFL-K1-01 DITCH SOIL 10EXFL-K1-01 0 U 2 7 19/2007 SA RA
		Maximum	Frequency	Cleanup	Number of					
Parameter	1 nits	Value	of Detection	Geal ¹	Exceedances	Detected	Analyzes?	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs										
Benzotaunthracene	110.50	2406	7 5°		0	1	1			
Benzola)pyrenc	1.0.80	5800	÷0+ .		0	2	1			
Benzotbillumanthene	UG KG	7500	75° -		0	Ę	4			
Benzo(k)(Inoranthene	$UG \times G$	52.5	22" .		0	1	4			
Chrysene	UG KG	24039	50°° e		0	2	4			
Divenzia hjanthracene	UG KG	1600	250.		Ô	1	L			
indeport 2 (-ud)pyrene	UG KG	6010	50° n		0	2	4			
BAP Toxicity Equivalence*	MG KG	9.013	100*.	10	0	4	4			
Metals										
Arimon	MG KG	24 2	X(I* p	41	0	60	76	11.1	2.1 J	121
Americ	MGNG	\$ 2	100* -	21.5	0	76	76	47	561	423
Cadmium	MG KG	57	1187* .	61	0	76	76	19	0 21 J	0.21.3
Copper	MGKG	2390	10074	10000	0	76	7n	223 J	3153	32 2
Lead	MG KG	(150	1187* .	1250	0	70	76	511 1	57 î J	5633
Meining	MOKO	4.5	12%2* a	57	0	76	76	0.061	0.010 1	0.065
Thallourn	MG NG	1.385	17.0	6.7	0	3	76	0.71 M	0.84 UJ	0.79 UJ
Zus	MO KG	711	100**	10/60	n	76	76	711	48.2.3	66.2.1

Solar

Volta	
(1) The clearup goal values are from Table 2-1 of \$5 Al-a-16-17 Remedial Design Work Plan	
(2) "Imple-diplicate pairs were averaged and the average in viti were exed in the onomian statistics metotical in the table.	
(1) The maximum deto trid concentration was obtained in in the average of the cample and its duplicate	
(4) Penzalativizens (BAP) Tosach, Equivalence value was calculated by substituting the detection limit	
with the method dates true limit for root-detect results and taking non-detect values at half value	
The toxicity opposited factors (T) Fylor the NYSDEC BTE guidelines were at follow	
LTA26	STMAL IFF
Henzes a sanifu as ene	14 S
Uenzycajyszene	1
Henzieh dhaoi anthene	
HenrieumBurgente	6.61
· buy some	0.61
Thibunz, a biantiu succe	1
Inderest 2 in departure	0.1

Long-point Was and discord the reported value or an extra-and concentration.
 the composed was not delected. For an occurred exporting, in our sampler-similar transmission.

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								A3	A3	A4	A4	A4
LOCATION ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0 2	0.2
SAMPLE DATE								5/3/2007	5/3/2007	7/13/2007	7/18/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
51,171 115						Number		••••				
		Maximum	Frequency	Cleanup	Number of	of Times	Number of					
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Detected	Analyzes 3	Value (Q)				
Metals							·····					
Antimony	MG/KG	21.9	68%	41	0	42	62	25 1 UJ	27 8 UJ	06 U	0.66 UJ	13.2 J
Arsenic	MG/KG	8 2	100%	21.5	0	62	62	49	57	5.3	5,3 J	4 9
Cadmium	MG/KG	16.2	79%	60	0	49	62	3 2 J	5.9 J	0.04 U	0.15 J	3.2
Copper	MG/KG	162.5	100%	10000	0	62	62	74 5	92.8	11.1	11.6 J	72 7
Lead	MG/KG	1123	100%	1250	0	62	62	736	1020	12.6	21.5 3	751
Mercury	MG/KG	0.094	97%	5.7	Û	60	62	0.073	0.073	0 019 J	0.04	0 077
Thallium	MG/KG	0	0%	67	0	0	62	110	1.2 U	073 U	0.8 UJ	078 U
Zinc	MG/KG	493	100%	10000	0	62	62	314	493	51.5	453 J	289

Notes

cl i Lite cleanup goal valuei are troin 1 able 2-1 of SEAD-16/17 Kemedial Design Work Plan

 $\left(2\right)$ Sample-duplicate pairs were averaged and the average results were used in the summary statistics.

presented in this table

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(4) Confirmatory samples collected as part of the remedial action effort are included in this table.

Historic R1 sample results that are used to define the perimeter of excavation are not included in

this table

Discompound was not detected

1 the reported value is an estimated concentration

122 the compound was not detected, the associated reporting limit is approximite-

SITE LOCATION								SEAD-17 AS	SEAD-17 A5	SEAD-17 A7	SEAD-17 B3	SEAD-17 B4
GRID ID LOCATION ID								17EXFL-A5-01	17EXPR-A5-01	17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-A5-01	17EXPR-A5-01	17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0 2	0.2
SAMPLE DATE								7/13/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
31(7)1 112						Number						
		N	F	01	No. 1	of Times	Number of					
		Maximum	Frequency	Cleanup	Number of	ot times	Rumper of					
Parameter	Units	Value	of Detection	Goal ^t	Exceedances	Detected	Analyzes 3	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Parameter Metals	Units							Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
	Units MG.KG							Value (Q) 3.9 J	Value (Q) 10.5 J	Value (Q) 21 4 UJ	Value (Q) 2.3 J	Valuc (Q) 0.66 J
Metals		Value	of Detection	Goal ¹	Exceedances	Detected	Analyzes ³					
Metals Antimony	MG.KG	Value 21.9	of Detection	Goal ¹	Exceedances 0	Detected 42	Analyzes ³	3.9 J	10.5 J	21.4 UJ	2.3 J	0.66 J
Metals Antimony Arsenic	MG.KG MG-KG	Value 21.9 8.2	of Detection 68% 100%	Goal ¹ 41 21 5	Exceedances 0 0	Detected 42 62	Analyzes ³ 62 62	3.9 J 6 3	10.5 J 5.2	21.4 UJ 4.9	2.3 J 4.7	0.66 J 4,3
Metals Antimony Arsenic Cadmium	MGKG MGKG MGKG	Value 21 9 8 2 16 2	of Detection 68° % 100% 79° %	Goal ¹ 41 21 5 60	Exceedances 0 0 0	Detected 42 62 49	Analyzes ³ 62 62 62	3.9 J 6 3 0.47	10.5 J 5.2 3.6 J	21 4 UJ 4.9 1.7 J	2.3 J 4.7 0.04 U	0.66 J 4.3 0.04 U 13.3 19 5
Metals Antimony Arsenic Cadmium Copper	MGKG MGKG MGKG MGKG	Value 21 9 8 2 16 2 162 5	of Detection 68° ÷ 100% ÷ 79° ÷ 100% ÷	Goal ¹ 41 21 5 60 10000	Exceedances 0 0 0 0	Detected 42 62 49 62	Analyzes ³ 62 62 62 62 62	3.9 J 6 3 0.47 28 I	10.5 J 5.2 3.6 J 94 8 J	21 4 UJ 4.9 1.7 J 49.6	2.3 J 4.7 0.04 U 20 2	0.66 J 4.3 0.04 U 13.3
Metals Antimony Arsenic Cadmum Cupper Lead	MG:KG MG:KG MG:KG MG:KG MG:KG	Value 21 9 3 2 16 2 162 5 1121	of Detection 68% 100% 79% 100% 100%	Goal ¹ 41 21 5 60 10000 1250	Exceedances 0 0 0 0 0 0	Detected 42 62 49 62 62 62	Analyzes ³ 62 62 62 62 62 62	3.9 J 6 3 0.47 28 I 205	10.5 J 5.2 3.6 J 94 8 J 1050 J	21 4 UJ 4.9 1.7 J 49.6 304	2.3 J 4.7 0.04 U 20 2 25 8	0.66 J 4.3 0.04 U 13.3 19 5

Mores

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-diplicate pair , were averaged and the average results were used in the summary statistics give ented in this table

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(1) Confirmatory samples collected as part of the remedial action effort are included in this table

Historic RI sample results that are used to define the perimeter of excavation are not included in this table.

12 compound was not detected

f - the reported value is an estimated concentration

"If # the compound was not detected, the associated reporting limit is approximate-

P \PTYProjects/Seneca PBC II SEAD-16_17.Construction Completion Report/Draft Final/Tables/Table 3-3 S-17_final_confirm_soil_data_kls/S-17_final_so

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								B5	B6	B7	B7	В7
LOCATION ID								17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-01	17EXFL-B7-01	17EXPR-B7-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-02	17EXFL-B7-01	17EXPR-B7-02
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	7/17/2007	7/17/2007	7/17/2007	5/3/2007
QC CODE								SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA
						Number						
		Maximum	Frequency	Cleanup	Number of	of Times	Number of					
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Detected	Analyzes ³	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	0.64 J	21.1 J	0.58 UJ	0 58 UJ	21.2 UJ
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	44	5 J	7 I J	6.4 J	47
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.05 U	3.5 J	0.71 J	0.26 J	1.6 J
Copper	MG/KG	162.5	100%	10000	0	62	62	17.2	136 J	12.2 J	11.3 J	121
Lead	MG·KG	1121	100%	1250	0	62	62	29 1	1120 J	317 J	30.7 J	717
Mercury	MG/KG	0.094	97%	57	0	60	62	0.051	0.075	0 037	0.041	0.043 J
Thallium	MG/KG	0	()%	67	0	0	62	077 U	0 67 UJ	0,71 UJ 73 5 J	0.71 UJ 584 J	0 93 U 259

Notes

(1) The cleanup yoal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(4) Confirmatory samples collected as part of the remedial action effort are included in this table.

Historic R1 sample results that are used to define the perimeter of excavation are not included in

this table

C conspound was not detected

1 the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting $hm\theta$ is approximate.

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								B8	C3	C3	C4	C5
LOCATION ID								17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01
MATRIX								SOIL	SOIL	SOIL	SOL	SOL
SAMPLE ID								17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0 2	0 2
SAMPLE DATE								4/4/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
						Number						
		Maximum	Frequency	Cleanup	Number of	of Times	Number of					
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Detected	Analyzes 3	Value (Q)				
Metals												
Antimony	MG KG	21.9	68° °	-41	0	42	62	24 J	13 9 J	24 3 UJ	0.64 U	0 62 UJ
Arsenic	MGKG	8 2	100%%	21.5	0	62	62	4,2	8.2	4.4	6	5.3
Cadmum	MG-KG	16.2	79%	60	0	49	62	0.97 J	16.2	6 J	0.05 U	0.05 U
Copper	MG KG	162.5	100%	10000	0	62	62	45 5 J	118	158	156	11.9
Lead	MG:KG	1121	100%	1250	0	62	62	208 J	909 J	1040	251	16 2
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0,045	0.046	0 047 J	0.07	0,047
Thallium	MGKG	0	0%	67	0	0	62	0 S8 U	0.87 U	110	0.78 U	076 U
Zine	MG/KG	493	100%	10000	0	62	62	748 J	227 J	493	78 5	57 6 J

Notes

(1) The cleanup goal values are from Table 2-1 of SFAD-To/17 Remedial Design Work Plan

(2) Simple-duplicate parts were averaged and the average results were used in the similary statistics presented in this table.

(3) A holded and outlined cell indicites a concentration that exceeded the site-specific CUGs.

(1) Confirmatory samples collected as part of the remedial action effort are included in this table

Historic R1 sample results that are used to define the perimeter of excavation are not included in this table.

11 compound was not detected

1 - the reported value is an estimated concentration

 Ω^{1} = the compound was not detected, the associated reporting limit is approximate.

SITE LOCATION GRID ID LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID						Newber		SEAD-17 C6 17EXFL-C6-01 0 0.2 7/17/2007 SA RA	SEAD-17 C7 17EXFL-C7-01 17EXFL-C7-01 0 0.2 7/13/2007 SA RA	SEAD-17 C7 17EXPR-C7-02 SOIL 17EXPR-C7-02 0 0.2 4/4/2007 SA RA	SEAD-17 CS 17EXPR-C8-01 17EXPR-C8-01 0 0 0 2 7/13/2007 SA RA	SEAD-17 CS 17EXPR-C8-01 SOIL 17EXPR-C8-02 0 2 7/18/2007 SA RA
		Maximum	Frequency	Cleanup	Number of	Number of Times	Number of					
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes ³	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	680.0	-11	0	42	62	0 63 UJ	5.6 J	11 S J	63 J	4 3 J
Arsenic	MGKG	82	100%	21.5	0	62	62	4 4 J	4.7	7.9	4.6	2 8 J
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.07 J	0.64	3.1 J	1	1.2 J
Copper	MG/KG	162.5	100%。	10000	0	62	62	8.8 J	48.8	149 J	48 3	25 J
Lead	MG/KG	1121	100%	1250	0	62	62	125 J	190	912 J	367	239 J
Mercury	MG/KG	0.094	\$7% .	57	0	60	62	0.03	0.058	0.057	0.045	0.041
-												
Thalbum	MGKG	0	0%	67	0	0	62	0 77 UJ	0.77 U	1 I U	073 U	0 81 UJ

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) A boilded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(4) Confirmatory samples collected as part of the remedial action effort are included in this table.

Thators RE sample results that are used to define the perimeter of excavation are not included in this table.

Unicompound was not detected.

1 = the reported value is in estimated concentration

111 = the comparind was not detected, the associated reporting limit is approximate.

P.PTT/Projects/Sences PBC II/SEAD-16_17/Construction Completion Report/Draft Final/Tables/Table 3-3 S-17_final_confirm_soil_data.xls/S-17_final_soil_data_B&S

Table 3-3 SEAD-17 Final Confirmatory Soil Sample Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION GRID ID LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID						Nachar		SEAD-17 D2 17EXFL-D2-01 SOIL 17EXFL-D2-01 0 0 8/2/2007 SA RA	SEAD-17 D2 17EXPR-D2-03 0 0.2 8/2/2007 SA RA	SEAD-17 D3 17EXFL-D3-01 0 0 7/13/2007 SA RA	SEAD-17 D4 17EXFL-D4-01 0 0.2 7/13/2007 SA RA	SEAD-17 D5 17E:XFL-D5-01 SOIL 17E:XFL-D5-01 0 0.2 7/17/2007 SA RA
		Maximum	Frequency	Cleanup	Number of	Number of Times	Number of					
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 3	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68° •	-11	0	42	62	0.73 J	1.8 J	0.82 J	29 J	0.68 J
Arsenie	MG/KG	S 2	100%	21.5	0	62	62	39	4.3	5.3	5	3 3 J
Cadmum	MGKG	16.2	79%	60	0	49	62	0.57	0.69	0.05 U	0.62	0 22 J
Copper	MG/KG	162.5	100%	10000	0	62	62	156	22.7	177	83 9	18.4 J
Lead	MGKG	1121	100%	1250	0	62	62	32.8	92.2	16.6	217	77 4 J
Mercury	MG/KG	0.094	97° o	57	0	60	62	0.062	0.059	0.074	0.006 U	0 024
Thallium	MGKG	0	0%	6.7	0	0	62	074 U	07 U	076 U	073 U	074 UJ
Zinc	MG/KG	493	100%	10000	0	62	62	58 6	67.8	54 S J	348	58 4 J

Notes

(1) The clearnip goal values are from Table 2-1 of SEAD-16(17 Remedial Design Work Plan

(2) Simple-dupl-dupledic parts were averaged and the average results were used in the summary statistics

presented in this table

(5) A bolded and outlined cell ir dicates a concertiation that exceeded the site-specific CUGs

(3) Contirmatory, amples collected as part of the remedial action effort are included in this table. History, R3, sample results that are used to define the perimeter of excas stion are not included in.

this table

11 - compound was not detected

I the reported value is an estimated concentration

111 the compound was not detected, the associated reporting limit is approximate

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								D6	D6	D7	D7	D8
LOCATION ID								17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01	17EXPR-D7-02	17EXFL-D8-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01	17EXPR-D7-02	17EXFL-D8-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0 2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/17/2007	8/2/2007	7/13/2007	4/4/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
5100110						Number		103	101	101		
		Maximum	Frequency	Cleanup	Number of	of Times	Number of					
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes ³	Value (Q)				
Metals												
Antimony	MGKG	21.9	68° .	41	0	42	62	061 11	0 55 UJ	69 J	6 J	0 64 UJ
Arsenic	MG/KG	82	100%	21.5	0	62	62	37 J	2.1	4	5.4	4.5
Cadmium	MG/KG	16.2	7.9%	60	0	49	62	0.28 J	0 24	0.38	24	0.05 U
Copper	MG/KG	162 5	100%	10000	0	62	62	12 J	10,4	88 5	72 8	12
Lead	MGKG	1121	100º-n	1250	0	62	62	303 J	48	332	528 J	153
Mercury	MGNG	0.094	97%	57	0	60	62	0.054	0.005 U	0.026	0.048	0.045
Thalhum	MGKG	0	0°6	67	0	0	62	075 UJ	0 67 U	0.69 U	110	0 79 U
Line	MG/KG	493	100%	10000	0	62	62	46 6 J	37.3	72 6 J	199 J	49.3 J

Dates

(1) The cleanup goal values are from Table 2-1 of SEAD-16-17 Remedial Design Work Plan

(2) Sample-dupl date pairs were averaged and the average results were used in the similary statistics presented in this table

(3) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs. (4) Confirmatory samples collected as part of the remedial action effort are included in this table

Historic RI sample results that are used to define the perimeter of excavation are not included in diris table

11 - compound was not detected

2 the reported value is an estimated concentration

 $1\,\%$ γ the compound was not detected, the associated reporting limit is approximate

Table 5-1 SEAD-16 Post-RA Groundwater Monitoring Results SEAD-16 and SEAD-17 Construction Completion Report Seneca Army Depot Activity

SITE LOCATION	1								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
LOCATION IE)								MW16-1	MW16-1	MW16-2	MW16-4	MW16-5	MW16-6	MW16-7
MATRIX	ς								GW	GW	GW	GW	GW	GW	GW
SAMPLE II)								16LM20001	16LM20000	16LM20002	16LM20003	16LM20004	16LM20005	16LM20006
SAMPLE DATE	3								12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007
QC CODE	5								DU	SA	SA	SA	SA	SA	SA
STUDY II	0								LTM	LTM	LTM	LTM	LTM	LTM	LTM
									1	1	1	1	1	1	1
							Number					1			
		Maximum	Frequency		Action	Number of	of Times	Number of							
Parameter	Units	Value	of Detection	Criteria ²	Level	Exceedances	Detected	Anaiyses	Value (Q)	Value (Q)	Value (Q)		Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	168	100%			0	7	7	91.6 J	61.4 J	98.8 J	<u>167</u> J	160 J	168 J	45.9 J
Antimony	UG/L	9.58	71%	GA	3	3	5	7	1.02	1 U		gander men 1. Stall	1.82	1 U	1
Barium	UG/L	170	100%	GA	1000	0	7	7	59	60.4	64.6	44.5	38.9	31.8	170
Cadmium	UG/L	0.46	14%	GA	5	0	1	7	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.46 J
Calcium	UG/L	194000	100%			0	7	7	105000 J	107000 J	143000 J	87100 J	8,9000 J	80400 J	194000
Chromium	UG/L	1.1	29%	GA	50	0	2	7	0.84 U	0.84 U	0.84 U	1 J	1.1 J	0.84 U	0.84 U
Cobalt	UG/L	1.6	14%			0	l	7	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	1.6 J
Copper	UG/L	34 7	71%	GA	200	0	5	7	1.3 U	1.3 U	4.5 J	5.4 J	3.1 J	3.4 J	34.7
Iron	UG/L	1200	100%	GA	300	2	7	7	68.3	35.8 J	49.5 J	95.4	"a hr a hi 12.00		29.2]
Iron+Manganese	UG/L	1238	100%	GA	500	2	7	7	73	39 J	53 J	127	11111111111111138	441	660 J
Lead	UG/L	26.5	14%	GA	25	1	t	7	2.9 U	2.9 U	2.9 U	2.9 U	29 U	29 U	26.5
Magnesium	UGIL	32000	100%			0	4	4	15900 J	16100 J	15600 J	9440 R	9380 R	7100 R	32000 J
Manganese	UG/L	631	100%	GA	300	1	7	7	5	3.3	3.4	31.2	37.6	23.3	631
Mercury	UG/L	0.507	14%	GA	0.7	0	1	7	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.507
Nickel	UG/L	5.5	14%	GA	100	0	1	7	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.5 J
Potassium	UG/L	5480	100%			0	1	1	907 R.	886 R	2050 R	1300 R	4420 R	2690 R	5480 J
Sodium	UG/L	68400	100%	GA	20000	5	5	5	25300 J	10 PE 124200 J	1 0049600 J	1 40800 J	8410 R	6110 R	, 68400 J
Thallium	UG/L	0.03	14%	MCL	2	0	1	7	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 J
Vanadium	UG/L	12	29%			0	2	7	0.78 U	0.78 U	0.78 U	0.78 U	1.2 J	0.86 J	0.78 U
Zinc	UG/L	34.4	86%	MCL	5000	0	6	7	7.8 J	4.4 J	8.2 J	5.3 J	34.4	5.5 J	3.6 U

Nate

1 Only detected metals are included in this summary table

2. The criteria values are NYSDEC Class GA Oroundwater Standards (TOGS 1 1 1, June 1998) and EPA

Maximum Contamination Limit (MCL), Source http://www.eps gov/safewater/mel html#inorganic html

3. Shading indicates a concentration above groundwater standard

U = compound was not detected

J = the reported value is and estimated concentration

R = the compound was rejected

Table 5-2 SEAD-17 Post-RA Groundwater Monitoring Results SEAD-16 and SEAD-17 Construction Completion Report Seneca Army Depot Activity

SITE LOCATION LOCATION II MATRIX SAMPLE II SAMPLE DATI QC CODI STUDY II	О К О Е								SEAD-17 MW17-1 GW 17LM20000 12/20/2007 SA LTM I	SEAD-17 MW17-2 GW 17LM20001 12/20/2007 SA LTM I	SEAD-17 MW17-3 GW 17LM20002 12/20/2007 SA LTM 1	SEAD-17 MW17-4 GW 17LM20003 12/20/2007 SA LTM 1	SEAD-17 MW17-5 GW 17LM20004 12/20/2007 SA L'I'M I
		Maximum	Frequency		Action	Number of	Number of Times	Number of					
Parameter	Units	Value	of Detection	Criteria ²	Level	Exceedances	Detected	Analyses	Value (Q)				
Aluminum	UG/L	204	100%			0	5	5	204	110 J	106 J	50.2 J	98.5 J
Antimony	UG/L	3.44	20%	GA	3	1	1	5	ΙU	3.44	1 U	1 U	ιU
Barium	UG/L	86.7	100%	GA	1000	0	5	5	70	58.8	39	32.5	86.7
Calcium	UG/L	110000	100%			0	5	5	98300 J	110000 J	69000 J	74900 J	97100 J
Chromium	UG/L	1	20%	GA	50	0	1	5	0.84 U	0.84 U	0.84 U	ł J	0.84 U
Copper	UG/L	6.2	60% n	GA	200	0	3	5	1.3 U	6.2 J	2.6 J	1.8 J	1.3 U
fron	UG/L	140	100%	GA	300	0	5	5	106	140	133	45.4 J	91.7
Iron+Manganese	UG/L	170	100%	GA	500	0	5	5	119	160	170	59 J	128
Magnesium	UG/L	21800	100%			0	2	2	21800 J	11000 R	7560 R	10400 R	15800 J
Manganese	UG/L	36.7	100%	GA	300	0	5	5	13.2	20.5	36.7	13.7	36.5
Sodium	UG/L	28500	100%	GA	20000	1	1	I	7790 R	6620 R	4550 R	28500 J	7950 R
Zinc	UG/L	72	100%	MCL	5000	0	5	5	4.7 J	72 J	27 J	5.1 J	4.7 J

Note

1. Only detected metals are included in this summary table

2. The oriteria values are NYSDEC Class GA Groundwater Standards (TOGS 1-1.1, June 1998) and EPA

Maximum Contamination Limit (MCL), Source http://www.epa.gov/safewater/mcl.html#inorganic.html

3. Shading indicates a concentration above groundwater standard.

U compound was not detected

J - the reported value is and estimated concentration

R the compound was rejected

APPENDIX A

t

1

DAILY REPORTS

Daily Field Report

Date:	7/9,	/2007	Day:	Monday	/	Weather Conditions:						
Job #	74	5172	-				Clear/ 90's					
Site Nam	e:						Task(s)):		. ,		
		ot SEA	D 16, 17 &	121 C				tion and s	ampling			
	ing Dep						<u>Drouru</u>	non und 5	umpring			
Parsons:				Position	1		S. St. G	eorge			Position	
Thomas (Andrew	'S		CM			Steve S	t George			Owner	
Ben Mcal	lister			SSO			Richard	Laumou	n		Operator	
Dave Hur	tle			UXO Te	ech		Jason N	Iuscasella	1		Teamster	r
Visitors				Repres	enting		Jason N	licael			Oper/Suj	ot
Equipme	nt Utilize						PPE Le	evel(s):				
Dozer			Mechanics		1		D					
Off rd Tru			Water Tru		1							
Fuel Truc			Chemical		1							
Excavator		1	Hand was	n Station	1							
Excavator												
Mini-exca			(used to co	ollect disp	osal characteriz	ation samp	les at SEA	AD-17.)				
Health ar												
			ed with pers									
			raining with	personn	el							
Work Pe												
Mobilized	personn	el and equ	uipment to	job site.								
The SEAI	D-121C e	xcavation	n to a depth	of 1-foot	is 90% complete	e, and the e	excavated	soil is sta	ged at the	south en	d of SEAI	D-1210
Confirma	ory samp	ling bega	in in the exe	cavated a	reas. 20 floor an	id perimete	r (plus tw	o field du	plicates)	samples		
		EAD-121	C and FedI	Exed to S'	TL for lead analy	ysis. One c	lisposal c	haracteriz	ation sam	ple was c	collected a	t
SEAD-12	1C.											
Four smal	l test pits	were dug	g at SEAD-	17 in orde	er to collect 4 dis	sposal char	acterizatio	on sample	s for TCL	P analysi	is.	
The two s	ections of	f fence th	at cut into t	he excava	ation area were r	emoved at	SEAD-17	150 line	ar feet fro	om the we	est side an	d 30
linear feet	from the	north sid	le of the acc	ess gate.								
The excav	ation are	a at SEA	D-17 was st	aked out.								
Material	Loaded											
		Total	Estimated	To. Ton	Mat'i			Manifes	st			
	Loads	to date	tons	to date	Туре	Hauler		No's.				
Non-haz	None				SEAD Soil	Riccelli						
					· · · · · · · · · · · · · · · · · · ·							
Sampling				_			Other M	laterials	brought	on or off	-site	
# of samp	les collec	ted toda	v:		· · · · · · · · · · · · · · · · · · ·		Mat'l					
				ollected at	SEAD-17.		Туре		Loads	CY	Tons	
					collected at SEA	D-121C.	None					
					EAD-121C.		1					
Notes:												
					Der	epared by:						
					11	eparen by.		C Andre				
							ruomas	CAllure	. 115			

Daily Field Report

Date:	7/10/200	07	Day:	Tuesday	7	Weath	er Condit	ions:				
Job #	745172	2				Cloudy	udy 95 degrees					
Site Name						Task(s):					
Seneca Ar	my Depot	SEAD 16	, 17 &	121 C		Excava	tion and st	tockpiling	g soil			
Parsons:				Position		S. St. C	leorge			Position		
Thomas C	Andrews			СМ			l Laumour	1		Operator		
Ben Mcall				SSO		Jason N	luscasella			Teamster		
Dave Hurt	le			UXO Te	ch	Jason N	licael			Oper/Supt		
Visitors				Represe	enting	Bill Ca	ldwell			Operator		
Equipmen	t Utilized:					PPE L	evel(s):					
Dozer		l Me	chanic	s Truck	1	D						
Off rd Tru		2 Wa	ter Tru	ck	1							
Fuel Truck				Toilets	1							
Excavator		1 Hai	nd was	h Station	1							
Excavator		1 Bol										
Mini-excar	ator	1 Mo										
	10.1	Gra	pple B	ucket	1							
Health an												
					at SEAD-17.							
	w operator i					000	1 1: 1. 7	(0.11				
		eting; top	ics inc	luded air i	monitoring, site tra	affic awareness, ai	nd slips/tri	ps/falls.				
Work Per		1.1.		1 1	CEAD 16							
	was contacte he overhead		vernea	a power I	ines at SEAD-16	& SEAD-17. The	y will be o	n site ton	norrow m	orning to		
				mon and a	grapple bucket to S	VEAD 17						
5. St. Geor	ge denvered	Bobcatw	vitn me	wer and g	grappie bucket to a	SEAD-17.						
Excavation	at SEAD 1	7 comme	ned 1	The excav	ation on the south	side of SEAD-17	is complet	ted the e	voguation	east of		
						ese areas were exc				cast 01		
						I had little if any s				hullets		
						avation area near			usings, or	ouncis.		
						out area at SEAD			7			
						ring the weight of				cavated		
	alculated de									Jurucu		
					naterial was sent o	off-site.						
Three loads	s (80.3 tons)	of SEAD	-121C	excavatio	n material was see	nt off-site.				······································		
The density	of the soil	excavated	at SE/	AD-121C	was measured in t	he field for densit	y of 1.75 t	ons/cy.				
Both SEAI	D-17 and SE	AD-121C	excav	ation mate	erial density need	to be discussed an	d agreed to	o by Stev	e St. Geo	rge.		
Material L	oaded											
			imated	To. Ton			Manifes	t				
			ons	to date	Туре	Hauler	No's.					
Non-haz	16	16 .	358	358	SEAD Soil	Riccelli	11290 to	11305				
Also see at	tached truck	and dispo	osal log									
Sampling:						Other Materials	brought	on or off	-site			
	es collected	today:				Mat'l						
none						Туре	Loads	CY	Tons			
						None						
Notes:												

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	7/11/	2007	Day:	Wed			Weather	Conditi	ons:			
Job #	745	45172 Cloudy- thunderstorm late afternoon 80							80 degrees			
Site Name:							Task(s):					
Seneca Arr	16, 17 & 1			Excavation and stockpiling soil								
Parsons:				Position		S. St. George			Position			
Thomas C /	Andrews			CM			Steve St George			Owner		
Ben Mcallister SSO							Richard Laumoun				Operator	
Dave Hurtle UXO Tech							Jason Muscasella				Teamster	
Visitors Representing							Jason Micael				Oper/Supt	
Tim Baily NYSE&					Bill Caldwell				Oper			
ī						Kevin Lindmann			Oper			
							Josh Stel	mack			Oper	
Equipment			PPE Level(s):									
			Mechanics	Truck		D						
Off rd Truck 2			2 Water Truck 1									
			Chemical 7	oilets								
Excavator 3	су	1	Hand wash	Station								
Excavator 1	.5 cy	1	Skid Steer									
Mini-excavator 1 Mower												
	_	1	Grapple Bu	cket								
Health and												
Conducted	tool box	meeting	topics inclu	ided air mon	itoring, site traf	fic awareness, a	nd slips/tri	ps/falls.				
Two new S. St. George personnel underwent Safety Training.												
		and perin	meter dust n	nonitoring at	SEAD-17.							
Work Perf												
NYSE&G o	ame on-	site at SI	EAD-16 and	SEAD-17 to	disconnect the	main overhead	power feed	lers. The	overhead	d lines at		
SEAD-16	and SE	AD-17 h	ave been de	powered.								
The areas e	ast, west	, and nor	th of Buildi	ng 367 were	completely exc	avated to 1-foot.						
						ut areas at SEA	D-121C an	d SEAD	-17.			
8 loads (16)	.58 tons) of exc	avated soil f	rom SEAD-	7 was hauled o	ff-site.						
Bruch was	leared a	nd surfa	e debris wa	s gathered at	SEAD-16							
Dines locate	d at SE	D-16 pc	tentially co	s gathered at	vith propellant y	vere removed an	nd transpor	ted to OF	3 Ground	ls for futu	те	
					XO Tech, D. Hi		id transpor		Oround	is for futur		
	excavation	on at SEA	AD-121C w	as completed	. 29 loads (689	.70 tons) of exc	avated soil	from SE	AD-121	C was hau	uled	
off-site.											· · · · · · · · · · · · · · · · · · ·	
Material L	oaded											
			Estimated		Mat'l		Í	Manifes	ť	I		
	Loads	to date	tons	to date	Туре	Hauler		No's.	11242			
Non-haz	37	53	851	1209	SEAD Soil	Riccelli		11306 to	11342			
					L							
Also see att	ached tri	uck and o	lisposal log			Other Mate	erials brou	uht on o	r off-site			
Sampling:		1413 0100	Put on 0	, on-site								
# of samples collected foday:								Loads	СҮ	Tons		
none		Type None		LUAUS		1 0113						
none				·····		None			<u> </u>			
Notos												
Notes:												
						Prepared by						

Thomas C Andrews

Thomas C Andrews CM Steve St George Owner Ben Mcallister SSO Richard Laumoun Operator Dave Hurtle UXO Tech Jason Muscasella Teamster Visitors Representing Jason Muscal Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Equipment Utilized: PPE Level(s):	Date:	7/12	/2007	Day:	Thursday	·		Weather	· Conditi	ons:		
Sence Army Depot SEAD 16, 17 & 121 C Excavation and stockpiling soil Parsons: Position S. St. George Position Thomas C Andrews CM Steve St George Owner Bill Caldwell Operator Dave Hurtle UXO Tech Jason Miccal Operator Dave Hurtle UXO Tech Jason Miccal Oper/Supt Bill Caldwell Oper Colspan="2">Representing Jason Miccal Oper/Supt Dozer 1 Mechanics Truck 1 Dozer 1 Mechanics Truck 1 Conducted Iolits 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 3 cy 1 Hand wash Station 1 Conducted tool box meeting; topics included air monito	Job #	745	5172	-				90 and si	unny			
Barnardia Sence Army Depot SEAD 16, 17 & 121 C Excavation and stockpiling soil Parsons: Position S. St. George Position Thomas C Andrews CM Steve St George Owner Bill Caldwell Operator Dave Hurtle UXO Tech Jason Miccel Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="				-								
Parsons: Position S. St. George Position Thomas C Andrews CM Steve St George Owner Ben Mcallister SSO Richard Laumoun Operator Dave Hurtle UXO Tech Jason Mucasella Teamster Visitors Representing Jason Mucasella Teamster Visitors Representing Jason Mucasella Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Equipment Utilized: PPE Level(s): Docer Ichemical Toilets Ichemical Toil												
Instance Andrews CM Steve St George Owner Ben Mcallister SSO Richard Laumoun Operator Dave Hurde UXO Tech Jason Muscasella Teamster Visitors Representing Jason Muscasella Teamster Visitors Representing Jason Muscasella Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Equipment Utilized: PPE Level(s): Doper Doper Dozer 1 Mechanics Truck 1 D Doff d'Truck 2 Water Truck Truck Excavator 3 cy 1 Hand wash Station 1 Excavator 1.5 cy 1 Skid Steer Mint-excavator 1 Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed Ecosyato 1 As Station 2 SEAD-16 sons of Portland cennen to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The bush clearing at SEAD-16 owas completed. The interior and exterior ramps of SEAD-16 and SEAD-17. Ecosyato 14 SEAD-16 constructed. K. George delivered 6.8 Kons of Portland cennent to stabilize soil with high lead concentrations at SE	Seneca A	rmy Dep	ot SEAL	0 16, 17 &	121 C			Excavati	on and st	ockpiling	g soil	
Interval CM Steve St George Owner Ben Mcallister SSO Richard Laumoun Operator Dave Hurde UXO Tech Jason Muscasella Teamster Visitors Representing Jason Muscasella Teamster Visitors Representing Jason Muscasella Oper/Supt Bill Caldwell Oper Oper Oper/Supt Boy Stelmack Oper Oper Oper Equipment Utilized: PPE Level(5): Oper Oper Dozer 1 Mechanics Truck 1 D Oper Excavator 3 ey I Hand wash Station 1 Excavator 1.5 cy 1 Skid Steer Mint-excavator I Grapple Bucket E Ferformed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed formeter Excavator 3 c) Fortand cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The bush clearing at SEAD-16 constructed. 57 loads (1,538 tons) of excavated soil from SEAD-16 and SEAD-17. Work eclaards at set and the Building 361 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Excavator at SEAD-16 constructed. Regular dust suppression was performed by wetting roads and load out areas at SEAD												
Ben Mcallister SSO Richard Laumoun Operator Dave Hurtle UXO Tech Jason Muscasella Teamster Visitors Representing Jason Muscasella Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Equipment Utilized: PPE Level(s): Doer Oper Dozer 1 Mechanics Truck 1 D Off rd Truck 2 Water Truck 1 D Fuel Truck 1 D Oper Equipment Utilized: Oper Fuel Truck 1 Chemical Toilets 1 Excavator 3 cy 1 Stati Station 1 Excavator 1.5 cy 1 Stid Steer Mini-excavator 1 Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed Ecasuator 1.5 dwas completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 and SEAD-16. The brush clearing at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the	Parsons:				Position							Position
Dave Hurtle UXO Tech Jason Muscasella Teamster Visitors Representing Jason Muscasella Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Equipment Utilized: PPE Level(s): Dos Oper Dozer I Mechanics Truck 1 D Oper Fuel Truck 2 Water Truck 1 D Oper Excavator 3 cy 1 Hand wash Station 1 Excavator 3 cy 1 Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation activities began in the area cast of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed vast or ads and load out areas at SEAD-16 and SEAD-17.	Thomas C	Andrew	S									
Visitors Representing Jason Micael Oper/Supt Bill Caldwell Oper Kevin Lindmann Oper Josh Stelmack Oper Dozer I Mechanics Truck D Off rd Truck 2 Water Truck I Fuel Truck I Chemical Toilets I Excavator 3 cy I Hand wash Station I Excavator 1.5 cy I Skid Steer Skid Steer Mini-excavator I Mower I Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area cast of Building 36 at SEAD-16. The water inside Building 3-311 at SEAD-16 was pumped out; no debris was found in the basement of the building affer water removal. <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></tr<>												4
Bill Caldwell Oper Kevin Lindmann Oper Josh Stelmaack Oper Bozer 1 Mechanics Truck 1 Dozer 1 Mechanics Truck 1 Off rd Truck 2 Water Truck 1 Doff rd Truck 1 Chemical Toilets 1 Equation of the state of the stat		tlc										
Kevin Lindmann Oper Josh Stelmack Oper Dozer 1 Mechanics Truck 1 Dor 1 Mechanics Truck 1 Off rd Truck 2 Water Truck 1 Fuel Truck 1 Chemical Toilets 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 1.5 cy 1 Skid Steer 1 Mini-excavator 1 Mover	Visitors				Represe	nting						
Josh Stelmack Oper Equipment Utilized: PPE Level(s): Dozer 1 Mechanics Truck 1 Doff rd Truck 2 Water Truck 1 Fuel Truck 1 Chemical Toilets 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 1.5 cy 1 Skid Steer Skid Steer Mini-excavator 1 Mower 1 Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Conducted tool box meeting; topics included air monitoring at SEAD-16 and SEAD-17. Work Performed Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>												
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Dozer 1 Mechanics Truck 1 D Off rd Truck 2 Water Truck 1 Puel Truck 1 Chemical Toilets 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 3 cy 1 Skid Steer 1 Mini-excavator 1 Mower 1 Torapple Bucket 1 1 Health and Safety: 7 1 Grapple Bucket Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. 7 Performed: 7 10 dash (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Total Loads Total Kosee attached truck and disposal log 2,747 Stan performed 2,747 Stan performed </td <td></td> <td>Oper</td>												Oper
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Fuel Truck 1 Chemical Toilets 1 Excavator 3 cy 1 Hand wash Station 1 Excavator 3 cy 1 Skid Steer 1 Mini-excavator 1 Mower 1 1 Grapple Bucket 1 Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Material Loaded Non-haz Tota		-1-						D				
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Excavator 1.5 cy 1 Skid Steer Mini-excavator 1 Mower 1 Grapple Bucket 1 Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Loads Total Ko date Top Value No's. Non-haz 57 57 110 1,538 2,747 Stanpling: Other Materials brought on or off-site Sampling: Other Materials brought on or off-site			-									
Mini-excavator 1 Mower I Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Loads Total Kestimated Ton Material Loaded Total Loads to date Type Hauler No's. Total Non-haz 57 S7 110 1,538 2,747 Sta			_			1						
I Grapple Bucket Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Material Loaded Non-haz Non-haz S7 Other Materials brought on or off-site Material Loaded Material Loaded Material Loaded Sampling: </td <td></td>												
Health and Safety: Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-16 mais completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust nobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Material Loaded Non-haz Non-haz ST Stangle is collected today: Material Loaded Vertical Estimated To. Ton Mat'l to date Type Material Loaded Non-haz Stangle is collected today: Mat'l<	IVIIII-CACA	vator	-		lucket							
Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls. Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17. Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded It o date Ton Material Loaded Non-haz 57 S7 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Ital SEAD Also see attached truck and disposal log Sampling: Ø of samples collected today: Mat'l none Type Mat'l Loads CY	Health an	d Safety	:	Gruppit 2								
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Work Performed: Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site. St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal. The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization. Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16. The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Loads Total Estimated To. Ton Mat'l Manifest No's. Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site mat'l # of samples collected today: Mat'l Mat'l Loads CY Mat'l Cement 1 6.8 Also												
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The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal. Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Total Estimated To. Ton Mat'l Manifest to date Type Hauler No's. Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: # of samples collected today: none Mat'l Loads CY Tons Cement 1 6.8												
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Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17. Material Loaded Material Loads Total to date to date To. Ton to date Mat'l Type Manifest No's. Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site						s pumped out; n	o debris was	found in	the			
Material Loaded Total Loaded Estimated To. Ton Mat'l to date Type Manifest No's. Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site # of samples collected today: Mat'l Type Loads CY Tons Cement 1 6.8 CY Tons												
Total Loads Estimated To. Ton Mat'l to date Manifest Type Non-haz 57 110 1,538 2,747 Non-haz 57 110 1,538 2,747 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site # of samples collected today: Mat'l Type Loads CY none Type Loads CY Tons	Regular di	ust suppro	ession wa	s performe	d by wetti	ng roads and lo	ad out areas	at SEAD	-16 and S	EAD-17		
Loads to date to date Type Hauler No's. Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site # of samples collected today: Mat'l Loads CY none Type Loads CY Tons	Material	Loaded										
Non-haz 57 110 1,538 2,747 SEAD Soil Riccelli 11343 to 11399 Also see attached truck and disposal log Sampling: Other Materials brought on or off-site # of samples collected today: Mat'l Loads CY none Type Loads CY Tons			Total	Estimated	To. Ton	Mat'l			Manifes	t		
Also see attached truck and disposal log Sampling: # of samples collected today: none Cement Cement		Loads	to date	tons		Туре	Hauler					
Sampling: Other Materials brought on or off-site # of samples collected today: Mat'l none Type Cement 1 6.8	Non-haz	<i>u</i> .		1		SEAD Soil	Riccelli		11343 to	11399		
# of samples collected today: Mat'l Loads CY Tons none Type Loads CY Tons Cement 1 6.8			uck and o	disposal log	ġ.							
none Type Loads CY Tons Cement 1 6.8								aterials	brought	on or off	-site	
Cement 1 6.8		les collec	ted today	y:						<i></i>		
	none								Loads	CY		
Notes:							Cement		1		0.8	
	Notes:									L	L	

Prepared by:

Date:	7/13	/2002	Day:	Friday			Weathe	r Condit	ions:			
Job #	74	5172	-				75 degre	es and cl	oudy			
Site Nam	e:						Task(s):	;				
Seneca A	rmy Dep	ot SEAI	0 16, 17 &	121 C			Excavat	ion and T	&D non ł	1az soil		
Parsons:				Position			S. St. G				Position	
Thomas C		S		СМ				uscasella			Teamster	
Ben Mcal	lister			SSO			Jason M				Oper/Sup	ot
Dave Hur	tle			UXO Te			Bill Calo				Oper	
Visitors				Represe	nting		Josh Ste	lmack			Oper	
Steve Abs	solom			Army								
Equipme	nt Utilize	ed:					PPE Le	vel(s):				
Dozer		1	Mechanics	Truck	1		D					
Off rd Tru	ıck	2	Water True	ck	1							
Fuel Truc	k	1	Chemical '	Foilets	1							
Excavator	Зсу	1	Hand wash	Station	1							
Excavator	1.5 cy	1	Skid Steer		1							
Mini-exca		1	Mower		1							
		1	Grapple B	ucket	1							
Health ar	nd Safety		1.									
Conducte	d tool boy	meeting	; topics incl	uded air i	monitoring, site tra	affic awar	eness, an	d slips/tri	ps/falls.			
					g at SEAD-16 and							
Work Per					<u></u>							
Excavatio	n activiti	es at SEA	D-16 contin	ued in th	e area north/east o	f Buildin	g S-311.					
					s) of soil excavate			was haule	ed off-site			
					ng roads and load							
11 loads (338 tons)	of soil e	cavated fro	m SEAD	-17 was hauled of	f-site.						
					d with Portland ce		is stabiliz	zed soil a	nd the are	a adjacer	t to the	
					ir disposal charact							
the cemen												
30 sample	s (plus a	field dup	icate) were	collected	at the SEAD-17 e	excavation	n area.					
Confirmat	tory samp	le collect	ion continu	ed at SEA	D-121C. 4 confi	matory s	amples w	ere collec	ted at SE	AD-1210		
Material	Londod		· · · · · · · · · · · · · · · · · · ·									
material	Loaded	Total	Estimated	To Ton	Mat'l			Manifes	t			
	Loade	to date	tons	to date		Hauler		No's.				
Non-haz	33	143	848		SEAD Soil	Riccelli		11400 to	11432			
1 ton muz		1 + 5	0.10	2,370	CDALD COM							
Also see a	ttached ti	uck and	lisposal log									
		a chi and i	inop o cur reg	·····			Other M	laterials	brought	on or off	-site	
Sampling							Mat'l					
# of samp	les collec	ted toda	v:				Туре		Loads	CY	Tons	
4 samples	were col	lected at \$	SEAD-1210				None					
			e collected a		17.							
					SEAD 17, but only	/ I reques	ted for ar	alysis.				
						ared by:						

Date:	7/16	/2007	Day:	Monday			Weather (Conditi	ons:		
Job #	74:	5172					75 degrees	s and clo	oudy		
Site Nam	le:						Task(s):				
		ot SEAI	0 16, 17 &	121 C			Excavation	n and lo	ad out		
Parsons:				Position			S. St. Geo	rge			Position
Ben Mcal				SSO			Jason Mic				Oper/Supt
Dave Hur				UXO Te	ch		Bill Caldw	rell			Oper
	CAndrew	'S		СМ			Kevin Line	dmann			Oper
Visitors				Represe	nting						
Steve Ab:	solom			SEDA							
Equipmo	ent Utilize	nd.					PPE Leve	1(0).			
Dozer			Mechanics	Truck	1		D	1(3).			
Off rd Tru	uck		Water True		1						
Fuel Truc		-	Chemical		1						
Excavator			Hand wash		1						
Excavator		1	Skid Steer								
Mini-exca		-	Mower								
			Grapple B	ucket							
Health ar											
						site traffic awa	reness, and s	slips/trij	os/falls.		
			onitoring at								
			mples were	below de	etection limit	t for lead; disc	ontinued per	sonal a	ir monito	ring.	
Work Pe			0.211	1D'al	42 L		CAD 16 min		at a d		
						RR tracks at SI auled off-site.	AD-16 wer	e excav	ated.		
						load out area	at SEAD-1	6			
					ith progress			0.			
								1			
			nicated to t			at 121C failed	to meet the o	cleanup	goal. Iv	vo hot spo	ots for
S. St. Geo	orge began	n to de-m	obilize equi	pment the	at is no longe	er needed.					
L											
	·····										
Material	Loaded	Tratal	Estimated	To Ton	Madl			Anifor	4		
]	Loads	Total to date	Estimated tons	to date	Mat'l Type	Hauler		4anifest No's.	L		
Non-haz	28	171	580	1.1.0.0	SEAD Soil	Riccell		110 3.			
NOIT-IIa2	20		500	4,175	OB/ID CON	Telecen					
Also see a	attached t	ruck and	lisposal log								
11100 000 0		and and	inopeeur 108			- <u>.</u>					
Sampling	,					Other N	laterials bi	rought	on or off	-site	
# of samp	oles collec	cted toda	y:			Mat'l					
none						Туре	L	oads	CY	Tons	
Notes:						None					
						Prepared by					

Thomas C Andrews

Job #	7/17/2	2007	Day:	Tuesday		Wea	ther Conditi	ons:		
	745	172				Clea	r and 80's			
ite Nam	۵,					Tas	k(s):			
		t SEAF	0 16, 17 & 1	121 C			avation and To	&D		
circu A	тту Беро	1 OBAD	/ 10, 17 œ							
Parsons:				Position		S. S	t. George			Position
Ben Mcal	lister			SSO			n Micael			Oper/Supt
Dave Hur				UXO Te	ch		Caldwell			Oper
Dan Doug				Tech		Kev	in Lindmann			Oper
	Andrews			CM						
isitors				Represe	nting					
_	nt Utilized						Level(s):			
)ozer			Mechanics		l	D				
Off rd Tru			Water True		1					
uel Truc		-	Chemical		1					
Excavator			Hand wash	Station	1					
Excavator			Skid Steer							
Mini-exca	avator	-	Mower							
		1	Grapple Bi	ucket						
	nd Safety:			1 1 1			1 -1' - //	- (6, 11-		
						traffic awareness	, and slips/tri	os/ralis.		
	formed:	r dust me	onitoring at	SEAD-IC).					
		EAD 16	was comple	atad						
					ng roads and lo	ad out areas at SI	FAD-16 17 at	<u>d 121C</u>		
								<u>IU 1210.</u>		
						as hauled off-site				
						ot is being excava				
	reas. The	hot spot	loooted wit	hin the or	iginal excavatio	n is resulting in s	a total denth o	f 7 foot is		
							total applied	1 Z leet II	i that area	1
	82 tons) of				was hauled off-				i that area	1
8 loads (1		SEAD-	121C excav	vated soil	was hauled off-	site.				
loads (1)	soil from th	f SEAD- ne area o	121C excaven the south	vated soil east side o	was hauled off- of Building 367	site. at SEAD-17 was	excavated an	d staged		
loads (1) -foot of s	soil from the sta	f SEAD- ne area o bilized 1	121C excave in the south ead materia	vated soil east side o I is stock	was hauled off- of Building 367	site. at SEAD-17 was analytical data pr	excavated an	d staged		
loads (1) -foot of s ccess roa confirma	soil from the stand	f SEAD- ne area o bilized 1 ples (plus	121C excav n the south ead materia s 1 dup) we	vated soil east side o Il is stock re collecto	was hauled off- of Building 367 piled, awaiting	site. at SEAD-17 was analytical data pr	excavated an	d staged		
loads (1 -foot of s ccess roa confirma	soil from the state of the stat	f SEAD- ne area o bilized 1 bles (plus of depth	121C excave in the south ead materia is 1 dup) we of excavat	vated soil east side o il is stocky re collecto ion	was hauled off- of Building 367 piled, awaiting ed at SEAD-17.	site. at SEAD-17 was analytical data pr	excavated an ior to off-site	d staged disposal.	next to th	c
loads (1 -foot of s ccess roa confirma	soil from the state of the stat	f SEAD- ne area o bilized 1 bles (plus of depth	121C excave in the south ead materia is 1 dup) we of excavat	vated soil east side o il is stocky re collecto ion	was hauled off- of Building 367 piled, awaiting ed at SEAD-17.	site. at SEAD-17 was analytical data pr	excavated an ior to off-site	d staged disposal.	next to th	c
loads (1 -foot of s ccess roa confirma /isual ass Additiona	soil from the state of the stat	f SEAD- ne area o bilized 1 bles (plus of depth	121C excave in the south ead materia is 1 dup) we of excavat	vated soil east side o il is stocky re collecto ion	was hauled off- of Building 367 piled, awaiting ed at SEAD-17.	site. at SEAD-17 was analytical data pr	excavated an ior to off-site	d staged disposal.	next to th	c
loads (1 -foot of s ccess roa confirma /isual ass Additiona	soil from the state of the stat	f SEAD- ne area o ibilized 1 oles (plus of depth on at SE/	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is	vated soil east side o il is stockj re collecto ion approx 1	was hauled off- of Building 367 piled, awaiting ed at SEAD-17.	site. at SEAD-17 was analytical data pr	excavated an ior to off-site	d staged disposal. ar the cer	next to th	c
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona	soil from the state of the stat	f SEAD- ne area o ibilized 1 oles (plus of depth on at SE/	121C excave in the south ead materia is 1 dup) we of excavat	vated soil east side o il is stockj re collecto ion approx 1	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l	site. at SEAD-17 was analytical data pr	excavated an ior to off-site rox. 2' bgs ne	d staged disposal. ar the cer	next to th	c
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material	soil from the state of the stat	f SEAD- ne area o abilized 1 oles (plus of depth on at SEA	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated	vated soil east side o il is stock re collecto ion approx 1 To. Ton to date	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea	site. at SEAD-17 was analytical data pr st corner and app	excavated an ior to off-site rox. 2' bgs ne Manifes No's.	d staged disposal. ar the cer	next to th	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons	vated soil east side o il is stock re collecto ion approx 1 To. Ton to date	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type	site. at SEAD-17 was analytical data pr st corner and app Hauler	excavated an ior to off-site rox. 2' bgs ne Manifes No's.	d staged disposal. ar the cer t	next to th	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material Non-haz	soil from the state of the stat	f SEAD- ne area o bbilized 1 oles (plus of depth on at SE/ Total to date 218	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304	rated soil east side o il is stock re collecto ion approx 1 To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type	site. at SEAD-17 was analytical data pr st corner and app Hauler	excavated an ior to off-site rox. 2' bgs ne Manifes No's. 11461 to	d staged disposal. ar the cer t	next to th	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material Non-haz	soil from the state of the stat	f SEAD- ne area o bbilized 1 oles (plus of depth on at SE/ Total to date 218	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons	rated soil east side o il is stock re collecto ion approx 1 To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type	site. at SEAD-17 was analytical data pr st corner and app Hauler	excavated an ior to off-site rox. 2' bgs ne Manifes No's. 11461 to	d staged disposal. ar the cer t	next to th	e site.
loads (1 -foot of s ccess roa confirma /isual ass dditiona Material Non-haz	soil from the state of the stat	f SEAD- ne area o bbilized 1 oles (plus of depth on at SE/ Total to date 218	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304	rated soil east side o il is stock re collecto ion approx 1 To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli	excavated an ior to off-site rox. 2' bgs ne Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 1497 1 16737	next to the	e site.
loads (1 -foot of s ccess roa confirma /isual ass dditiona Material Non-haz Also see a Sampling	soil from the state of the stat	f SEAD- ne area o bbilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s I dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	rated soil east side o il is stock re collecto ion approx 1 To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater	excavated an ior to off-site rox. 2' bgs ne Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 1497 1 16737	next to the	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material Non-haz Also see a sampling 4 of samp	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material Non-haz Also see a Sampling 4 of samp	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s I dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l Type	excavated an ior to off-site rox. 2' bgs ne Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 1497 1 16737	next to the	e site.
3 loads (1 1-foot of s access roa 3 confirma Visual ass Additiona Material Non-haz Also see a Sampling 3 samples	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.
3 loads (1 -foot of s access roa 3 confirma Visual ass Additiona Material Non-haz Also see a Sampling 4 of samp	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l Type	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.
Ioads (1 -foot of s iccess roa confirmation isual ass Additiona Material Non-haz Also see a sampling samples	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l Type	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.
Ioads (1 -foot of s iccess roa confirmation isual ass Additiona Material Non-haz Also see a sampling samples	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l Type	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.
Ioads (1 -foot of s iccess roa confirmation isual ass Additiona Material Non-haz Also see a sampling samples	soil from the state of the stat	f SEAD- ne area o bilized 1 oles (plus of depth on at SE/ Total to date 218 uck and c	121C excav n the south ead materia s 1 dup) we of excavat AD-121C is Estimated tons 1,304 disposal log	To. Ton to date 5,480	was hauled off- of Building 367 piled, awaiting ed at SEAD-17. ' bgs in northea Mat'l Type SEAD Soil 7.	site. at SEAD-17 was analytical data pr st corner and app Hauler Riccelli Other Mater Mat'l Type	Manifes No's. 11461 to 16730 to	d staged disposal. ar the cer t 11497 1 16737 on or off	next to the ater of the 1499 to -site	e site.

P:\PIT\Projects\Seneca PBC II\SEAD-16_17\Construction Completion Report\Draft Final\Appendices\Appendix A - Daily Reports\Edited SEAD 16 17 & 121C Dly Rpt 121007.xls Edited SEAD 16 17 & 121C Dly Rpt 121007.xls 5/21/2008

Date:	7/18	/2007	Day:	Wednes	day	<u></u>	Weather Conditions:			
Job #	74	5172	-			(Overcast intermittent rain	70's		
Site Nam	e:					1	ſask(s):			
		ot SEA	D 16, 17 &	121 C		Ī	Excavation, sampling, and	T&D		
	, <i>»</i> - p		,			_	, <u></u> , <u></u> , <u></u> ,			
Parsons:				Position		S	S. St. George		Position	
Ben Mcal	lister			SSO			Bill Caldwell		Oper	
Dave Hur				UXO Te	ch		Kevin Lindmann		Oper	
Thomas ('S		СМ						
Visitors				Represe	nting					
Joelle Sal	iba			EPA Lat						
Cristina L				EPA Lat)					
Equipme	nt Utilize					J	PPE Level(s):			
Dozer		-	Mechanics		1	1)			
Off rd Tru			Water True		1					
Fuel Truc	k		Chemical '		1					
Excavator			Hand wash		1					
Excavator		1	Skid Steer		1					
Mini-exca	avator	1	Mower							
			Grapple B	ucket	1					
Health ar										
						affic awareı	ness, and slips/trips/falls.			
Performed Work Per			onitoring at	SEAD-1	6					
TCLP san	nple resul	ts of stab	ilized mater	rial at SEA	AD-17 did not me	et TCLP cri	teria for disposal. Additi	onal ceme	nt is requi	red to
stabilize	the mater	ial. An oi	der of 85 ba	ags (3.4 to	ons) of Portland ce	ment was p	laced and delivered by R	iccelli.		
The stabil	ized soil	at SEAD	-17 was mix	ed with a	n additional 3.4 to	ons of Portla	and cement in order to me	t TCLP d	isposal cri	teria.
Regular d	ust suppre	ession wa	as performed	d by wetti	ng roads and load	out areas a	t SEAD-17 and SEAD-12	21C.		
22 loads (437.61 to	ns) of the	e remaining	SEAD-1	7 excavation mate	rial was sen	t off-site except for the le	ad stabiliz	ation stoc	kpile.
The lead s	stabilizati	on stockp	oile at SEAI	D-17 was	covered with poly					
All cleare	d brush w	/ill remai	n on-site pe	r Steve A	bsolom's instruction	ons.				
5 split san	nples wer	e collecte	ed at SEAD-	-16 by Pa	rsons and EPA.					
5 split san	nples wer	e collecte	ed at SEAD.	17 by Pa	rsons and EPA.					
			SEAD-121							
6 loads (1	19.63 ton	s) of the	remaining s	oil excava	ated at SEAD-121	C was haul	ed off-site.			
S. St Geor	ge de-mo	bilized n	nore equipn	ent from	the sites.					
All work i	s comple	ted until	sample resu	lts return.						
Material	Londod									
material	Loaueu	Total	Estimated	To Ton	Mat'l		Manifest	1		
	Loads	to date	tons	to date	Туре	Hauler	No's.			
Non-haz	28	246	557		SEAD Soil	Riccelli	11501 to 11522			
NOII-naz	20	240	557	0,037	SEAD SOIL	Kiccem	16738 to 16743			
Also see o	ttached tr	uck and	disposal log			L	107501010745			
7(150 500 a	ittaciicu ti	uck and	disposal log							
		,								
Sampling						<u></u>	Other Materials	brought	on or off-	site
# of samp							Mat'l			
					rep collected split		Туре	Loads	CY	Tons
5 split san	ples were	e collecte	d at SEAD-	16 (EPA	rep collected split	s).	Cement	1		3.4
Notes:										

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Date:	7/19	0/2007	Day:	Thursda	у		Weathe	r Condit	ions:			
Job #	74	5172	_				Cloudy-	Showers	s 70's			
Site Nam	e:						Task(s)	:				
Seneca A	rmy Dep	oot SEAI	D 16, 17 &	121 C			Samplin	g				
n				Desition			6.64.0				D	
Parsons: Thomas (Andreas			Position CM	I		S. St. G	eorge			Position	
Ben Mca		/s		SSO								
Dave Hu		- 12-1-		UXO Te								
Visitors				Represe								
Equipme	nt Utiliz	ed:					PPE Le	vel(s):				
Dozer			Mechanics				D					
Off rd Tru			Water Tru									
Fuel Truc			Chemical									
Excavato			Hand wash									
Excavator Mini-exca			Skid Steer									
Wini-exc	avator		Mower Crample D	valent								
Health ai	nd Safety	:	Grapple B	uckei								
Work Pe												
					6 (44 samples + 3				amples +	1 dup).		
S. St. Geo	rge perso	onnel wer	e not on-site	e; awaitin	g lab results befor	re resumir	ig intrusiv	e work.				
Material	Loaded											
		Total	Estimated	To. Ton	Mat'l			Manifes	st			
	Loads	to date	tons	to date		Hauler		No's.				
Non-haz		246		6,037	SEAD Soil	Riccelli						
Sampling								laterials	brought	on or off	-site	
# of samp							Mat'l				1	
			re collected				Туре		Loads	CY	Tons	
	(plus I d	up) were	collected at	SEAD-1	21C.		None					
Notes:												

Prepared by:

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Job #	1120	/2007	Day:	Friday		W	eather Condit	ions:	_	
000 //	745	5172	-		<u> </u>	Cl	oudy 70's			
Site Nam						Ta	sk(s):			
		of SEAI	0 16, 17 & 1	121 C			mpling and der	nobilizati	on	
Scheel A	ing Dep	or ourn	, 10, 17 a 1				inpring and der			
Parsons:				Position		s.	St. George			Position
Ben Mcal	lister			SSO						
Visitors				Represe	nting					
Equipme	nt Utilize	ed:				PP	E Level(s):			
Dozer	int othics		Mechanics	Truck		D	20101(0)1			
Off rd Tru	ick		Water True							
Fuel Truc			Chemical 7							·····
Excavator			Hand wash							
Excavator			Skid Steer							
Mini-exca			Mower		······					
			Grapple Bu	ucket						
Health an	id Safety	:								
Work Pei	rformed:									
The final a	as-built c	onditions	at SEAD-1	21C and S	SEAD-16 were	surveyed.				
The final a Perimeter	as-built co samples	onditions were coll	ected at SEA	AD-16 (1	sample + 1 dup	surveyed. 5 from Grid G5 :	and 1 sample fr	rom Grid	I2).	
The final a Perimeter S. St. Geo	as-built co samples orge's wate	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup n the site.	surveyed. 9 from Grid G5	and 1 sample fr	rom Grid	I2).	
The final a Perimeter S. St. Geo	as-built co samples orge's wate	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup	surveyed. 5 from Grid G5 :	and 1 sample fr	rom Grid	I2).	
The final a Perimeter S. St. Geo	as-built co samples orge's wate	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup n the site.	surveyed. 9 from Grid G5 :	and 1 sample fr	rom Grid	12).	
The final a Perimeter S. St. Geo	as-built co samples orge's wate	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup n the site.	surveyed. 9 from Grid G5	and 1 sample fr	rom Grid	I2).	
The final a Perimeter S. St. Geo	as-built co samples orge's wate	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup n the site.	surveyed. 5 from Grid G5 s	and 1 sample fr	rom Grid	I2).	
The final a Perimeter S. St. Geo The surve	as-built co samples orge's wate ying and	onditions were colle er truck w	ected at SEA as de-mobi	AD-16 (1 lized from	sample + 1 dup n the site.	surveyed. 5 from Grid G5 ;	and 1 sample fr	rom Grid	12).	
The final a Perimeter S. St. Geo The surve	as-built co samples orge's wate ying and	onditions were coll er truck w air monit	ected at SE/ vas de-mobi oring equip	AD-16 (1 lized fror ment were	sample + 1 duj n the site. e sent off-site.	surveyed. 5 from Grid G5 a			I2).	
The final a Perimeter S. St. Geo The surve	as-built co samples orge's wate ying and Loaded	onditions were colle er truck w air monit	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton	sample + 1 duj n the site. e sent off-site. Mat'l	o from Grid G5 :	Manifes		I2).	
The final a Perimeter S. St. Geo The surve Material	as-built co samples orge's wate ying and	onditions were colle er truck w air monit Total to date	ected at SE/ vas de-mobi oring equip	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	o from Grid G5 : Hauler			I2).	
The final a Perimeter S. St. Geo The surve Material	as-built co samples orge's wate ying and Loaded	onditions were colle er truck w air monit	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l	o from Grid G5 :	Manifes		I2).	
The final a Perimeter S. St. Geo The surve Material	as-built co samples orge's wate ying and Loaded	onditions were colle er truck w air monit Total to date	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	o from Grid G5 : Hauler	Manifes		I2).	
The final a Perimeter S. St. Geo The surve Material	as-built co samples orge's wate ying and Loaded	onditions were colle er truck w air monit Total to date	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	o from Grid G5 : Hauler	Manifes		I2).	
The final a Perimeter S. St. Geo The surve Material	as-built co samples orge's wate ying and Loaded	onditions were colle er truck w air monit Total to date	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	o from Grid G5 : Hauler	Manifes		I2).	
The final a Perimeter S. St. Geo The surve Material Non-haz	as-built co samples orge's wate ying and Loaded Loaded	onditions were colle er truck w air monit Total to date	ected at SE/ /as de-mobi oring equip Estimated	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	Hauler Riccelli	Manifes No's.	t		
The final a Perimeter S. St. Geo The surve Material Non-haz	as-built co samples orge's wate ying and Loaded Loads	onditions were colle er truck w air monit Total to date 246	ected at SE/ vas de-mobi oring equips Estimated tons	AD-16 (1 lized from ment were To. Ton to date	sample + 1 duj n the site. e sent off-site. Mat'l Type	Hauler Riccelli	Manifes	t		
The final a Perimeter S. St. Geo The surve Material Non-haz	as-built co samples orge's wate ying and Loaded Loads	Total to date 246	ected at SE/ vas de-mobi oring equips Estimated tons	AD-16 (1 lized from ment were To. Ton to date 6,037	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil	Ofrom Grid G5 (Hauler Riccelli Other Mate	Manifes No's.	t on or off	site	
The final a Perimeter S. St. Geo The surve Material Non-haz	as-built co samples orge's wate ying and Loaded Loads	Total to date 246	ected at SE/ vas de-mobi oring equips Estimated tons	AD-16 (1 lized from ment were To. Ton to date 6,037	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil	Hauler Riccelli Other Mate	Manifes No's.	t		
The final a Perimeter 5. St. Geo The surve Material Non-haz Sampling of samp 2 samples	as-built co samples orge's wate ying and Loaded Loads	Total to date 246	ected at SE/ vas de-mobi oring equips Estimated tons	AD-16 (1 lized from ment were To. Ton to date 6,037	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil	Ofrom Grid G5 (Hauler Riccelli Other Mate	Manifes No's.	t on or off	site	
The final a Perimeter S. St. Geo The surve Material Non-haz Sampling of samp 2 samples Notes:	as-built co samples orge's wate ying and Loaded Loaded Loads : : : : : : : : : : : : : : : : : : :	Total to date 246 ted toda; up) were	ected at SE/ vas de-mobi oring equip Estimated tons y: collected at	AD-16 (1 lized fror ment were To. Ton to date 6,037 SEAD-1	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil 6.	Ofrom Grid G5 (Hauler Riccelli Other Mate Mat'l Type	Manifes No's.	t on or off	site	
The final a Perimeter S. St. Geo The surve Material Non-haz Sampling of samp 2 samples Notes:	as-built co samples orge's wate ying and Loaded Loaded Loads : : : : : : : : : : : : : : : : : : :	Total to date 246 ted toda; up) were	ected at SE/ vas de-mobi oring equip Estimated tons y: collected at	AD-16 (1 lized fror ment were To. Ton to date 6,037 SEAD-1	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil 6.	Ofrom Grid G5 (Hauler Riccelli Other Mate	Manifes No's.	t on or off	site	
The final a Perimeter S. St. Geo The surve Material Non-haz Sampling of samp 2 samples Notes:	as-built co samples orge's wate ying and Loaded Loaded Loads : : : : : : : : : : : : : : : : : : :	Total to date 246 ted toda; up) were	ected at SE/ vas de-mobi oring equip Estimated tons y: collected at	AD-16 (1 lized fror ment were To. Ton to date 6,037 SEAD-1	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil 6.	Ofrom Grid G5 (Hauler Riccelli Other Mate Mat'l Type	Manifes No's.	t on or off	site	
The final a Perimeter S. St. Geo The surve Material Non-haz Sampling of samp 2 samples Notes:	as-built co samples orge's wate ying and Loaded Loaded Loads : : : : : : : : : : : : : : : : : : :	Total to date 246 ted toda; up) were	ected at SE/ vas de-mobi oring equip Estimated tons y: collected at	AD-16 (1 lized fror ment were To. Ton to date 6,037 SEAD-1	sample + 1 dup n the site. e sent off-site. Mat'l Type SEAD Soil 6. 6.	Ofrom Grid G5 (Hauler Riccelli Other Mate Mat'l Type	Manifes No's.	t on or off	site	

	7/30	/2007	Day:	Monday	1	Weath	er Condit	ions:		
Job #	74	5172	-			Cloudy	70's			
Site Nam	10.					Task(s)	:			
		of SEAL	0 16, 17 &	121 C		. ,	ng, load-o	ut and gr	ading	
	timy bep	OT SEAL	, 10, 17 G	121 0		Jampin	ig, ioad-o	ut and gri	Iding	
Parsons:				Position	l	S. St. G	eorge			Position
Thomas (C Andrew	'S		СМ		Paul St	George			Oper/Supt
Ben Mcal	llister			SSO		Jason N	licael			Oper/Supt
						Bill Cal	dwell			Oper
Visitors				Represe	enting	Kevin I	lindmann			Oper
	ne Heilin					DDE L				
	ent Utilize		Mechanics	Truele		D PPE Le	vei(s):			
Dozer Off rd Tri	uck	1	Water Tru			D				
Fuel Truc			Chemical							
Excavato		1	Hand was							
Excavato			Skid Steer							· · · · · · · · · · · · · · · · · · ·
Aini-exca			Mower							
VIIII-CAU			Grapple B	ucket						
lealth ar	nd Safety		Orappie D							
	i a Bareej									
Work Pe	rformed:									
The TCL	P sample i	from the l	ead stabiliz	ed mater	al met the TCL	P requirement. The	ead stabil	lized mate	erial was	oaded out from
SEAD-17	for off-si	te non-ha	zardous dis	sposal. H	ot spots at SEAI	D-16 were excavated	: Ditch #	l in Grids	C7, B8, a	and C8, and
SB16-5 a	rea in Grie	d D8 wer	e taken to b	edrock. S	Samples were co	ollected at SEAD-16	in Grid D	8 (1 floor	sample a	nd 1 sidewall
ample w	ith a dupli	icate). O	ne foot exc	avation ar	ea north of Buil	ding S-311 was grad	ed at SEA	D-16.		
The hot s	nots at SE	AD-17 w	ere excava	ted and lo	aded out: Gride	E5 and F2 due to dif	forences	in enlit en	mole resu	lte
						rid E5 and 1 sample			inpic resu	113.
						backfilled; the entir				
						orted to burning tray				
ne prope	mant pipe		KS Stored at	00 010	inds were transp	orred to burning tray	5 101 11451	iiiig.		
	Loaded									
Aaterial				(T) (T)	Mat'l		Manifes	st		
Aaterial		Total	Estimated	10. Ion		1				
laterial	Loads	Total to date	Estimated tons	to date		Hauler	No's.	-		
	Loads 26			to date		Hauler Riccelli	No's. 11523 to			
		to date	tons	to date	Туре					
lon-haz	26	to date 272	tons	to date 6,682	Туре					
Ion-haz	26	to date 272	<u>tons</u> 646	to date 6,682	Туре					
lon-haz Iso see a	26 attached tr	to date 272	<u>tons</u> 646	to date 6,682	Туре	Riccelli	11523 to	0 11548		
lon-haz Iso see a ampling	26 attached tr	to date 272 uck and c	tons 646 disposal log	to date 6,682	Туре	Riccelli Other Materials	11523 to	0 11548	-site	
lon-haz lso see a ampling of samp	26 attached tr	to date 272 uck and c ted today	tons 646 disposal log	to date 6,682	Type SEAD Soil	Riccelli Other Materials Mat'l	brought	o 11548 on or off		
lon-haz lso see a ampling of samp samples	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log y: collected at	to date 6,682	Type SEAD Soil	Other Materials Mat'l Type	11523 to	0 11548	Tons	
lon-haz liso see a ampling of samp samples samples	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log	to date 6,682	Type SEAD Soil	Riccelli Other Materials Mat'l	brought	o 11548 on or off		
Also see a ampling of samp samples samples	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log y: collected at	to date 6,682	Type SEAD Soil	Other Materials Mat'l Type	brought	o 11548 on or off	Tons	
lon-haz lso see a ampling of samp samples samples	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log y: collected at	to date 6,682	Type SEAD Soil	Other Materials Mat'l Type	brought	o 11548 on or off	Tons	
lon-haz liso see a ampling of samp samples samples	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log y: collected at	to date 6,682	Type SEAD Soil 6.	Riccelli Other Materials Mat'l Type Bank-run gravel	brought	o 11548 on or off	Tons	
ampling of samp	26 attached tr : : : : : : : : : : : : : : : : : : :	to date 272 uck and c ted today up) were	tons 646 disposal log y: collected at	to date 6,682	Type SEAD Soil 6.	Riccelli Other Materials Mat'l Type Bank-run gravel epared by:	brought	on or off	Tons	

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Date:	7/31	/2007	Day:	Tuesday		Weat	her Condit	ions:		
Job #	745	5172	_			Cloud	y 70's			
Site Name	:					Task	s):			
		ot SEAL	D 16, 17 &	121 C			ation and T	`&D		
	<u> </u>				······································					
Parsons:				Position		S. St.	George			Position
Thomas C	Andrew	S		СМ			St George			Owner
Ben Mcalli	ister			SSO	····		St George			Oper/Supt
Dan Dougl	as			Tech	·······················		Micael			Oper/Supt
Visitors				Represen	ting		aldwell			Oper
						Kevin	Lindmann			Oper
Equipmen	t Utilize	ed:				and the second state of th	Level(s):			
Dozer			Mechanics			D				
Off rd True			Water Tru			· · · · · · · · · · · · · · · · · · ·				
Fuel Truck			Chemical '							
Excavator]	Hand wash				· · · · · · · · · · · · · · · · · · ·			
Excavator			Skid Steer							
Mini-excav	ator		Mower							
Health and	1 Cofety		Grapple B	ucket						
meanin and	Safety									
Work Perf	formed:									
WOIKICII	or meu.									
The coil ex	cavated	at Gride I	C7 B8 C8	and D8 at	SEAD 16 vecto	erday (7/30) was loa	ded out			
						. A rectangular area				
						al ground surface; a				
	the first	hotspot,	which will	be excavate	ed to 2-feet so t	hat the total depth e	xtends 3 fe	et below	the origin	al ground
surface.										
Excavation	began i	n the nor	theast part o	of the hot sp	pot.					
Material L	oaded							·		
Material	Joaucu	Total	Estimated	To. Tons	Mat'l		Manifes	t	1	
	Loads	to date	tons	to date	Туре	Hauler	No's.			
Non-haz	6	278	159	6,841	SEAD Soil	Riccelli	11590 to	0 11595	1	
Also see at	tached tr	uck and o	disposal log							
Sampling:						Other Materia	ls brought	on or of	f-site	
# of sample	es collec	ted toda	y:			Mat'l				
None						Туре	Loads	CY	Tons	
						Bank-run grave	1		448.48	
Notes:										
					Pi	repared by:				

Job #	0/ 1/	2007	Day:	Wedneso	lay	We	eather Conditi	ons:		
	74	5172	-			Cle	ar 90's			
Site Nam						Ta	sk(s):			
		of SEAT	0 16, 17 & 1	121 C			cavation and T	&D		
eneca A	rmy Dep	OL SEAL	J 10, 17 & J	1210		LA		<u>ab</u>		
Parsons:				Position		S. 5	St. George			Position
Thomas (C Andrew	S		CM			ve St George			Owner
Ben Mcal				SSO			on Micael			Oper/Supt
						Bil	l Caldwell			Oper
Visitors				Represe	nting	Ke	vin Lindmann			Oper
0	4 1 1411					BD	F L qual(s):			
	ent Utilize		Mechanics	Truck	1	D	E Level(s):			
Dozer Off rd Tri	uck	1	Water True		1	U				
Fuel Truc		1	Chemical 7		1					
Excavator			Hand wash		1					
Excavato			Skid Steer		1	tin a second and a second s				
Mini-exca		1	Mower		1					
VIIII-CACI			Grapple Bi	ucket						
Health ar	nd Safety	:	on appie B							
	meeting		g							
			0							
Work Pe	rformed:									
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat	ed to 2-ft bgs a	nd 3 loads were	sent off-site.			
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot s	pot in Gri	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot sj	pot in Gri vation of t	d C9 at S	EAD-16 wa	is excavat rtheast co	ed to 2-ft bgs a orner of SEAD-	nd 3 loads were 121C continued;	sent off-site. 5 loads were l	nauled of	f-site.	
The hot sj The excav	pot in Gri vation of t	d C9 at S he hotspo	ots in the no	rtheast co	nmer of SEAD-	nd 3 loads were 121C continued;	5 loads were l		f-site.	
The hot sj	pot in Gri vation of t Loaded	d C9 at S he hotspo	estimated	To. Ton	mer of SEAD-	121C continued;	5 loads were l		f-site.	
The hot sp The excav	pot in Gri vation of t Loaded Loads	d C9 at S he hotspo Total to date	Estimated tons	To. Ton to date	mer of SEAD- Mat'l Type	121C continued; Hauler	5 loads were l Manifes No's.	t	f-site.	
The hot sp The excav	pot in Gri vation of t Loaded	d C9 at S he hotspo	estimated	To. Ton to date	mer of SEAD-	121C continued;	5 loads were l Manifes No's. 11596 to	t 11599	f-site.	
The hot sp The excav Material Non-haz	pot in Gri vation of t Loaded Loads 8	d C9 at S he hotspo Total to date 286	Estimated tons 229	To. Ton to date 7,070	mer of SEAD- Mat'l Type	121C continued; Hauler	5 loads were l Manifes No's.	t 11599	f-site.	
The hot sp The excav Material Non-haz	pot in Gri vation of t Loaded Loads 8	d C9 at S he hotspo Total to date 286	Estimated tons	To. Ton to date 7,070	mer of SEAD- Mat'l Type	121C continued; Hauler	5 loads were l Manifes No's. 11596 to	t 11599	f-site.	
The hot sp The excav Material Non-haz	pot in Gri vation of t Loaded Loads 8	d C9 at S he hotspo Total to date 286	Estimated tons 229	To. Ton to date 7,070	mer of SEAD- Mat'l Type	121C continued; Hauler	5 loads were l Manifes No's. 11596 to	t 11599	f-site.	
The hot sp The excav Material Non-haz Also see a	pot in Gri vation of t Loaded Loads 8 attached th	d C9 at S he hotspo Total to date 286	Estimated tons 229	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli	5 loads were 1 Manifes No's. 11596 to 11626 to	t 11599 11629		
The hot sp The excav Material Non-haz Also see a Sampling	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were l Manifes No's. 11596 to	t 11599 11629		
The hot sp The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	
The hot sy The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to	t 11599 11629		
The hot sy The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	
The hot sy The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	
The hot sy The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	
The hot sy The excav Material Non-haz Also see a Sampling # of samp	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	mer of SEAD- Mat'l Type	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	
The hot sp The excav Material Non-haz Also see a Sampling	pot in Gri vation of t Loaded Loads 8 attached th g:	d C9 at S he hotspo Total to date 286 ruck and o	Estimated tons 229 disposal log	To. Ton to date 7,070	Mat'l Type SEAD Soil	Hauler Riccelli Other Mate	5 loads were 1 Manifes No's. 11596 to 11626 to rials brought	t 11599 11629 on or off	-site	

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Date:	8/2/	/2007	Day:	Thursday	у	Weath	er Condit	ions:		
Job #	74:	5172	-			Clear 9	0's			
Site Nam	ie:					Task(s)):			
		ot SEAl	D 16, 17 &	121 C			tion, samp	ling, and	load-out	
Parsons:				Position	l	S. St. 0	George			Position
Thomas (C Andrew	'S		CM		Paul St	George			Oper/Supt
Ben Mcal	lister			SSO		Josh St	elmack			Oper
						Bill Ca	dwell			Oper
Visitors				Represe	enting					
					······································	<u>.</u>				
Equipme	nt Utilize					PPE L	evel(s):			
Dozer		1	Mechanics		1	D				
Off rd Tr			Water Tru							
Fuel Truc			Chemical '		1					
Excavator			Hand wash		1					
Excavato	r 1.5 cy	1	Skid Steer		1					
Mini-exca	avator		Mower		1					
			Grapple B	ucket						
Health a										
A Tool B	ox meetin	ng was he	ld in the mo	orning.						
Work Pe										
						d F9, and 3 loads v				
						floor and 1 perime				
					dditional 1-foot ex	cavation) and Grid	1 D2 (1 fo	ot excava	tion) at S	EAD-17 were
			e hauled of							
						loor and 1 perimet		floor), an	nd G3 (1 f	loor).
Two floor	samples	and 2 sid	ewall samp	les were o	collected from hot	spots at SEAD-12	1C.			
Material	Loaded						15-16			
			Estimated				Manifes	t		
	Loads	to date	tons	to date		Hauler	No's.	1.700		
Non-haz	9	295	209	7,279	SEAD Soil	Riccelli	11720-1	1728		
					L					
Also see a	attached ti	ruck and o	disposal log	5						
Sampling										
# of samp		ted toda				Other Material	h waard h t			
-			-	<u></u>		Other Materials	brought	on or on	-site	
4 samples	were col	lected at 1	SEAD-1210			Mat'l	Lacit	OV	man	
			SEAD-17.	1.000	D 16	Туре	Loads	CY	Tons	
-	plus I du	iplicate w	vere collecte	u at SEA	D-10.	Bank-run gravel	ļ		775.52	
Notes:						L				

Prepared by:

Date:	8/3/	2007	Day:	Friday			Weathe	r Conditi	ons:		
Job #	74:	5172	-				Cloudy	80's			
Site Nam	e.						Task(s)	:			
		ot SEAI	0 16, 17 &	121 C				Delivery			
Parsons:				Position			S. St. G	eorge			Position
Ben Mcal	lister			SSO							
Visitors				Represe	nting						
Equipme	nt Utiliz	ed:					PPE Le	vel(s):			
Dozer Off rd Tru	1.		Mechanics Water True				D				
Fuel Truc			Chemical								
			Hand wash								
Excavator Excavator			Skid Steer								
Mini-exca			Mower								
WIIII-CAC			Grapple Bi	ucket			<u></u>				
Health ar	nd Safety	:	Grappie B								
Work Per	rformed:										
S. St. Geo	orge deliv	ered bank	run gravel	for use a	s backfill (1	153 tons)	•				
Material	Loaded										
WIALCHIAI	Loaucu	Total	Estimated	To Ton	Mat'l	T		Manifes	t		
	Loads	to date	tons	to date	Туре		Hauler	No's.	·		····
Non-haz	Louds	295	10113	7,279	1 5 100		Riccelli	1.0 0.			
				,,							
	<u></u>										
Sampling	;:					(Other Materials	brought	on or off	-site	
None							Mat'l				
							Туре	Loads	CY	Tons	
						I	Bank-run gravel	6		153	
Notes:											

Prepared by:

Job # Site Nam Seneca A Parsons:	e:	172	-				r Condit					
Seneca A						Cloudy	80's					
Seneca A						Task(s)						
arsons:		ot SEAI	0 16, 17 &	121 C		Excavation and grading						
arsons:												
				Position		S. St. G				Position		
	Andrews	S		CM			George			Owner Oper/Supt		
Ben Mcal	lister			SSO			Jason Micael Oper Bill Caldwell Oper					
lisitors				Represe	enting	Dili Cal						
quipme	nt Utilize	d:				PPE Le	vel(s):					
)ozcr		1	Mechanics		1	D						
Off rd Tru			Water Tru		I							
uel Truc			Chemical 7									
Excavator		1	Hand wash	Station	1							
Excavator Aini-exca			Skid Steer		1	<u> </u>						
/ini-exca	ivator		Broom Grapple Br	volvot	1			<u> </u>				
lealth ar	nd Safety:		Grapple B	ucket	1							
Vork Pei	rformed:											
Packfillin	a of the d	een (>2')	excavated	areas and	grading at SEA	D-16 was completed						
Backfillin	g of the d	eep(>2)	excavated	areas and	grading at SEA	D-17 was completed	•					
n additic	anal foot y	vas excav	vated at the	hot spot	located in the cir	rcular area at SEAD-	121C to b	edrock, s	o that the	total		
						ted soil was hauled o						
laterial	Loaded											
		Total	Estimated	To. Ton	Mat'l		Manifes	t				
	Loads	to date	tons	to date	Туре	Hauler	No's.					
Jon-haz	3	298	119	7,398	SEAD Soil	Riccelli	16748 to	16750				
100.000.0	ttoohad tr	uak and	disposal log									
itso see a	ittached tr		insposar log	,								
ampling						Other Materials	brought	on or off	-site			
	les collec	ted toda	y:			Mat'l	1					
						Туре	Loads	CY	Tons			
						Bank-run gravel			66.24			
of samp							1					
of samp												
of samp one							L					
of samp one						epared by:	I					

Job #	8/14/	2007	Day:	Tuesday		Weath	er Conditi	ons:	_				
	745	172				Cloudy	80's						
Site Name:	:					Task(s)	Task(s):						
Seneca Arı		ot SEAL	0 16, 17 &	121 C		Site Re	storation A	ctivities					
						···							
Parsons:				Position		S. St. G				Position Oper/Supt			
Thomas C /		5		СМ			Jason Micael						
Ben Mcallis	ster			SSO		Bill Ca	Idwell			Oper			
Visitors				Represe	nting								
Equipment	t Utilize					PPE Le	evel(s):						
Dozer		1	Mechanics		1	D							
Off rd Truc			Water Tru		1								
Fuel Truck			Chemical										
Excavator 3		1	Hand wash										
Excavator 1			Skid Steer		1								
Mini-excav	ator		Broom										
TT - 141 1	1 C - C - t - i		Grapple B	ucket	1		<u> </u>						
Health and													
Tool Box N	leeting												
Work Perf	ormed.												
WORK I CH	or mea.												
The hot spo	nt excava	ation to b	edrock (apr	prox. 3 ft]	bgs) in northeas	t corner of SEAD-12	21C was co	mpleted					
The final lo	ad out a	t SEAD-	121C was c	ompleted	, and the area w	as graded.							
					,	0							
					<u> </u>								
Material L	oaded												
			Estimated				Manifest	t					
	Loads	to date	tons	to date	Туре	Hauler	No's.						
Non-haz	1	299	31	7,429	SEAD Soil	Riccelli	16751						
									I	·			
	tached tr	uck and o	lisposal log										
Also see att													
Also see att						Other Materials	brought	on or off	cito				
						Other Waterlas	Diougin						
Sampling:		tod today				Mattl							
Sampling: # of sample	es collec	ted today	y:		· · · · · · · · · · · · · · · · · · ·	Mat'l	Loads	CV	Tons				
Sampling:	es collec	ted toda	y:			Туре	Loads	СҮ	Tons 99.36				
Sampling: # of sample none	es collec	ted today	y:				Loads 2	CY	Tons 99.36				
Sampling: # of sample	es collec	ted toda	y:			Туре		СҮ					
Sampling: # of sample none	es collec	ted toda	y:			Туре		СҮ					
Sampling: # of sample none	es collec	ted toda	y:			Туре		CY					
Sampling: # of sample none	es collec	ted today	y:		p	Туре		СҮ					

Job #	8/15	/2007	Day:	Wednes	day	Weatl	er Conditi	ions:				
Job #	745	5172	-			Cloud	y 80's					
Site Name	c:					Task(s):			<u></u>		
Seneca A	rmy Dep	ot SEAL	0 16, 17 & 1	121 C		Site re	Site restoration and demobilization					
Parsons:				Position			George			Position		
Thomas C		S		СМ			Micael			Oper/Supt		
Ben Mcall	lister			SSO		Bill C	ldwell			Oper		
Visitors				Represe	nting							
Todd Heir	10			Parsons	8							
J Travers				Parsons								
Equipmer	nt Utilize		Mechanics	Truck	1	D PPE I	evel(s):					
Dozer	1.	1	Water True		1	D						
Off rd Tru			Chemical 7		1							
Fuel Truck		1										
Excavator		l	Hand wash									
Excavator			Skid Steer		1							
Mini-exca	ivator		Broom	1								
	20.01		Grapple Bu	ucket	1							
Health an		:										
Tool Box	Meeting											
Work Per	rformed:											
Work Per	rformed:											
			rading of th	e excavat	ted areas at SE	AD-121C. Only are	as greater th	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g				AD-121C. Only are	as greater th	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g	rading of th as de-mobil			AD-121C. Only are	as greater tl	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g				AD-121C. Only are	as greater th	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g				AD-121C. Only are	as greater tl	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g				AD-121C. Only are	as greater tl	nan 2' we	re backfil	led.		
Completed	d backfill	ing and g				AD-121C. Only are	as greater tl	nan 2' we	re backfil	led.		
Completec 5. St. Geor	d backfill rge's equ	ing and g				AD-121C. Only are	as greater tl	nan 2' we	re backfil	led.		
Completec 5. St. Geor	d backfill rge's equ	ing and g	as de-mobil	ized from	n the site.	AD-121C. Only are			re backfil	led.		
Completec 5. St. Geor	d backfill rge's equi	ing and g ipment w	as de-mobil Estimated	ized from	h the site.		Manifes		re backfil	led.		
Completec S. St. Geor Material I	d backfill rge's equ	ing and g ipment w Total to date	as de-mobil	ized from To. Ton to date	h the site. Mat'l Type	Hauler			re backfil	led.		
Completec S. St. Geor Material I	d backfill rge's equi	ing and g ipment w	as de-mobil Estimated	ized from	h the site.		Manifes		re backfil	led.		
Completec S. St. Geor Material I	d backfill rge's equi	ing and g ipment w Total to date	as de-mobil Estimated	ized from To. Ton to date	h the site. Mat'l Type	Hauler	Manifes		re backfil	led.		
Completec S. St. Geor Material I	d backfill rge's equi	ing and g ipment w Total to date	as de-mobil Estimated	ized from To. Ton to date	h the site. Mat'l Type	Hauler	Manifes		re backfil	led.		
Completec S. St. Geor Material I	d backfill rge's equi	ing and g ipment w Total to date	as de-mobil Estimated	ized from To. Ton to date	h the site. Mat'l Type	Hauler	Manifes		re backfil	led.		
Completed 5. St. Geor Material J Non-haz	d backfill rge's equi Loaded Loads	ing and g ipment w Total to date	as de-mobil Estimated	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli	Manifes No's.	t		led.		
Completed S. St. Geor Material J Non-haz	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia	Manifes No's.	t		led.		
Completed S. St. Geor Material J Non-haz Sampling	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l	Manifes No's.	t on or off	-site			
Completed S. St. Geor Material J Non-haz Sampling	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t	-site Tons			
Completed S. St. Geor Material I Non-haz Sampling	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l	Manifes No's.	t on or off	-site			
Completed S. St. Geor Material J Non-haz Sampling # of samp None	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t on or off	-site Tons			
Completed S. St. Geor Material J Non-haz Sampling ¥ of samp None	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t on or off	-site Tons			
Completed S. St. Geor Material J Non-haz Sampling # of samp None	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t on or off	-site Tons			
Completed S. St. Geor Material J Non-haz Sampling ¥ of samp None	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	h the site. Mat'l Type	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t on or off	-site Tons			
Completed	d backfill rge's equi Loaded Loads	Total to date 299	Estimated tons	ized from To. Ton to date	Mat'l Type SEAD Soil	Hauler Riccelli Other Materia Mat'l Type	Manifes No's.	t on or off	-site Tons			

APPENDIX B

DISPOSAL CHARACTERIZATION

-

Table B-1 SEAD-16 Disposal Characterization Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID								SEAD-16 DS-16-01 DCS-SOIL DS-16-01 6/5/2007 SA RA	SEAD-16 DS-16-02 DCS-SOIL DS-16-02 6/5/2007 SA RA	SEAD-16 DS-16-04 DCS-SOIL DS-16-04 6/5/2007 SA RA
		Maximum	Frequency	Regulatory	Number of	Number of	Number of			
Parameter	Units	Detect	of Detection	Linit ²	Exceedances	Detects	Analyzed	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry										
Corrosivity 3	S.U.	7.58	100%		0	3	3	7.48	7.58	7.43
Flashpoint	°F	>200	0%	<140	0	3	3	>200	>200	>200
Reactive Cyanide	MG/KG	0	0%		0	0	3	10 U	10 U	10 U
Reactive Sulfide	MG/KG	0	0%		0	0	3	10 U	10 U	10 U
TCLP Inorganics										
TCLP Arsenic	UG/L	0	0%	5000	0	0	3	4.2 U	4.2 U	4.2 U
TCLP Barium	UG/L	2640	100%	100000	0	3	3	1280	2640	1260
TCLP Cadmium	UG/L	15	100%	1000	0	3	3	6	15	2.4
TCLP Chromium	UG/L	1.3	33%	5000	0	1	3	0.84 U	0.84 U	1.3 B
TCLP Lead	UG/L	2410	100%	5000	0	3	3	783	2410	316
TCLP Mercury	UG/L	0	0%	200	0	0	3	0.12 U	0.12 U	0.12 U
TCLP Selenium	UG/L	0	0%	1000	0	0	3	6.1 U	6.1 U	6.1 U
TCLP Silver	UG/L	0	0%	5000	0	0	3	1 U	1 U	1 U

Notes:

(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory.

(2) TCLP regulatory limits are based on 40CFR 261.23 and 40CFR 261.24.

(3) Wastes may be considered corrosive with a pH < 2 or > 12.5.

U - compound was not detected

B - the reported value is an estimated concentration

Table B-2 SEAD-17 Disposal Characterization Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID		Maximum	Frequency	Regulatory	Number of	Number of	Number of	SEAD-17 DS-17-01 DCS-SOIL DS-17-01 6/4/2007 SA RA	SEAD-17 DS-17-02 DCS-SOIL DS-17-02 6/4/2007 SA RA	SEAD-17 DS-17-03 DCS-SOIL DS-17-03 6/4/2007 SA RA	SEAD-17 DS-17-04 DCS-SOIL DS-17-04 6/4/2007 SA RA	SEAD-17 DS-17-05 DCS-SOIL DS-17-05 6/20/2007 SA RA	SEAD-17 DS-17-06 DCS-SOIL DS-17-06 6/20/2007 SA RA	SEAD-17 DS-17-07 DCS-SOIL DS-17-07 6/20/2007 SA RA
Parameter	Units	Detect	of Detection	Limit ²	Exceedances	Detects	Analyzed	Value (Q)	Value (Q)	Value (Q)				
Wet Chemistry														
Corrosivity	S.U	7.8	100%		0	5	5	7.8	7.37	7.15	6,34	7.03		
Flashpeint	۵F	-200	0°. o	~140	0	5	5	>200	>200	>200	>200	>176		
Reactive Cyanide	MG/KG	0	0.0 0		0	0	5	10 U						
Reactive Sulfide	MG/KG	0	0° a		0	0	5	10 U						
TCLP Inorganics														
TCLP Arsenic	ίGί	76	1 6ª ò	5000	0	3	19	4.2 U	4.2 U	7.6 B	4.2 U	4.2 U	4.2 U	4.2 U
TCLP Barium	UG/L	2460	100%	100000	0	19	19	2420	1390	608	2300	2080	2460	2030
TCLP Cadmium	UG/L	693	8.2%	1000	0	17	19	77.2	104	9,2	385	508	693	449
TCLP Chromium	UGL	132	53%	5000	0	10	[9	0.84 U	0.84 U	36.9	0.84 U	1.3 B	14 B	0.84 U
TCLP Lead	UGL	99700	95%	5000	8	18	19	2060	2350	764	61600	61000	99700	33500
TCLP Mercury	ĽG′L	0	0ª. c	200	0	0	19	0.12 U	0.12 U	012 U	0.12 U	0.12 U	0 12 U	0 12 U
TCLP Selenium	UGL	65	5%.0	1000	0	1	19	6.1 U	6.1 U	6.1 U				
TCLP Silver	UG/L	12	1100	5000	0	2	19	ιU	1 U	IU	1 U	1 U	۱U	1 U

Notes

(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory

(2) TCLP regulatory limits are based on 40CFR 261 23 and 40CFR 261 24

(3) Wastes may be considered corrosive with a pH < 2 or > 12.5

U compound was not detected

B - the reported value is an estimated concentration

E = a value estimated or not reported due to the presence of interference

Table B-2 SEAD-17 Disposal Characterization Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE OC CODE STUDY ID		Maximum	Frequency	Regulatory	Number of	Number of	Number of	SEAD-17 DS-17-08 DCS-SOIL DS-17-08 6/20/2007 SA RA	SEAD-17 DS-17-09 DCS-SOIL DS-17-09 6/20/2007 SA RA	SEAD-17 DS-17-10 DCS-SOIL DS-17-10 6/27/2007 SA RA	SEAD-17 DS-17-11 DCS-SOIL DS-17-11 6/27/2007 SA RA	SEAD-17 DS-17-12 DCS-SOIL DS-17-12 6/27/2007 SA RA	SEAD-17 DS-17-13 DCS-SOIL DS-17-13 6/27/2007 SA RA	SEAD-17 DS-17-14 DCS-SOIL DS-17-14 7/9/2007 SA RA
Parameter	Units	Detect	of Detection	Limit ²	Exceedances	Detects	Analyzed	Value (Q)	Value (Q)					
Wet Chemistry														
Corrosivity 3	SU	78	100%		0	5	5							
Flashpoint	٩Ŀ	>200	0°, 0	<140	0	5	5							
Reactive Cyanide	MG/KG	0	00,6		0	0	5							
Reactive Sulfide	MG/KG	0	0%		0	0	5							
TCLP Inorganics														
TCLP Assenic	UG/L	76	16%	5000	0	3	19	4.2 U	4 2 U	52 B	4 2 U	48 B	4 2 U	4 2 U
TCLP Barium	UG/L	2460	100%	100000	0	19	19	1280	1040	1030	1620	2040	2050	1810
TCLP Cadmium	UG/L	693	89%	1000	0	17	19	136	45	36.3	121	615	494	7.2
TCLP Chromium	UGL	132	5.3%%	5000	0	10	19	4,4	5.7	3.8 B	0.84 U	091 B	0.84 U	0.98 B
TCLP Lead	UG/L	99700	95% n	5000	8	18	19	2540	1560	1200	8630	20300	23700	191
TCLP Mercury	UG/L	0	0%5	200	0	0	19	0.12 U	0.12 U	0.12 U	0.12 U	0 12 U	0.12 U	0.12 U
TCLP Selenium	UGIL	65	5° 6	1000	0	1	19	6.1 U	6.1 U					
TCLP Silver	UG/L	12	1100	5000	0	2	19	1 U	1 U	1 U	1 U	ιυ	τU	1 B

Notes

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(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory

(2) TCLP regulatory limits are based on 40CFR 261 23 and 40CFR 261 24

(3) Wastes may be considered corrosive with a pH ≤ 2 or ≥ 12.5

U = compound was not detected

B - the reported value is an estimated concentration

E - a value estimated or not reported due to the presence of interference

P-PEP Projects.Seneca PBC-IESEAD-16_17/Construction Completion Report/Draft Final/Appendices/Appendix B - Disposal Characterization/Table B-2 S-17_disposal_data.xls

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Table B-2 SEAD-17 Disposal Characterization Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID		Maximum	Frequency	Regulatory	Number of	Number of	Number of	SEAD-17 DS-17-15 DCS-SOIL DS-17-15 7/9/2007 SA RA	SEAD-17 DS-17-16 DCS-SOIL DS-17-16 7/9/2007 SA RA	SEAD-17 DS-17-17 DCS-SOIL DS-17-17 7/9/2007 SA RA	SEAD-17 DS-17-18 DCS-SOIL DS-17-18 7/13/2007 SA RA	SEAD-17 17-DS-19 DCS-SOIL 17-DS-19 7/20/2007 SA RA
Parameter	Units	Detect	of Detection	Limit ²	Exceedances	Detects	Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry												
Corrosivity '	S.U.	7.8	100%		0	5	5					
Flashpoint	°F	>200	0%n	<140	0	5	5					
Reactive Cyanide	MG/KG	0	0%		0	0	5					
Reactive Sulfide	MG/KG	0	0%		0	0	5					
TCLP Inorganics												
TCLP Arsenic	UG/L	76	16%	5000	0	3	19	4 2 U	42 U	4.2 U	4.2 U	4.2 U
FCLP Barium	UG/L	2460	100%	100000	0	19	19	1260	1100	340	724	370 E
TCLP Cadmium	UG/L	693	800.6	1000	0	17	19	25.7	2.1	0.36 U	130	0.36 U
TCLP Chromum	UG/L	132	53%%	5000	0	10	19	0.84 U	0.84 U	0.84 IJ	3.6 B	132 E
TCLP Lead	UG/L	99700	95%	5000	8	18	19	931	32.5	2.9 U	14600	46.8
TCLP Mercury	UG/L	0	0ª 0	200	0	0	19	0.12 U	0 12 U	0 12 U	0.12 U	0.12 U
TCLP Selensum	UG/L	6.5	5%	1000	0	1	19	6.1 U	6.1 U	6 I U	6.5 B	6.1 U
TCLP Silver	UG/L	12	1106	5000	0	2	19	1.2 B	ιU	1 U	1.0	1 []

Notes

(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory.

(2) TCLP regulatory limits are based on 40CFR 261 23 and 40CFR 261 24

(3) Wastes may be considered corrosive with a pH ≈ 2 or ≥ 12.5

U = compound was not detected

B = the reported value is an estimated concentration

E = a value estimated or not reported due to the presence of interference

P PTT/Projects/Seneca PBC II/SEAD-16_17/Construction Completion Report/Draft Final/Appendices/Appendix B - Disposal Characterization/Table B-2 S-17_disposal_data.xls

APPENDIX C

DUST MONITORING RECORDS

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Table C-1Summary of Air Monitoring DataConstruction Completion Report for SEAD-16 and SEAD-17Seneca Army Depot Activity

Site	Date	Time	D453	D615	Difference
			(ug/m^3)	(ug/m^3)	
SEAD-17	10-Jul-07	8:20	107.3	101.3	6
		9:35	107	101.3	5.7
		12:45	115.8	103.4	12.4
		15:10	117.5	100	17.5
		16:10	98	115.4	17.4
		17:00	118.4	97.7	20.7
SEAD-17	11-Jul-07	7:00	127.2	133.4	6.2
		7:40	117.74	100.6	17.14
		10:00	117.7	100.6	17.1
		12:00	100.3	114.5	14.2
		14:00	97.6	167.2	69.6
		15:30	182.7	182.7	0
SEAD-17	12-Jul-07	7:00	17.4	46.3	28.9
		7:35	4.56	1.9	2.66
		9:00		23.7	
		10:00	61.2	77.8	16.6
SEAD-17	13-Jul-07	6:45	18		18
SEAD-17	17-Jul-07	12:00	13.2	40.53	27.33
SEAD-17	18-Jul-07	15:00	45.8	43.2	2.6
		16:05	54.9	42.8	12.1

Notes:

- The difference column is the difference between upwind and downwind field readings, which must be below 150 ug/m³ per NYSDEC CAMP..
- 2. Field readings were recorded with a Dataram.
- 3. The Datarams were setup at SEAD-16 and SEAD-17 on July 13, 2007, July 16, 2007, and July 17, 2007. The field personnel checked the Dataram and observed low levels of dust. Data was not recorded in the field.

			Corpor	ate Safety and		
C				Peri	meter Air Moni	itoring Sheet
7/10/0 Date: DR-4	7	4	an Data	Zerc	7/10/07-	
Date: DR-4	000		pn Date: hermo	2010	eu.	
Instrument:	Ben McAl	1.1	Mode	E M Ali	1	
Sampler:	Jen Michtl	lister	Signa	Bar McAlls ture:	×4	
	Upv	vind	Down	wind 1	Down	wind 2
Time:	Location	Reading	Location	Reading	Location	Reading
			SEAD 17	107.3 g/m3	SEAD 17	101.3 4/17
Comments:	0820 10	0920	u			
	All Rady	TWA	e" 6	•		
		0	MW 17-1	115-8 4 MINI	Stackpile	103.44× h
Comments:	12:10			· · · · · · · · · · · · · · · · · · ·		······································
	ALL P.	long TW	A			
Comments:	All Keac 15:01	ionys W		100-0 4312	Stockal	e 117-5-44
	All Reu	digs T	WA			
Comments:	16:10	AUGS 1	MW 17-1	93.0 GL	Stocept	Le 115-44m
	All Read	ing	TWA-			
Comments:	Stop Hue.	0				
	All Read	TI	VA			
Comments:	/III read	<i>y</i> <u></u> <u>y</u> <u></u> <u>y</u> <u></u>	<u>vr</u>			and a second defend the factor for a second s
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			Corpor	ate Safety and	Health Manu	al (CSHM)
q				Peri	meter Air Monil	toring Sheet
Date DR nstrument: MCK Sampler:	71,2007 1000 Illista	Calibrati	0 Date: <u>Herma</u> Model Signat	Ben M		2007
	Upwinc		Down	wind 1	Downy	vind 2
Time:	Location	Reading	Location	Reading	Location	Reading
0760	864D17		Stockpile	133-4	Skanhion	127.2
Comments:	In Adal	Sheelwy	>	:		
[0:00 Comments:	SEADIN		Seckipel	100.6	Execution	u7.7
12:00 Comments:	SEADUL		Stackpile	114.5	Exama Wen	[00.3
14:00 Comments:	SEAD 171	•	Stockpill	0 167.2	Excutation	97.6
lら!え) Comments:	56AD 171		Shockyard	1182.7	Excamption	182.7
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Comments:						1000
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Revision No.: 0 Page: 1 of 1 Issue Date: 7/14/2006

APPENDIX D

PHOTO LOG

Table D-1

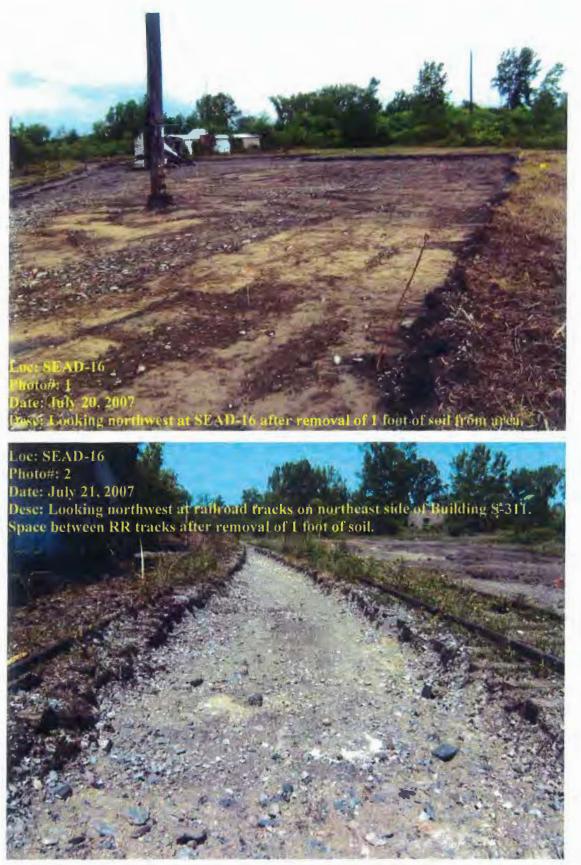
Photograph Index Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Photo #	Date	Site	Description
1	7/20/2007	SEAD-16	Looking northwest at SEAD-16 after removal of 1 foot of soil from area.
2	7/21/2007	SEAD-16	Looking northwest at railroad tracks on northeast side of Building S-311. Space between RR tracks after
			removal of 1 foot of soil.
3	7/21/2007	SEAD-16	Looking northwest at railroad tracks on northeast side of Building S-311. Space on either side of the RR
			tracks after removal of 1 foot of soil.
4	7/21/2007	SEAD-16	Looking south at Ditch #1 after 1 foot excavation.
5	7/30/2007	SEAD-16	Looking south at Grid E5 excavation to bedrock.
6	7/30/2007	SEAD-16	Looking east at excavator backfilling space between railroad tracks.
7	7/31/2007	SEAD-16	Southern end of Building S-311 looking east at retaining wall, Grid D8, after Phase II excavation.
8	7/30/2007	OB Grounds	Mini-excavator loading pipes into burn tray to eliminate any remaining propellant residue.
9	7/10/2007	SEAD-17	Looking southwest at excavation of 1 foot of soil from Grid F3.
10	7/10/2007	SEAD-17	Looking at 1 foot excavation area southwest of Building 367.
11	7/12/2007	SEAD-17	Erosion control measures.
12	7/12/2007	SEAD-17	Backfilling.
13	7/13/2007	SEAD-17	Truck load out.
14	7/14/2007	SEAD-17	Exterior wall of Building 367 after 1 foot excavation.
15	7/18/2007	SEAD-17	Looking west at excavator mixing cement and lead hot spot soil to stabilize the soil for non-hazardous
			disposal off-site.
16	8/2/2007	SEAD-17	Looking west at Grid D2 Phase II excavation, removal of 1 foot.
17	8/2/2007	SEAD-17	Phase II excavation at Grid G3, total excavation depth was 2 feet below original ground surface.

5/21/2008

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SEAD-16 Photo Log



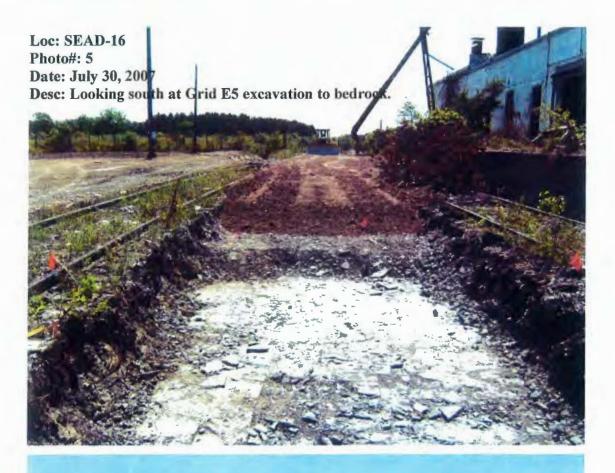


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Appendix D- Photo Log Construction Completion Report for SEAD-16 & SEAD-17

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Loc: SEAD-16 Photo#: 6 Date: July 30, 2007 Desc: Looking east at excavator backfilling space between railroad tracks.





Loc: Open Burn Grounds Photo#: 8 Date: July 30, 2007 Desc: Mini-excavator loading pipes into burn tray to eliminate any remaining propellant residue.



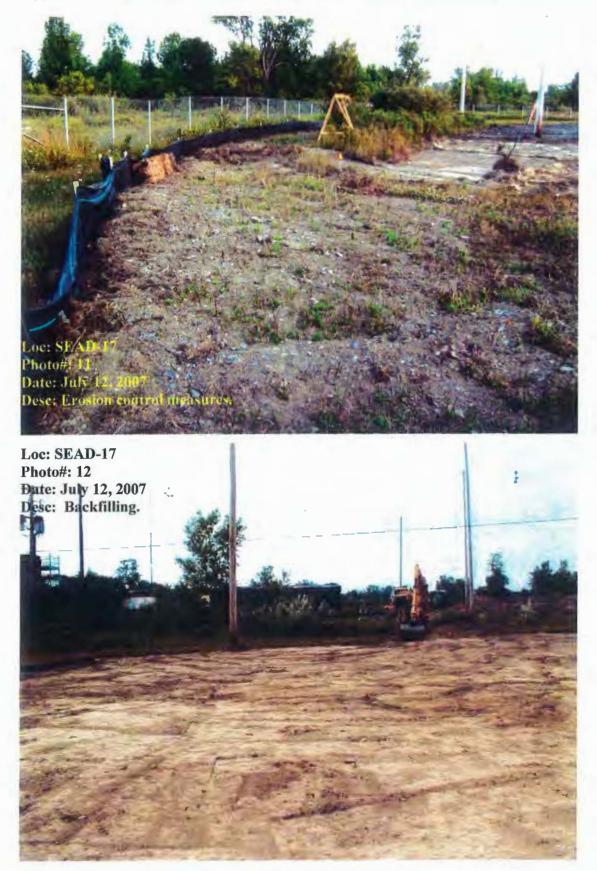
SEAD-17 Photo Log



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Appendix D– Photo Log Construction Completion Report for SEAD-16 & SEAD-17

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Loc: SEAD-17 Photo#: 13 Date: July 13, 2007 Desc: Truck load out.



Loc: SEAD-17 Photo#: 15 Date: July 18, 2007 Desc: Looking west at excavator mixing cement and lead hot spot soil to stabilize the soil for non-hazardous disposal off-site.





Appendix D– Photo Log Construction Completion Report for SEAD-16 & SEAD-17



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APPENDIX E

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COMPLETE ANALYTICAL RESEARCH

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STIE I OCATION GRID ID I OCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID		Management	Frequency	Classon	Number of	Number of Times	Number of	SEAD-16 A8 16EXFL-A8-61 SOIL 16EXFL-A8-61 0 2 7719 2007 SA RA	SEAD-16 A8 (6EXPR-A8-01 16EXPR-A8-01 0 0 2 5/3/2007 SA RA	SEAD-16 A8 16EXPR-A8-02 SOIL 16EXPR-A8-02 0 0 2 5:3 2007 \$A RA	SEAD-16 A9 16EXPR-A9401 SOIL 16EXPR-A9401 0 6 2 5:3:2007 SA RA	SEAD-16 B5 16EXPR-B5-01 16EXPR-B5-01 0 0 2 55/2007 SA RA	SEAD-16 B6 INEXFL-86-01 INEXFL-86-01 0 0 2 7719/2007 SA RA	SEAD-16 B6 16EXPR-B6-01 SOIL 16EXPR-B6-01 C 0.2 -14/2007 SA RA
Parameter	Units	Value	of Detection		Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic P AHs		1 anne	th Determin	Guid	t. ceee dances	Creation		(100 (9)	10100101					
Benzofa onduacene	UG KG	2400	~ 5 " .		0	;	1							
Senzo(a)py (cay	LOKG	\$800	5100		0	2	4							
Benzoth (Buoranthere	UGKG	75(0)	250		0	1	4							
Senzo(k)(luonauthese	1656	535	25""		0	1	4							
Chrysene	1 G/KG	2300	Still.		0		-1							
Dibunz(a h)anthracenz	UGIKG	(500)	250.0		0	1	4							
Indeno(1.2,3-ed)pyrenu	LGKG	NUDE	Sil" o		0		4							
BAP Loxicity Equivalence	MGKG	S 11	100*.,	1.1	0	4								
Metals	10180		1.000 0				-							
Antimoas	MORO	230	Si'e	4	4	67	83	1 1	12.9.1	4 7 I	343	14 n J	17 6	601
Vicine	MGIKG		1407	21 *	0	83	5	293	5.4	5.5	4.6	6.2	5.7	5.7
Cadmian	MOKG		100"	60	0	82	82	0.08.1	0.44 T	0.29.1	0.18 J	0.6.3	0.27	0.8
Copper	MG KG		£ (20) ¹⁰	(0000	0	82	82	15.8.1	110	52.2	51.5	169	0.8 J	449
Lead	MGKG		100"	1250	4	85	83	5471	676	259	179	884	1601	424
Mercury	MGKG		100"	57	0	82	8.2	0.945	4 7	0.342	0.344	0.207	0.03.3	0.313
Ibalham	MG KG	1 385	40.	0.7	0	3	83	0.86 13	128	1) 80 G	τυ	0.95 U	0.75 U	11
Zing	MG KG		100"	104603	0	82	8.2	40.4.1	163	104	84.2	224	50	127 J

Notes

(1) The cleaning goal values are from Table 2-1 of SEAD-10-17 Remedial Design Work Plan

(2) Sample-duplicate pasis were averaged and the average results were used in the summary statistics presented

in this table

()) The maximum detected ennerntration was obtained from the average of the sample and its duplicate

COMPARTMENT (CONT) INVERTS Equivalence value was calculated by substituting the detection lim with the include detection limit for non-detect results and taking non-detect values at salf value. The toracity courvalent factors (TEF) to the NYSDEC BTE guidelines were as follow. (4) Benzo(a)pyrene (BAF) Toxicity Equivalence value was calculated by subsituting the detection limit.

valent factors (TEE) for the NYSDEC (BTE guidelines were as to:
V A HE	NYSDEC TEF
Bunzolajanthiacene	0.1
Buezotajpyrane	1
Berzotoifluoranthene	0.1
Ber zet e tiluoranthene	0.01
Christine	0.01
Dibenz'a hiantitacene	l
Indeno(1.2.3-ed)pyrene	0.1
and a flood of the content atom that	excited the site-specific.

(5) Abulad and online coll indicates a concentration that exceeded the site-specific CUGs

(6) A shaded (boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of

current s.t. conditions and are not part of the final dataset.

E compound was not detected

I - the reported value is an estimated concentration

(1) - the compound was not detacted, the associated reporting limit is approximate.

R - the analytical result was relicted during data validation.

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SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								16ENPR-B6-02	16EXFL-B7-01	16EXPR-B7-01	16EXFL-B8-01	IGENFL-B8-02	B8	16EXFL-B9-01
LOCATION ID									SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL	SOIL
MATRIX								SOIL IGEXPR-B6-02	16EXFL-B7-01	16EXPR-87-01	16EXFL-B8-01	16EXFL-68-02	16EXFL-B8-03	16EXFL-B9-01
SAMPLE ID								102.018-02	DEATE-BIAN	0	DEAL POINT	10CATL-Domiz	10EAFE-DA-0.3	10EATL-BV-01
TOP OF SAMPLE								0.2	0.2	0.2	02	62	02	0.2
BOTTOM OF SAMPLE								7/19/2007	7/19/2007	4/4/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007
SAMPLE DATE									5.A	4/4/2007 SA	SA		SA	SA
QC CODE								SA	RA	RA	RA	SA RA	RA	RA
STUDY ID						Number		RA	N/1	N.4	NA	A man and the second se	6.0	15.73
		Maximum	Farmeren	Cleanup	Number of	of Times	Number of							
														111.00
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs												the statement of the state of the state		
Benzo(a)anthracene	UG/KG	2400	75%		0	.4	4							
Benzo(a)pyreae	UG/KG	58(0)	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5	2.5%		n	1	4					新安全部的新行 动行动		
Chry send	UG/KG	2.3()()	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		n	1	-1					a de la construcción de la const		
Indono(123-cd)pyrene	UG/KG	6000	50%		ŋ	2	4							
BAP Toxicity Equivalence ⁴ Metals	MG/KG	9.01	041%	10	0	4	4					清約月時期日		
Antimony	MG/KG	230	81%	41	4	67	83	0.8 J	19.9 U	431	18.4 U	67.3 J	12.2 J	18.1 U
Arsenie	MG/KG	112	100%	215	0	83	83	31	3.7	5.4	5 2	64J.9	4.2 J	5.8
Cadmium	MG/KG	5.7	100%	60	0	82	82	0,3 J	0.15.1	0.62	0 25	1995年1996日3天北部	0.57 J	0.63
Copper .	MG/KG	2390	100%	10000	0	82	82	61.6	12 J	67.6	36 6 J	193 June 193 June	77.7 J	80.4 J
Load	MG/KG	6410	100%	1250	4	83	83	302 1	35 4 1	363	200 1	经建设性的原1370日常常	230 J	342 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0 494	- 0 075	0,345	0 222	4.9	1.9	0.904
Thallium	MG/KG	1.385 3	4%	67	0	3	83	0.9 UJ	0.8× U	1.1 U	0.81 U	U.86-UJ	0.81 UJ	0.8 U
Zinc	MG/KG	711	100%	10000	0	82	82	151 J	44.8	112 3	60.1	209 1	146 J	111

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxiciny Equivalence value was calculated by subsituting the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value.

equivalent factors (TEF) for the NYSDEC	
cPAHs	NYSDEC TEF
Benzo(a)anthracene	0,1
Benzo(a)pyrene	ł
Benzo(b)fluoranthene	01
Benzo(k)fluoranthene	10.0
Chrysene	0,01
Dibenz(a,h)anthracene	1

Indeno(1.2.3-cd)pyrene (5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

R = the analytical result was rejected during data validation

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STIT FOR ATION GRID ID LOCATION ID MATRIN NAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QUICODE STUDY ID						Number		SEAD-16 B9 16EXPR-89-01 DITCH SOIL 16EXPR-89-01 0 0 2 4/4/2007 SA RA	SEAD-16 B10 IGEXPR-B9-02 DITCH SOIL IGEXPR-B9-02 0 0 2 4/4,2007 SA RA	SEAD-16 B10 16EXFL-B10-01 DITCH SOIL 16EXFL-B10-92 0 2 7/19/2007 DU RA	SEAD-16 B10 10EXFL-B10-01 DJTCH SOIL 10EXFL-B10-01 0 0 2 7/19/2007 SA RA	SEAD-16 B10 bEXPR-B10-01 DITCH SOIL 16EXPR-B10-01 0 0 0.2 4/01/2007 SA RA	SEAD-16 B10 16EXPR-B10-02 SOIL 16EXPR-B10-02 0 0.2 4-1-2007 SA R,X	SEAD-16 C1 10EXPR-C4-01 SOIL 16EXPR-C4-01 0 0 2 4/4.2007 SA RA
		Maximum	Frequency	Cleanup	Number of	of Times	Number of							
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 1	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Bengoi a trancite	UG KG	2400	150		ù	1	4							
Benzole Ipyrene	LCI KO	5 5 (10)	4.1° .		0		4							
[scnzo-b)thioranthung	UG KG	75 HI	~~~.		£1	*	1							
Benz (k)thoranthene	UG KG	32.51	257 -		0	1	4							
Christerie	UG KG	32.90)	513°,.		(1	-	4							
Dibenz(a h)anthracene	UG KG	15-30	25%		0	1								
Indian(1): Seed(p) rene	t G KG	-> 22343	51101		0	2	4							
BAP Instetti Equivalence ⁴ Metals	Morko	9.01	$ \alpha \alpha^{\mu} _{\sigma}$	j0	0	L	4							
Antimony	MG KG	236	810 n	-11	4	67	83	20.8.1	14.8.1	67]	÷ J	401	211	501
Arsenic	MG KG		100%	21.5	0	83	85	5.9	77	35J	2.6.J	53	4.8	33
Cadmium	MG KG		1.40%	00	0	82	82	0.69	2.2	0.17.1	0141	0.8	0.42	0.20
Copper	MGING		100"	10000	0	82	82	209 J	[60]	34.5.1	32.1.1	142	44.3	68.5
Lead	MG KG		100".,	1250	4	83	83	7911	1050 1	147.1	120 1	786	137	589
Mercury	MG KG		100"	5.7	0	82	8.2	0.449	0.613	0 222	0.173	0.385	0.357	0.026
Thathum	MG KG	1.585	4*	6.7	0	3	83	0.94 {:	0.03 (1	0.89 UJ	0.82 UI	110	0.92 U	0.68 U
Zinte	MG KG		700° n	10000	0	82	\$2	194	222	62.9.1	51.5 J	143.7	8151	62.6.1

Notes

(r.) The cleaning goal values are from Table 2-1 of SEAD-16, 7 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table.

(5) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsitiuting the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value. The toxicity equivalent factors (TEF) for the NY SDEC BTE guidelines were as follow

unt factors (TEF) for the NY SDEC.	B FE guidelines were as fo
CP ALIS	NYSDEC TEF
Banzo(a)anthiacane	D
Bunzo(a)pyrunu	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibeng(a,h)anthracene	1
Indeno(1/2/3-ed)pyrene	0.1
In the second start of the second sec	an an adda di dhar antar anna activa

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded boxed sample indicates that the soil represented by the sample has been removed from the site as

part of the exeavation. Therefore, the analytical results for the staded sample are not characteristic of

current site conditions and are not part of the final dataset

E - compound was not detected

I = the reported scalar is an estimated concentration

I. I. the enopoeed was not detected, the associated reporting unsit is approximate

R - the analytical result was rejected during data validation

1 - Company Services (FERS - 2000) - assingtion Completion September Land Appendixes Appendixes Appendixes (Appendixes - Complete Apple Lical Faulty Lable D4) Sets_complete_confiting_ood_dataxis

SITE LOCATION GRID ID LOCATION ID MATRIX SAMPLE ID								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
LOCATION ID MATRIX												North States and the state of t		
MATRIX								C.5	CG	C7	C8	Ce	C9	C10
								16EXFL-C5-01	16EXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01	16EXFL-C9-01	16EXFL-C9-02	16EXFL-C10-01
SAMPLEID								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
								16EXFL-C5-01	INEXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01	16EXFL-C9-01	16EXFL-C9-02	16EXFL-C10-01
TOP OF SAMPLE								0	0	0	0	the state of the second	0	0
BOTTOM OF SAMPLE								02	0.2	0.2	0.2	0.2	0,2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	8/2/2007	8/2/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
						Number						1 House and the		
		Maximum	Frequency	Cleanup	Number of	of Times	Number of					水量的把W-WEARED and		
Parameter t	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 2	Value (Q)	Value (Q)	Value (Q)				
Carcinogenic PAHs											/ M.	·····································		
Benzo(a)anthmeene U	UG/KG	2400	75%		0	3	4					and the second second		
Benzo(a)pyrene U	UG/KG	5800	50%		()	2	4					it is a fear and the second second		
Benzo(b)fluoranthene U	UG/KG	7500	75%		0	3	4					(and in your a through all all in the second		
Benzo(k)fluoranthene U	UG/KG	52.5 3	25%		0	1	4							
	G/KG	2300	50%		0	2	4					三、这种影响和现象在		
	UG/KG	1600	25%		0	1	4							
	UG/KG	6000	50%		a	2	4							
	MG/KG	9.01	100%	10	0	4	.1							
Metals	10/100	2	1000 10	1		4								
	MG/KG	230	81%	41	4	67	83	20 I U	0.68 U	24.2	0,63 U	230	1.2 J	3.6 J
	MG/KG	112	100%	21.5	0	83	83	6.7	51	7,2	2.5	1 10 Chilly of 6.3 100 100	7.3	3.2
	MG/KG	5.7	100%	60	0	82	82	0.3	0 19 1	0.61	0.15 J		0.5	0.39
	MG/KG	2390	100%	10080	0	82	82	20.4 J	13 J	389 1	14 J	431.1	25.3	25.6
	MG/KG	6410	100%	1250	4	83	83	23.5 5	32 6 J	1160 J	1191	6410 J	27.3	79.2
	MG/KG	4.9	100%	5.7	0	82	82	1.3	0.062	0.016 J	0.53	The COLE P	0,163	0.234
	MG/KG	1.385 3	4%	6.7	0	3	83	0.88 U	0.84 U	0.76 U	0.77 U	0.78 U.	0.75 U	0,69 U
	MG/KG	711	100%	10000	0	82	82	64 7	50.4	697	48,3	11.5 ST. 11. 1542	54.3	81.9

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value. The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

Iva	iont factors (TEP) for the NYSDE	C BIE guidennes were as follow
	cPAHs	NYSDEC TEF
	Benzo(a)anthracene	01
	Benzo(a)py rene	1
	Benzo(b)fluoranthene	0 1
	Benzo(k)fluoranthene	0.01
	Chrysene	0,01
	Dibenz(a.h)anthracene	1
	Indeno(1,2.3-cd)pyrene	01

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate R = the analytical result was rejected during data validation

P PT Projecte Seneen PBC II SEAD-16_17 Construction Completion Report Druit Final Appendices Appendics As Complete Analytical results: Table D-15-16_complete_confirm_col_data xix

SITE LOCATION GRID ID LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID		Maximum	Frequency	Cleanup	Number of	Number of Times	Number of	SEAD-16 C10 16EXPR-C10-01 SOIL 16EXPR-C10-01 0.2 0.2 4/4/2007 SA RA	EAD IN 1 - COD ISEXTR-CLODZ SOLZ IOEXTR-CLODZ 0 0 2 7/182037 SA 2 2 7/182037 SA 2 2 2 2 2 2 2 2 2 2 2 2 2	SEAD-16 C10 16EXPR-C10-03 SOIL 16EXPR-C10-03 0 2 8/2/2007 SA RA	SEAD-16 D4 16EXFL-D4-01 SOIL 16EXFL-D4-01 0 û 2 7/19/2007 SA RA	SEAD-16 D-4 16EXPR-D4-01 SOIL 16EXPR-D4-01 0 0 2 4/J/2007 SA RA	SEAD-16 D4 16EXPR-D4-02 SOIL 16EXPR-D4-02 0 0 2 4/4/2007 SA RA	SEAD-16 D5 16EXFL-D5-01 SOIL 16EXFL-D5-01 0 0.2 7/19/2007 SA RA
Parameter	Units	Value	of Detection	Goal '	Exceedances	Detected	Analyzes 2	Value (Q)	Walue (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenie PAHs Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(b)fluoranthene Chrysene Dibenz(a,li)anthracene Indeno(1,2,3-ed)pyrene BAP Toxicity Equivalence ⁴ Metals	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG MG/KG	2400 5800 7500 52,5 ³ 2300 1600 6000 9.01	75% 50% 25% 25% 25% 50% 100%	10		3 2 3 1 2 1 2 4	4 7 7 7 7 7 7 7							
Antimony	MGKG	230	81%	41	1	67	8.3	723		19,4 1	105 J	163J	11.1	0.65 UJ
Arsenie	MG/KG	11 2	100%	21 5	0	83	83	5.2	C. S.	4,5	4 5 J	R 5	5.1	3.8 J
Cadmium	MG/KG	57	100%	60	0	82	82	0.93		0.65	0,22 J	0.74	0,93	0 22 J
Copper	MG/KG	2390	[00%	10000	0	82	82	109		128	57	196	1.54	16 1
[.cad	MG/KG	6410	100%	1250	4	83	8.3	530	1	659	229 J	1070	887	9]]
Mereury	MG/KG	49	100%	57	0	82	82	0 331	1. 98 15 A 149	15	0.505	0.126	0 104	0.047
Thallum Zinc	MG/KG MG/KG	711	4%	6 7 10000	0	3 82	R3 82	1 U 140 J	· · · · · · · · · · · · · · · · · · ·	0,71 U 109	0.74 UJ 89.7 J	0.74 U 153 J	0.87 U 176 J	0 R UJ 48 7 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzelayyrene (BAP) Toxicity: Equivalence value was calculated by subsitting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow EC TEF

cPAHs	NYSDEC
Benzo(a)anthracene	0
Benzo(a)py rene	1
Benzo(b)fluoranthene	01
Benzo(k)fluoranthene	0.01
Chry sone	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-ed)pyrene	0.1
	1 1 4 1

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UI = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

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SITE LOCATION GRID ID LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID	Units	Maximum	Frequency	Cleanup	Number of Exercise	Number of Times Deterted	Number of	SEAD-16 D6 16EXFL-D6-01 S0IL 16EXFL-D6-01 0 2 7/19/2007 SA RA Volue 10)	SEAD-16 D7 16EXFL-D7-01 SOIL 16EXFL-D7-01 0 0 2 7/19/2007 SA RA Value (0)	SEAD410 US (AEXPEDS-0) SCAT (AEXPEDS-0) 0 (AEXPEDS-0) (AEXPEDS	SEAD-16 D8 16EXFL-D8-02 SOIL 16EXFL-D8-02 0,2 7/30/2007 SA RA	SEAD-12, DE (hESSW-Do-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-o) (hESSW-D4-0) (hESSW	SEAD-16 EX8 10EX SN-0D-01 SOL (AEXSN-0D-01 4.5 719/2807 5.6 R 5 R 5 R 5 Vaue 400	SEAD-(8 D3 (06X5W-D3-02 S002 506X5W-D4-02 1-3 7(9-220)3 53 8-3 8-3 Value (0)
Corcineganie PAHs	L'IIILE	· · · · · ·	the farmer of the	com.	South Contractions			12000 131	1405 147	Taking the second second				COLUMN TO A COLUMN
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4						1. Silling and the second	8 202
Benzo(a)py rene	UG/KG	5800	517%		0	2	4			1 1 1 1 1 1 1 1		1000	4/00/00 N	
Benzo(b)fluoranthene	UG/KG	7500	7.5 %n		0	3	4					1900 FRI	1 200	8
Benzo(k)fluoranthene	UG/KG	52.5	2.5%		Ω	1	4				6. J	13		16 Y
Chrysone	DG/KG	2300	511%		0	2	4			5 ¥		he secol	N 0. 8	N
Dibenz(a,h)anthracene	UG/KG	1600	2.5%		0	1	-1						1 (A) (A)	17 18
Indeno(1.2.3-ed)pyrene	UG/KG	6000	50%		0	2	4				1.1	Sec. 22		12 107-
BAP Toxicity Equivalence ⁴ Metals	MG/KG	9.01	100%	10	0	4	4			= 11			1. 1. 1. 1.	Same S
Antimony	MG/KG	230	81%	41	4	67	8,3	075 UJ	0.64 UJ	195.21	16.3 J	68.4	181	198
Arsenic	MG/KG	112	100%	21.5	0	83	83	3.2 J	3.1 3	11.2)	3.2	188.4	i.i.t.	50
Cadmium	MG/KG	57	100%	60	G	82	82	0,09 J	0.1 J	2.31	0.22	1.K.	0.00 R.	0.167
Copper	MG/KG	2390	100%	10000	0	82	82	219	194	172	25 2	- 118 ×	经国际	12,7/1
Load	MG/KG	6410	100%	1250	4	83	83	174 J	1661	10901	206 J	3350 J	10 N U N I	[1005]
Mercury	MG/KG	4.9	100%	57	Ċ.	82	82	0.062	0,035	13	1.6 J	15R.	JUCON R	0.018
Thallium	MG/KG	1.385	4%	67	0	3	83	0.92 UJ	9.79 UJ	375 UJ	0.82 J	0,25 U	9.81 (1)	Direl)
Zinc	MG/KG	711	100%	(0000	()	82	82	80 J	97 J		55.2 J	I IND R	362 8	JR.T

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit

with the method detection lunit for non-detect results and taking non-detect values at half value

The toxicity equivalent factors (TEF) for the NYSDEC	
cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01

Indeno(1.2,3-cd)pyrene 0.1 (5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shalled, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the execution. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

[] = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Dibenz(a,h)anthracene

R = the analytical result was rejected during data validation

P / PT Projects Senece PBC/1/5/EA/17 Construction Completion Report Druß EnglisAppendices/Appendix E - Complete Analytical results Table D-1/5-16_complete_confirm_coil_data Ma

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STELOFATION GRID ID LOCATION ID NATRIX SAMPLE ID TOP OF SAMPLE BOFTOM OF SAMPLE								\$EAD-16 D8 16EXSW4D840+ SOIL 16EXSW-D8407 0.8 1.5 7/19/2007	SEAD-16 D8 16EXSW-D8-04 SOIL 16EXSW-D8-04 0.5 1.8 7:19:2007	SFAD-16 D8 (6EXSW-D8-06 SOII (6EXSW-D8-07 2 7 30 2607	SEAD-16 D8 16ENSW-D8-06 SOIL 16ENSW-D8-06 2 7 36/2007	SEAD-16 D9 16EXFL-D9-61 SOIL 16EXFL-D9-01 0-2 7:19-2007	SEAD-16 E3 IGENPR-E3-01 SOIL IGENPR-E3-01 0 2 4/4-2007	SEAD-16 E4 15ENFL-64-01 SOIL 15ENFL-F4-01 0.7 7.19/2007
SAMPLE DATE OCCODE								SA	SA	DU	SA	5.4	5A	5.5
STUDY ID								RA	RA	R.A.	RA	R.4	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of Times	Number of							
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 2	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs Benzie(afanthracene Benzie(afanthracene Benzie(affanthracene Benzie(affanthracene) Benzie(affanthracene) Denzie(affanthracene) Unisiene	LG KG LG KG LG KG LG KG LG KG	2400 5800 7500 51 5 2300	- \$45 \$107, 2529 \$107, 5107,		6) 11 12 13	2 2 2 1 2	 							
Dibenz(a hianthiacene	EGKG	1600	2500		0	1	4							
Indeno(1,2,3-ed)pyrene	LG-KG	6000	50"5		0	2	4							
BAP Toxicity Equivalence' Metals	MGKG	0.0]	100" 5	10	0	4	4							
Antonom	MG KG	230	\$120	41	4	67	83	I J	26J	2 J	2.3 1	78)	56 J	141
Aisenia	MG KG	11.2	100%	21.5	0	83	8.3	4 0	4.6	4 8	3.6	3.2 J	4 3	2 5 J
Cadminin	MG KG	5.7	LOO ⁿ a	60	n	8.2	82	0.26	0.52.1	t 5.0	0.05 U	0.13 J	0.76	0.12.1
Copper	MG KG		[(:{)***	10000	0	82	82	20 3	23 3 J	24.1	19,6	37 1	83.5 J	21.9
Lead	MG KG		10u ⁿ a	1250	4	83	8.3	13 7 J	50 4 J	54 8 J	47 2 J	221 J	444.1	22 2 J
Mercury	MG KG	10	()(ne	57	0	82	82	0.025 J	0.046	0 074 J	0.087 J	0.436	0.409	12
T taille m Zine	MG-KG MG-KG		4° 5 141° 6	6 7 [0080	C) 63	3 82	83 82	0.82 U 48 3	078 U 496	075 U 543 J	0.76 U 44,4 J	0 76 UJ 70,5 J	1 3 U 122	0 79 GJ 53 4 T

Notes

(1) The deamip goal values are from Table 2-1 of SEAD-16-17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

in inits caute (3) The maximum detected concentration was obtained from the average of the sample and its duplicate (4) Beneo(apyrene (BAP) Toyyery Equivalence value was calculated by subsitizing the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value

The toracity equiv	alent factors (TEF) for the NYSDEC cPAHs	NYSDEC TEF
	Benzoralunthracene	0.1
	Benzoi apyrene	1
	Benzorb)fluoranthene	0.1
	Benzo().)fluoranthene	0.01
	Chrysene	0.01
	Dibenz(a li)anthracene	1
	Indeno(1/2,3-ed)pytene	0.1
. I I I A I I A I A	and call of a second construction of the	 a such al the esta specific CUG

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excanation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset.

11 compound was not detected

1 = the reported value is an estimated concentration

1.1 = the compound was not detected, the associated reporting limit, s approximate

R - the avalytical result was rejected during data validation

4. Structures and the discussion of the presence opport the discussion of the presence of the discussion of the presence of the discussion of the presence of the discussion of the discussio

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SITE LOCATION GRID ID LOCATION ID MATRIN SAMPLE ID TOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CUDE STUDY ID						Number		SEAD-16 E4 16EXPR-E4-01 06EXPR-E4-01 02 7/19/2007 SA RA	SEAD-16 E5 16EXFL-E5-01 SOIL 16EXFL-E5-01 0 2 7/19/2007 SA RA	SEAD-16 E5 (6EXSW-E5-01 0.5 1.5 7/19/2007 SA RA	SEAD-16 E5 16EXSW-E5-02 SOIL 16EXSW-E5-02 0.5 1 5 7/19/2007 SA RA	SEAD-16 E8 16EXSW-E5-03 SOIL 16EXSW-E3-03 0.5 1.5 7/19/2007 SA RA	SEAD-16 E5 16ENSW-85-04 SOIL 16EXSW-85-04 n 5 1.5 7/19/2007 SA RA	SEAD-16 E6 16EXFL-E6-01 0 0.2 7/19/2007 SA RA
					Number of	of Times	Number of							
Parameter	Units	Value	of Detection	Coal	Exceedances	Detected	Analyzes	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs Benzo(a)authracene Benzo(a)ay rene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysche Dibenz(a,h)anthracene Induno(1,2,3-ed)pyrene BAP Toxicity Equivalence ⁴ Metals Antimony Arsenic	UG/KG UG/KG UG/KG UG/KG UG/KG MG/KG MG/KG	2400 5800 7500 52.5.3 2300 1600 6000 9.01 230 11.2	75% 50% 25% 50% 50% 25% 50% 100% 81%	10 41 21 5	0 13 10 10 10 10 10 11 10	3 2 3 1 2 1 2 4 67 83	82 82 1 1 1 1 1 1 1 1 1 1 1	7.9 J 4 S J	2.8 J 4 7 J	18.2 8.9	5,6 J 5,3	31J 55	}4,6 J 7 I	3.7 J 5 J
Cadmum	MG/KG	57	100%	60	0	82	82	0,19.1	0.13 1	0.54	0,23	0.23 1	0.39	0.17 J
Copper	MG·KG	2390	100%	10000	0	82	82	59.8	47.2	125 J	47 1	53.8 J	75 1	28.6
Lead	MG/KG	6410	100%	1250	4	83	8.3	233.1	53.8 J	449 J	234 J	64.6 J	281 J	6133
Mereury	MG/KG	4.9	100%	5.7	0	82	8.2	0.315	0.148	1.5	0.122	0,149	0,987	0.041
Thallum Zinc	MG/KG MG/KG	1 385 [°] 711	4% 100%	6-7 10000	() ()	3 82	83 82	108 1 0 85 ft1	0.71 UJ 62 J	0,78 U 146	0,72 U 87.9	078 U 81.7	0,70 U 118	0.78 UJ 71 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(*) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit

with the method detection hmit for non-detect results and taking non-detect values at half value. The testerity enumerican factors (TEE) for the NYSDEC BTE endedlines were as follow: The toxicity equivalent fac follow

uivalent factors (TEF) for the NY SDE	C Bit guidelines were as follo
cPAHs	NYSDEC TEF
Benzo(a)anthracene	0 [
Benzo(a)pyrone	1
Benzo(b)thuoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibonz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U + compound was not detected

J = the reported value is an estimated concentration

UP the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

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STEELO-ALION GRID (D LOCALION ID MATRIX NAMPLE ID LOP OF SAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STUDY ID						Number		SE VD-16 E8 16ENFL-FR-01 SOIL 16ENFL-FR-01 0 0 2 7,10/2007 SA RA	SFAD-16 E9 16ENFL-E6-01 50L 16ENFL-E6-01 0 2 7/19/2007 SA RA	SFAD-10 E9 I0ENPR-E9-01 SOIL I0ENPR-E9-01 0 2 4/34/2607 SA RA	SEAD-16 E12 16ENFL-F12-01 10TCH SOL 16ENFL-E12-01 0 0.2 7.719/2007 SA RA	SEAD-16 E13 15EXF1-E13-01 DITCH SOIL 16ENF1-E13-01 0 2 7-19.2007 SA RA	SFAD-16 E13 16FXPR-F13401 DITCH SOL 16EXPR-F13401 0 2 4.4 2007 SA RA	SEAD-10 F3 16EXFL-F3-01 SOIL 10EXFL-F3-02 0 0.2 7.1922007 DU RA
			Frequency		Number of	of Times	Number of		141.00	V-h (D)	Value (Q)	Value (O)	Value (Q)	Value (Q)
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes	Value (Q)	Value (Q)	Value (Q)	Value (Q)	value (Q)	Value TQ1	Value (Q)
Carcinogenic PAHs														
Benzy(a)anthracene	LGKG	24(8)	~ < "		()	2	4							
Benzo(alpsilenc	t G KG	5800	511" /		0	2	-							
Benzo(b)fluoranthene	UĞ KG	7500	75" .		(1	.*	-1							
Benzo(E)fluoranthene	UG KG	<2 < '	25" -		0	1	4							
t firs sene	1 G KG	2300	51100		()	2	4							
Dibenz(a h)anthiaeene	LG KG	[rsf)(1	25%		()	I	4							
Indeno(1.2.3-ed)pyrene	UG KG	NBRI	50″ n		0	2	-4							
BAP Insight Equivalence"	MGIKG	-2.01	160%	10	0	4	-4							
Metals														
Vatamany	MGKG	250	\$100	-11	4	67	83	0 77 J	3.6.1	0.65 UI	6 ń J	0.66 UJ	323	111
Andres	MGIKG	11.2	100°a	21.5	()	83	68	313	3 2 J	4.2	3.9.1	49]	78	311
Cadimum	MG KG	5 7	1.00%	69	0	8.2	8.2	0 14 J	0 I I J	0.38	6 23 J	0.07 J	1	011
Copper	MGIKG	2300	100%	10000	11	82	82	14.4.1	316.1	14-1	48 4 J	20.1 J	50,6 J	14.1.3
Lod	MG KG	0410	100 %	1250	4	83	83	73.	112 J	70.3	461 J	[86]	[87]	38.6.1
Meresov	MG KG	; 1)	1.000	37	0	82	82	0.043	0.471	0.01.1	0.097	0.021 J	0.042	0 134 1
Thalliner	MG KG	1:85	400	67	0	3	8.3	0.75 UJ	079 UJ	0.8 U	0.81 UJ	0 % UJ	0.82 J	0 87 UJ
Zanc	MG KG		}00° a	10056	0	82	8.2	33 7 J	46.2 1	36.2.1	59.4 J	52.9 J	141	58 2 J

Notes

(1) The eleanup goal values are trota Table 2-1 of SEAD-15-17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

(5) The maximum detected concentration was obtained from the average of the sample and its diplicate.

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsitiating the detection limit

with the multiple detection firms for non-detect results and taking non-detect values at half value. The toxicity equivalent factors (TEP) for the NY SDEC BTF guidelines were as follow

int factors (TEF) for the NY SDEC B	TE gardelines were a
2PAHs	NYSDEC TEP
Benzour Janifizacine	0.1
Benzon, pyrene	t
Beuzo(b)fluoranthene	13 [
Benzo(k)fluoranthene	0.01
Clinistrie	0.01
Dibona(a h)anthracene	1
Indeper(1.2, Seed)pyrene	0.1

(S) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(rs) A shaded, hoved sample indicates that the soil represented by the sample has been removed from the site as

part of the executation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

17 compound was not detected

I - the reported value is an estimated concentration

191 the compound was not detected, the associated reporting limit is approximate

R - the analytical result was rejected during data validation

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NTE I OCATION GRID ID LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE BOTIOM OF SAMPLE SAMPLE DATE QC CODF STUDY ID						Number		SEAD-16 F3 16EXFL-F3-01 SOIL 16EXFL-F3-01 0 0.2 7/19/2007 SA RA	SEAD-16 F3 16EXPR-F3-01 SOIL 16EXPR-F3-02 0 0.2 4/4/2007 DU RA	SEAD-16 F3 16EXPR-F3-01 SOIL 16EXPR-F3-01 0 0.2 4/4/2007 SA RA	SEAD-16 F4 16EXFL-F4-01 SOIL 16EXFL-F4-01 0 0.2 7/19/2007 SA RA	SEAD-16 F8 16EXPR-F8-01 SOIL 16EXPR-F8-01 0 0.2 4/4/2007 SA RA	SEAD-16 F9 16EXFL-F9-01 SOIL 16EXFL-F9-02 0 0.2 x/2/2007 DU RA	SEAD-16 F9 16EXFL-F9-01 SOIL 16EXFL-F9-01 0 2 8/2/2007 SA RA
		Maximum	Frequency	Cleanup	Number of	of Times	Number of							
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenie P.A.Hs Benzo(a)anthracene Benzo(a)thveraithena Benzo(b)fluoranthena Benzo(b)fluoranthena Christene Dibenz(a,b)anthracene Indeno(1,2,3-cd)pyrche	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG MG/KG	2400 5800 7500 52.5 ⁻³ 2300 1600 6000 9.01	75% 40% 75% 24% 50% 25% 50%			3 2 3 1 2 1 2	-1 -2 -2 -4 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2							
BAP Foxicity Equivalence" Aftends Antimony Arsenic Corper Lead Mercury Thallium Zinc	MG/KG MG/KG MG/KG MG/KG MG/KG MG/KG MG/KG	230 11 2 5.7 2390 6410 4.9 1 385 ³ 711	81% 100% 100% 100% 100% 100% 40%	10 41 21.5 60 10000 1250 5.7 6.7 10000	0 4 0 0 4 0 0 0 0	4 67 83 82 82 83 82 83 82 82	4 83 82 82 83 82 83 82 83 82 83	1.2.3 4.1.3 0.26.3 13.4.3 43.3.3 0.088.3 0.88.3 0.82.03 57.5.3	3 2 J 4 6 0.4 68,9 498 J 0.035 0.73 U 74,6 J	3.2 J 4.9 0.52 73 8 170 J 0.023 0.78 U 91.9 J	7.7 J 2.5 J 0.21 J 59.9 J 247 J 0.051 0.74 UJ 49 J	2.6 J 5.7 0.28 29 7 205 0 022 0.65 U 36 8 J	0.61 UJ 4.8 0.33 12.2 10 1 0.025 0.74 U 40.8	0.63 UJ 6,4 15,3 13,5 0,031 2,4 J 47,5

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value.

optime monie	a derection materior mon-derect results an	a taking non-neneral conces in non-
The toxicity c	quivalent factors (TEF) for the NYSDEC	BTE guidelines were as follow
	cPAHs	NYSDEC TEF
	Benze(a)anthiacene	a (
	Benzo(a)pyrene	1
	Benzo(b)fluoranthene	0.1
	Benzo(k)(huoranthene	0.01
	Chrysene	0.01
	Dibenz(a,h)anthracene	I
	ludeno(1.2,3-od)pyrene	0.1

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(b) A shaded based sample indicates that the soil represented by the sample has been removed from the site as part of the exeavation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

R - the analytical result was rejected during data validation

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Table E-1

SEAD-16 Complete Confirmatory Soil Sample Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SITE LOCATION								SEAD-16	STATISENDER ANTIN	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								F9	There's to a	F9	G2	G3	G3	G3
LOCATION ID								16EXPR-F9-01	TOBXPR-F9-02	16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02
MATRIX								SOIL	SOL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-F9-01	ISEXPB-F9-02	16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02
TOP OF SAMPLE								0	14 · · · · · · · · · · · · · · · · · · ·	0	0	0	0	0
BOTTOM OF SAMPLE								() 2	······································	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	137、 7月11月007 1986	8/2/2007	4/4/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	1. 加快学校资格性。	SA	SA	SA	SA	SA
STUDY ID								RA	A CONTRACTOR	RA	RA	RA	RA	RA
						Number			PLUMPE ZAR PLUE					
		Maximum	Frequency	Cleanup	Number of	of Times	Number of		and the second s					
Parameter	Units	Value	of Detection	Goal	Exceedances	Detected	Analyzes 2	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs							100		医动物 无利的利利					
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4		·····································					
Benzo(a)pyrene	UG/KG	58(1)()	50%		0	2	4		州山市, 神殿了了 新					
Benzo(b)fluorantheac	UG/KG	7500	75%		0	3	4		and the state of the					
Benzo(k)fluoranthene	UG/KG	52.5 1	25%		0	1	4							
Chrysene	UG/KG	2,300	50%		0	2	4		A TRUE A LAND TO					
Dibenz(a,h)anthracene	UG/KG	1600	2.5%		0	I.	4		The state of the second					
Indenn(1.2.3-cd)pyrene	UG/KG	6000	50%		0	2	4		The second s					
BAP Tryicity Equivalence	MG/KG	901	100%	10	0	4	4		Selling States					
Metals									一一 他, 生生生生					
Antimony	MG/KG	230	81%	41	-	67	83	5 J	10 相关的18.5 1 年	0.59 UJ	0.56 UJ	4.9 J	3.1 1	0.59 UJ
Arsenic	MG/KG	11.2	100%	21.5	0	8,3	83	.5	1 4 2 1 2 2 4 6 1 1	3.9	22	3.7 3	151	311
Cadmium	MG/KG	57	100%	60	0	82	82	0,85	0.28 J	0.29	0.33	0 23 J	0.25	0.1 1
Copper	MG/KG	2390	100%	0000	0	82	82	172	10.1. 46.9	10	953	46.5 J	36.4 1	17
Lead	MG/KG	6410	100%	1250	4	83	83	643	STAR MALLS	83	1241	166 J	285 1	11.4 3
Mercury	MGKG	19	100%	57	0	82	82	0.021	Citra AF ALL	0.03	0 102	0 147	0 147	0.01 J
Thallum	MG/KG	1.385	+**	67	0	3	8,3	0,7 U	0.67 UI	0,72 U	0 68 11	0.83 UJ	071 U	0 72 UJ
Zine	MG/KG	711	100%	10000	0	82	82	144 3	一行、中部委員8日至-	33 3	24	9123	45	40 1

Noics

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Towery Equivalence value was calculated by substituting the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value.

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

alent faciors (LEP) for the INT SOE	C BIE guidennes were as to
cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	01
Benzo(k)fluoranthene	0,01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-ed)pyrene	0.1
ad united sectors a second sector the	at averaged the erre consults

(5) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

U = compound was not detected

I - the reported value is an estimated concentration

[J] = the compound was not detected; the associated reporting limit is approximate

R = the analytical result was rejected during data validation

P PT Projects Senses PRC II SEAD-16_17 Construction Completion Report Drait Final Appendices Appendix E - Complete Analytical results Table D-15-16_complete_confirm_ast_data.xts

SITE LOCATION								SEAD-16						
GRID ID								G4	G5	G5	G.5	G5	G5	H3
LOCATION ID								16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-01	16EXPR-G5-01	16EXPR-G5-03	16EXPR-G5-03	16EXFL-H3-01
MATRIX								SOIL						
SAMPLE ID								16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-02	16EXPR-G5-01	16EXPR-G5-04	16EXPR-G5-03	16EXFL-H3-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0:2	0.2	0.2	0.2	02	0.2
SAMPLE DATE								4/4/2007	7/18/2007	4/4/2007	4/4/2007	7/20/2007	7/20/2007	7/19/2007
C CODE								SA	SA	DU	SA	DU	SA	SA
STUDY ID								RA						
						Number								
		Maximum	Frequency	Cleanup	Number of	of Times	Number of							
Parameter	Units	Value	of Detection	Geal	Exceedances	Detected	Analyzes ²	Value (Q)	Value (Q					
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4	2400 J	1900 LI	160 J	180 J	1400 J	1600 J	
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4	5800	1900 U	230 J	250 J	19000 U	20000 U	
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4	7500 3	1900 U	170 J	450 1	1100 1	1300 J	
Benzo(k)fluoranthene	UG/KG	52.5 3	25%		0	E	4	3600 UJ	1900 U	95 J	6600 UJ	19000 U	20000 U	
C'hry sene	UG/KG	2300	50%		0	2	4	2300 J	1900 U	4600 U	210 1	19000 U	20000 U	
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4 .	1600 J	1900 U	4600 U	6600 U	19000 U	20000 U	
indeno(1.2.3-cd)pyrenc	UG/KG	6000	50%		0	2	4	6000	1900 U	190 J	220 J	19000 U	20000 U	
BAP Toxicity Equivalence	MG/KG	9.01	100%	10	0	4	4	0.01	0.04	0,29	0.35	0.28	0.32	
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	5 J	1.6 J	0,77 UJ	18J	20.6 J	19.1 J	2.3 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	4 8	5.7 J	3.3	6.5	5.8 J	4.6 J	6.6 J
admium	MG/KG	57	100%	60	0	82	82	0.52	0.28 J	1,4 J	2.7 3	3.2 J	3.5 J	0.32 J
opper	MG/KG	2390	10/1%	1 (10)(16)	()	\$2	82	72 7 J	33	27.9	39.1	268 J	230 J	55 3
Lead	MG/KG	6410	100%	1250	4	83	83	302 J	86.1 J	N8.6 J	132 J	958 J	930 J	87.5 J
viereury	MG/KG	4.9	100%	57	0	82	82	0 263	0.036	0.02 3	0.069	0 137	0.121	0,009 3
Thallium	MG/KG	1 385 3	4%	67	0	3	83	0.7 4	0.78 UJ	0.94 U	1.3 U	0.75 UJ	0.8 UJ	0.71 U
Zinc	MG/KG	711	100%	10000	0	82	82	109	84.8 J	186 J	377 5	275 J	298 J	88 J

Notes.

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Remoting the starting of the starting o

ant factors (TEF) for the NYSDEC	
cP A Hs	NYSDEC TEF
Benzo(a)anthracone	01
Benzo(a)py rene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1

Indeno(1,2,3-cd)pyrene (5) A holded and outlined cell indicates a concontration that exceeded the site-specific CUGs.

(6) A shaded, based sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

R = the analytical result was rejected during data validation

P PT Projects Seneca PBC II/SEAD-16_17 Construction Completion Report Draft Final Appendices: Appendix E - Complete Analytical results Table D-18-16_complete_confirm_cail_data xia

0.1

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STELOCATION GRID ID LOCATION ID MATRIN NAMPLE ID LOP OF NAMPLE BOTTOM OF SAMPLE SAMPLE DATE QC CODE STEDY ID		Management	Frequency	()=====	Number of	Number of Times		SEAD-16 H3 1-ENPR-13-01 SOIL 16ENPR-13-01 0-2 4-4-2007 SA RA	SEAD-16 H3 IoEXPR-I3-02 SOL 16ENPR-I3-02 0 2 4/4 2007 SA RA	SFAD-16 12 16EXPR-12-01 SOII 16EXPR-12-01 6 2 7-20-2007 SA RA	SEAD-16 13 16FNPR-13-01 SOIL 16ENPR-13-01 6-2 4-4-2007 SA RA	SEAD-16 13 16ENPR-15-02 SOIL 16ENPR-15-02 0 2 4-4.2007 SA RA	SEAD-(6 J] (AENTL-J1-0) DIT(H SOIL (6ENTL-11-0) 0 2 7 (19/2007 SA RA	SEAD-16 K1 16ENFL-K1-01 DITCH SOLL 16ENFL-K1-01 6 2 7. (9/2007 \$A RA
Parameter	Units	Value	of Detection	Goal ¹	Exceedances	Detected	Analyzes 2	Value (O)	Value (Q)	Value (Q)	Value (O)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs	1 mis	valoe	or iseretion	Cross	GATTEGATICES	DUITING		1000107						
Benzh(a)anthranene	LGKG	2400	15° a		0	;	L							
Benziefalpsiene	LGIKG	5 \$ (1)	£ (1 ⁴⁴ 11		0	2	4							
Benzothallu manthene	1.G.KG	"500	7824		0	5	4							
Bung (k)theorantheau	LGKG	1.5			()	i	4							
Chrysene	LGKG	23.00	51200		d	2	4							
Dibenzia hlanthracene	LGKG	1500	25%		11	1	4							
Indepo(1/2/3-ed)pyrene	UGIKG	6000	5020		0	2	-4							
BAP Toxical Equivalence"	MG KG	1.01	$] C 0^{m}$	10	0	4	٦							
Metals	NY: 117	230	\$120	41			83	771	15.8.1	121	1.001	113	231	121
Antonions	MG KG		100°a	21 4	-	S.	85	53	55	3.0	5.1	47	561	423
Aikentz Cadu (a.v.	MG KG MG KG		100%	60	0	82	82	2.5	57	0.24.3	4 7	19	0.21.1	0.21.1
	MG KG		100° a	10000	0	82	\$2	209.1	362.1	20.3.1	2390 J	223 1	3151	3111
Coppur Laad	MG KG	-	150°a	1250	1	83	83	822 J	1010.1	497 J	765 J	533 J	57 5 J	36.3.1
Mercury	MG-KG		100%	5.7	0	82	82	0.169	0.14	0.045	0.153	0.061	0.019.1	0.065
				6.7	0	3	83	0.99 13	0,79 U	0.82 (°	0 87 U	0.71 ()	0.84 UI	0.79 11
Exallsem	MG KG		4" a 1	10060	0	82	82	211	398	53	512	711	48.2 J	66 2 1
Zinc	MG KG	711	c() ^a a	10000	0	82	6.2	211	0,00			/11	40.2 3	

Notes

(1) The eleanup goal values are from Table 2-, of SLAD-15-17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate (4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsititing the detection limit

with the method detection limit for non-detect results and taking non-detect values at half value

The toxicity equivaas follow

ivatent factors (TEF) for the NYSDEC BT	El guidelines were as
2PAHs	NYSDEC TEF
Benzoic Janthineene	0.1
Banzota) ov rene	1
Benzorbifluoranthene	0.1
Benzoff,)fluoranthene	0.01
Christope	0.01
Dibenz(a hianthraceae	1
Indene(1/2/3+ed)pyrene	1.0
and the second sec	and the second second

(5) A Folded and ontoned cell indicates a concentration that exceeded the site-specific CUGs

(b) A shalled boxed is mple indicates that the soil represented by the sample has been removed from the site as

part of the excavation. Therefore, the analytical results for the shader, sample are not characteristic of

current site conditions and are not part of the final dataset.

11 compound was not detected

1 the reported value is in estimated concuntration

171 - the compound was not detected, the associated reporting limit is approximate.

R - the analytical result was rejected during data validation.

• 12 20 recession and the 189 AD4 (21) operations (complete disperible) and Appendices Appendix (2) - Complete Analytical results (able D-18-16) complete continuit and Appendix (2) - Complete Analytical results (able D-18-16) complete continuit and Appendix (2) - Complete Analytical results (able D-18-16) complete continuit and Appendix (2) - Complete Analytical results (able D-18-16) complete continuit and Appendix (2) - Complete Analytical results (2) - Complete Analytical

SITE LOCAT	ION							SEAD-17						
GRID ID								A3	A3	A4	A4	A4	A.5	A.5
LOCATION I	D							17ENPR-A3-01	17ENPR-A3-02	17ENFL-A4-01	[7EXFL-A4-02	(7EXPR-A4-03	17EXFL-A5-01	17EXPR-A5-01
MATRIX								SOIL						
SAMPLE ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03	17EXFL-A5-01	17EXPR-A5-01
TOP OF SAM	PLE							0	0	0	0	0	0	0
BOTTOM OF								0.2	0.2	0 2	0 2	0 2	0.2	0.2
SAMPLE DA								5/3/2007	5/3/2007	7/13/2007	7/18/2007	7/13/2007	7/13/2007	4/4/2007
OC. CODE								SA	SA	SA	SΛ	SA	SA	SA
STUDY ID								RA						
		Maximum	Frequency	Cleanup	Number of	Number of	Number of							
Parameter	Units	Value	of Detection	Goal	Exceedances	Times Detected	Analyzes ²	Value (Q)						
Metals														
Antimony	MGKG	34.6	71%	41	0	48	68	25.1 UJ	27 8 UJ	0.6 U	0.66 UJ	13 2 J	3.9 J	10.5.3
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	4.9	5.7	5.3	5.3 J	4.9	6.3	5.2
Cadmuon	MG/KG	162	81%	60	0	55	68	3 2 J	50 J	0.04 U	0.15 J	3 2	0.47	3.6 3
Copper	MG/KG	402	100%	10000	0	68	68	74.5	92.8	11.1	11.6 J	72 7	28	94.8 J
Lead	MG/KG		100%	1250	2	u 8	68	736	1020	12.6	21.5 J	751	205	1050 J
Mercury	MGKG		97%	5.7	0	66	68	0.073	0 073	0.019 J	0.04	0 077	0.038	0.084
Thalloom	MG/KG		0%6	6.7	0	0	68	1 I U	12 U	0.73 U	0.8 UJ	0.78 U	073 U	1.1 U
Zinc	MG/KG		100%	10000	a	68	68	314	493	51.5	45.3 1	289	112	343 J

Notes

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

(3) Λ bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(4) A shaded, haved sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

C = compound was not detected

J = the reported value is an estimated concentration

UI = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

PMP Dymecrosseneca PBC HEMEAD-16-17a/mstructor: Completion Report/Duart Linal/Appendix ex-Appendix E - Complete Audotical residus/Table D-2-8++7, complete_continu_soil_data xls

SITE LOCAT	ION:							SFAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRIDID	(),/.*							.47	B3	B4	B5	Bo	B7	B7
LOCATION 1	D							17EXPR-A7-01	17EXFL-B3-01	17EXFL-84-01	17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-01	17EXFL-B7-01
	0							SOIL	SOL	SOIL	SOIL	SOIL	SOIL	SOIL
MATRIX										17EXFL-B1-01	17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-02	17EXFL-B7-01
SAMPLE ID								17ENPR- A7-01	17EXFL-B3-01					
TOP OF SAM	PLE							ດ	0	0	0	0	0	0
BOTTOM OF	SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DA	TF							\$-3-2007	7/13/2007	7/13/2007	7/13 2007	7/17/2007	7/17/2007	7:17/2007
OC CODE								SA	SA	SΛ	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	R.A	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of							
Parameter	Units	Value	of Detection	Goal	Exceedances	Times Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antornorn	MGKG	54.0	7120	41	C	48	08	21.4 UJ	23 J	0.66 J	0 64 J	21 I J	0.58 UJ	0.58 UU
Arsenia	MGKG	12.3	102%	21.5	2	'18	68	19	47	4.3	4 4	5 J	711	64 I
Cadaman	MGKG	16.2	S1° a	60	0	55	68	171	0.04 U	0.04 U	0.05 U	351	071 J	0 26 J
Copper	MGKG	102	100%	10000	0	68	68	49 6	20.2	13 3	172	136 J	:221	1131
I ead	ARG K.G	1910	E00.14	1250	2	08	08	304	25.8	195	29 1	1120 J	3171	30 7 J
Mercury	MGKG	0.094	0700	5.7	0	66	68	0.067	0.051	0 038	0.051	0.075	0 037	0.041
Loallium	MG/KG		;;)° ,	n 7	ð	0	68	(104 U	074 U	074 U	ñ 77 (i	0 67 UJ	0 71 L'J	0.71 UT
Zins	MGKG		10034	10000	d	08	68	145	62.9	54.9	76 7	418 J	73 5 J	58 4 J

Notes

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-1517 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

(3) A holded and onlined cell indicates a concentration that exceeded the site-specific CUGs

(4) A shaded, loxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of

current site conditions and are not part of the final dataset

11 compound was not detected

E - the reported value is an estimated concentration

UI - the compound was not detected, the associated reporting hurit is approximate

R = the analytical result was rejected during data validation

SITE LOCAT	TON:							SEAD-17						
	ION .							B7	B8	C3	C3	C4	C5	C6
GRID ID								2 ·						
LOCATION I	D							17EXPR-87-02	17ENPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01	17EXFL-C6-01
MATRIN								SOIL	SOIL	SOIL.	SOIL	SOIL	SOIL	SOIL
SAMPLF ID								17EXPR-87-02	17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01	17EXFL-C6-01
TOP OF SAM	IPLE							0	0	0	0	0	0	0
BOTTOM OF	SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DA	TE							5/3/2007	4/4/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007	7/17/2007
OC CODE								SA	SA	SA	SA	S.A	SA	SA
STUDY ID								RA	R.A	RA	RA	RA	RA	KA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of							
Parameter	Units	Value	of Detection	Goal	Exceedances	Times Detected	Analyzes ²	Value (Q)						
Metals														
Araumouy	MGrKG	34 6	71%6	41	0	48	65	21 2 UJ	2.4 J	13.9 J	24.3 UJ	0.64 U	0.62 UJ	0.63 UJ
Arsenic	MG/KG	12.3	100%	21.5	0	ċS	68	4.7	4 2	8.2	4.4	6	5.3	4.4 3
Cadmum	MG/KG	16.2	81%5	60	0	55	68	16J	0.97 J	16.2	6.1	0.05 U	0.05 U	0 0 7 J
Copper	MG/KG	402	100%%	10000	0	68	68	121	45.5 J	118	158	15.6	11.9	8.8 J
Lead	MG/KG		100%	1250	2	68	68	717	208 J	909 J	1040	25.1	16.2	125 J
Mercury	MGKG		97%	5.7	0	66	68	0.043 J	0.045	0.046	0.047 J	0.07	0.047	0.03
Thallum	MG/KG		0%	6.7	0	0	68	0.93 U	0.88 U	0 87 U	11.U	0.78 U	0.76 U	0 77 UJ
Zinc	MG/KG	034	100%	10000	ő	68	08	259	74.8 J	227 J	493	78.5	57.6 J	395 J

Notes.

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table.

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected

I = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

PMTTH opecies/Seneca 198C IDSEAD-10_179Construction Completion RepenDratt Final/Appendices/Appendix E - Complete Analytical results/Table D-2 S-17_complete_confirm_soil_data xis

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Table E-2 SEAD-17 Complete Confirmatory Soil Sample Results Construction Completion Report for SEAD-16 and SEAD-17 Sencea Army Depot Activity

SITE LOCAT	ION							SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEADLET DON'S	SBAD-17
GRID ID								C7	C7	C8	C8	D2	DE TO	D2
LOCATION	D							17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-01	17EXFL-D2-01	TEXPR DZ-OL	EXPR-D2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOL
SAMPLE ID								17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-02	17EXFL-D2-01	17EXPR-D2-0100000 10	EXPR-D2-02
TOP OF SAM	PLE							0	0	0	0	0		0
BOTTOM OF	SAMPLE							0.2	0,2	0.2	0 2	0,2	L' A BARRET	0.2
SAMPLE DA	TE							7/13/2007	4/4/2007	7/13/2007	7/18/2007	8/2/2007	4/13/2007	7118/2007
QC CODE								SA	SA	SA	SA	SA	SAMA	Mar Marsh
STUDY ID								RA	RA	RA	RA	RA	RA	RA
		Maximum	Frequency	Cleannp	Number of	Number of	Number of						There are a superior and	the the light of the
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Times Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Qr	(O) solev
Metals									and in the second s	and the second s		to de	and the she water a first the state	States and the second second
Antimony	MG/KG	34 6	71%	41	0	48	68	5.6 J	1183	63 J	4.3 J	0,73 J	二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十	1 . 21 L's
Arsenic	MGKG	123	100%	21.5	0	68	68	4.7	7.9	4.6	28 J	39	1 1.2.4(0)法主 ::	123-14
Cadnuum	MG/KG	16.2	81%	60	0	55	68	0.64	3.1 J	1	1.2 J	0.57	·	10:20 P.
Copper	MG/KG	402	100%	10000	0	68	68	48 8	149 J	48.3	25 J	15.6	[133]昭德]	stuffer 327 3. 7
Lead	MG/KG	1910	100%	1250	2	68	68	190	912 J	367	239 J	32.8	760	42. 1240 Jun
Mercury	MG/KG	0 094	97%	57	0	66	68	0.058	0.057	0.045	0 041	0.062	with Higo.024 seed in	0.039
Thallum	MG/KG	0	0%	67	0	D	68	0.77 U	1.1 U	0.73 U	0.81 UJ	0.74 U	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	0.83-10
Zinc	MG/KG	634	100%	100001	0	68	68	93.8 J	210 J	150	93 3 J	58,6	1 1395 SAW	The states and the states

Notes

(1) The cleanup gozi (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

in this table

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excevation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation.

P WTTP/myccist/scncca PBC INSEAD-16_17Construction Completion Report/Frat Final/Appendices/Appendix E - Complete Analytical results/Table D-2 5-17_consplete_continu_sail_data.xla

SITE LOCAT	ION							SEAD-17						
GRID ID								D2	D3	D4	D5	D6	D6	D7
LOCATION	D							17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01	17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01
MATRIX								SOIL						
SAMPLE ID								17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01	17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01
TOP OF SAM	IPLE							0	0	0	0	0	0	0
BOTTOM OF	SAMPLE							0.2	0.2	02	0.2	0,2	0.2	0 2
SAMPLE DA	TE							8/2/2007	7/13/2007	7/13/2007	7/17/2007	7/17/2007	8/2/2007	7/13/2007
QC CODE								SA						
STUDY ID								RA						
		Maximum	Frequency	Cleanup	Number of	Number of	Number of							
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Times Detected	Analyzes ²	Value (Q)						
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	1.8 J	0.82 J	2.9 J	0.68 1	0.61 UJ	0.55 UJ	6,9 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	4.3	5.3	5	3.3 J	3.7 J	2,1	4
Cadmum	MG/KG	16.2	81%	60	0	5.5	68	0.69	0.05 U	0.62	0.22 J	0.28 J	0 24	0.38
Copper	MG/KG	402	100%	10000	O	68	68	22.7	177	83 9	184 1	12 J	104	88 5
Lead	MG/KG	1010	100%	1250	2	68	68	92.2	16.6	217	77.4 J	30.3 5	4.8	332
Morcury	MG/KG	0.094	97%	5.7	0	66	68	0.059	0 074	0.006 U	0.024	0.054	0.005 U	0.026
Thallum	MG/KG	0	0%	67	0	0	68	07 U	0 76 U	0.73 U	0.74 UJ	0 75 UJ	0 67 U	0.69 U
	MG/KG	634	100%	10000	0	68	68	678	54.8 J	348	58,4 J	46.6 J	373	72.6 J

Notes

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

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UJ = the compound was not detected, the associated reporting limit is approximate

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P 1011/11/micros/Seneca PBC 105/2A1>-16_175/ bustraction Completion Report/Draft Final/Appendices/Appendix E - Complete Analytical results/Table D-2 8-17_complete_continu_soil_data.xts

													and the second se	
SITE LOCAT	ON							SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	- SEAD-17 1:	SEAD-17
GRID ID								D7	D8	D8	E2	E3	· · · · · · · · · · · · · · · · · · ·	E5
LOCATION	D							17EXPR-D7-02	17EXFL-D8-01	17EXPR-D8-01	17EXFL-E2-01	17EXFL-E3-01	TZEXEL-ES-01	17EXFL-ES-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL SOIL	SOIL
SAMPLE ID								17EXPR-D7-02	17EXFL-D8-01	17EXPR-DS-01	17EXFL-E2-01	17EXFL-E3-01	TTEXFL-ES-OF	17EXFL-E5-02
TOP OF SAM	PIE							0	0	0	0	0	AND THE DESTRUCTION OF THE REAL	0
BOTTOM OF								02	0.2	0 2	0.2	0 2	and and a second second second	0 2
SAMPLE DA								4/4/2007	7/13/2007	4/4/2007	7/13/2007	7/13/2007	C	7/30/2007
OC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of						1 11 Benerous	
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Times Detected	Analyzes 2	Value (Q)	Value (Q)					
Metals													2.11	
Antimony	MG/KG	34.6	71%	41	0	48	68	6 J	0.64 UJ	6,5 J	4 S J	3.9 J	1 11 34 A J ?!	0.65 UJ
Arsenic	MG/KG	123	100%	21.5	0	68	68	5.4	4.5	51	4	3,9	142 1	4.5
Cadmium	MG/KG	16.2	\$1%	60	0	55	68	2.4	0.05 U	2	0.04 U	0.04 U	1261	0.26
Copper	MG/KG		100%	10000	0	68	68	72 8	12	912	33 6	33	11: 1402 J.	11
Lead	MG/KG		100%	1250	2	68	68	528 J	15.3	542 J	164	172	-12" · · · · · 1910 J	14.8 3
Mercury	MGKG		97%	5.7	0	66	68	0 048	0,045	0.063	0 041	0 086	C	0.056 J
Thallium	MG/KG		0%	6.7	D	0	68	1.1 U	0.79 U	0.95 U	0.69 U	0 73 11	-2 0 74 UI	0.79 U
								199 3	49.3 J	169 J	89 I J	108 J	·	58 J

Notes

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented

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(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

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SITE LOCAT	ION							SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								EG	E7	E8	E8	R2	F2	F2
LOCATION	D							17EXFL-E6-01	17EXFL-E7-01	17EXFL-E8-01	17EXPR-E8-01	17EXFL-F2-01	17EXFL-F2-01	17EXPR-F2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-EG-01	17EXFL-E7-01	17EXFL-E8-01	17EXPR-E8-01	17EXFL-F2-01	17EXFL-F2-02	17EXPR-F2-01
TOP OF SAM	PLE							0	0	0	0	0	0	0
BOTTOM OF	SAMPLE							0 2	02	02	02	0.2	02	0 2
SAMPLE DA	TE							7/37/2007	7/13/2007	7/13/2007	4/4/2007	7/13/2007	7/30/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of					and the second		
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Times Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)				
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	13.8 J	1.2 J	0.92 J	11 J	34.6 J	0 62 UJ	1.3 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	3.9 1	4.6	37	4.9	6.3	4.2	6.1
Cadmium	MG/KG	162	81%	60	0	55	68	53 J	0 06 J	0.07 J	4.1	40.50	0173	0 41
Copper	MG/KG	402	100%	10000	0	68	68	87 J	12.5	142	93 7	217	13 7	31
Lead	MG/KG	1910	100%	1250	2	68	68	374 J	44.7	50 2	937 J	1500	13.5 J	97.1 J
Mercury	MG/KG	0.094	97%	5,7	0	66	68	0.093	0.046	0.038	0.048	0.022	0.066 J	0.05
Thallium	MG/KG	0	0%	6.7	0	0	68	0.77 UJ	0.72 U	0.68 U	0 98 U	0,68 U	0 76 U	0.99 U
Zinc	MGKG	634	100%	10000	Ô	68	68	170 J	52.2 J	53 5 J	258 J	243 (M. 1834) 20	5751	95.2 J

Notes:

(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

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R = the analytical result was rejected during data validation.

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SITELOUVE	ION							SFAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								F3	F4	F5	E.S.	F6	FG	Fo
LOCATION	D							1"EXFL-F3-01	17EXFL-F4-01	17EXFL-F5-01	7ENPR-F5-01	17ENFL-F6-01	17EXPR-Fb-01	17ENPR-F6-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
S AMPLE ID								17EXFL-F3-01	171-XFL+F4+01	17ENFL-F5-01	L7EXPR-FS-01	17EXFL-Fo-01	17EXPR-F6-02	17EXPR-F6-01
LOP OF SAM	101.6							0	0	0	0	0	0	0
BOTTOMOR								0.2	0.2	0.2	0.2	0.2	0.2	0.2
S AMPLE DA								7 14 2007	7 13-2007	7/17 2007	4.4:2007	713 2007	4/4/2007	4/4/2007
OCCODE								SA	SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	R.A	RA
		Maximum	Frequency	СТеанир	Number of	Number of	Number of							
0	Units		of Detection			Times Detected	Aughrage 2	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Parameter Metals	Chus	value	or Detection	COM	Excremates	Times Delevied	Athatyzas	Carde (Q)	value (Q)	value (Q)	(and (Q)	Printe (Q)	(Q)	14106-1021
	MGKG	34 0	710.	41	0	48	08	71.J	0.58 UJ	219 J	191	12.6.1	1911	[07] J
Antimo a					1		08	58	49	491	57	50	5.4	57
Arsenic	MGKG		100%	21.5	3	hS	08		4.4	491				
Cadmium	MGAG	102	8100	00	0	55	68	1.3	0.04 U	9.1	0.85	3.2	753	43
			81° o	60 10000	0 3	55	608 65	42.7	0 04 U 17 8	9.) 146.J	0.85	3 D 98 1	7.5.3 206.3	1101
Соррен	MG KG	402								P.				
Coppei Lead	MG KG MG KG	1919 403	100% 9	10000	0	128	68	42.7	178	146 J	.30	98-1	206_3	1191
Coppei Lead Mercuiv	MG KG MG KG MG KG	462 1914 6.094	100° a 100° a 17° a	10000	0	178 178	68 68	42 7 445 0 056	178 203 005	146 J 712 J	59 108 J	98-1 513	206 J	119 1 702 J
Coppei Lead	MG KG MG KG	462 1914 6.094	100° -	10000	0 2 0	178 178 196	50 80	42 7 445	178 203	146 J 712 J 0 09	39 108 J 0.027	98-1 513 0.071	206 J 1540 J 0 066	119 J 702 J 0 073

Notes

(1) The cleanup goal (CUG) values are from Table 2-1 or SEAD-16-17 Remedial Design Work Plan

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(6) A holded and outlined cell indicates a concentration that exceeded the site-specific CUGs

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U compound was not detected

1 = the reported value is an estimated concentration

UI - the compound was not detected, the associated reporting limit is approximate

R the analytical result was rejected during data validation

SITE LOCAT	TON							SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								F7	F7	F8	F8	G2	G3	1. A. W. C.
LOCATION	D							17EXFL-F7-01	17EXFL-F7-01	17EXFL-F8-01	17EXPR-F8-02	17EXPR-G2-01	17EXFL-03-01	17EXFL-G3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOL	SOIL
SAMPLE ID								17EXFL-F7-01	17EXFL-F7-02	17EXFL-F8-01	7EXPR-F8-02	17EXPR-G2-01	17EXFL-G3-02	17EXFL-G3-01
TOP OF SAM	IPLE							0	0	0	0	0	0	1949年1946年 日 1996年
BOTTOM OF	SAMPLE							0.2	0.2	0.2	0 2	0.2	0.2	0.2
SAMPLE DA	TE							7/13/2007	7/18/2007	7/13/2007	5/3/2007	4/4/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of						and the strate of the point of	handle and have been and the second second
Parameter	Units	Value	of Detection	Goal	Exceedances	Times Detected	Analyzes ²	Value (Q)	Value (Q)					
Metals														Charles and the state
Antimony	MG/KG	34.6	71%	41	0	48	68	06 UJ	0.64 UJ	0.58 UJ	7 2 J	3.9 J	777	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	5	44.1	4.1	3 5	57	4.Z	5.91
Cadmium	MG/KG	162	81%	60	0	55	68	0 04 U	0 24 J	0 04 U	34 J	2 3	(The second sec	* 119 P
Copper	MG/KG	402	100%	10000	0	68	68	191	16.9 J	10.8	65.3	479	414 J.	66.9 Jan
Lead	MG/KG	1910	100%	1250	2	68	68	16	14.8 J	12.9	798	317 J	373 1	1544 J
Mercury	MG/KG	0 094	97%	57	0	66	68	0.045	0,046	0.027	0.039 1	0.036	0.048	0.032
Thallium	MG/KG	0	0%	67	0	0	68	0.74 U	0.78 UJ	0.71 U	0.99 U	UII	10.7 U	0.68 U
Zinc	MG/KG	634	100%	10000	0	68	68	60 2 J	50 5 J	52 J	170	188 J	102 J	196 J

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PWEWProtectivenees PBC INSEAD-16_170.construction Completion ReportPart EmailAppendixes/Appendix 1:+ Complete Analytical results/Table D-2.8-17_complete_confirm_soil_data.xls

								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
SITE LOCAT	ION							GI GI	G3	G3	G4	G4	G5	GS
GRID ID	_							17EXPL-GJ-di	17EXFL-G3-04	17EXPR-G3-01	17EXFL-G4-01	I7EXPR-G4-01	17EXFL-G5-01	17EXPR-G5-02
LOCATION	D								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
MATRIX								SOIL			17EXFL-G4-01	17EXPR-G4-01	17EXFL-G5-01	17EXPR-G5-02
SAMPLE ID								FAEXET-C3-03	17EXFL-G3-04	17EXPR-G3-01	T/EXFL-G4-01		1/EXPL-03-01	TRAFK-03-02
TOP OF SAM								C XO- 10	0	0	0	0	0	0
BOTTOM OF	SAMPLE							.0.2	02	0.2	0.2	02	0.2	0 2
SAMPLE DA	TE							7/18/2007	8/2/2007	7/13/2007	7/13/2007	4/4/2007	7/13/2007	\$/3/2007
OC CODE								, ALSA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of							
Parameter	Units	Value	of Detection	Goal 1	Exceedances	Times Detected	Analyzes ²	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals								1 Calific the state						
Antimony	MG/KG	34 6	71%	41	0	48	68	1.5 1.5 1.5 1.5	0.63 J	14.5 J	13.9 J	5 9 J	108 J	5.2 J
Arsenic	MG/KG	123	100%	215	0	68	68	1.917.年。	2.9	74	47	4.7	64	4.6
Cadmium	MG/KG	16.2	81%	60	0	55	68	14 ". : 11.9 1" 1	0.57	3	4.2	1.3	2 9	1.9 1
Copper	MG/KG	402	100%	10000	0	68	68	A 2 4 466.9 5	14	110	96.6	5 2	142	59.3
Lead	MG/KG	1910	100%	1250	2	68	68	506 J 24	51.5	773	527	386 J	485	403
Mercury	MG/KG	0 0 9 4	97%	5.7	0	66	68	1, 10,042/8	0.044	0,03	0.044	0.055	0 052	0.057 J
Thallium	MG/KG	0	0%	6.7	0	0	68	* E-C'0.81 III	0.71 U	0.72 U	07 U	0.97 U	0.72 U	1 U
	MG/KG	634	100%	10000	D	68	68	s an and the	52.8	248	178 J	111 3	170 J	137

Notes

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UJ = the compound was not detected; the associated reporting limit is approximate

R = the analytical result was rejected during data validation

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ę.

	TAN							SEAD-17
SITE LOCAT	TON							
GRID ID								G7
LOCATION ID MATRIX SAMPLE ID TOP OF SAMPLE								17EXPR-G7-01 SOIL 17EXPR-G7-01 0
BOTTOM OF SAMPLE								02
SAMPLE DATE								7/13/2007
OC CODE								SA
SIUDY ID								RA
		Maximum	Frequency	Cleanup	Number of	Number of	Number of	
Parameter	Units	Value	of Detection	Goal	Exceedances	Times Detected	Analyzes ²	Value (Q
Metals								
Antimony	MG/KG	34.6	71%	41	0	48	68	15.1 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	4,5
Cadmium	MG/KG	16.2	81%	60	0	55	68	3.2
Copper	MG/KG	402	100%	10000	0	68	68	92.3
Lead	MG/KG	1910	100%	1250	2	68	68	860
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0,094
					-	0	68	080
Thallium	MG/KG	0	0%	6.7	0	0	60	080

Notes:

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U = compound was not detected

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UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

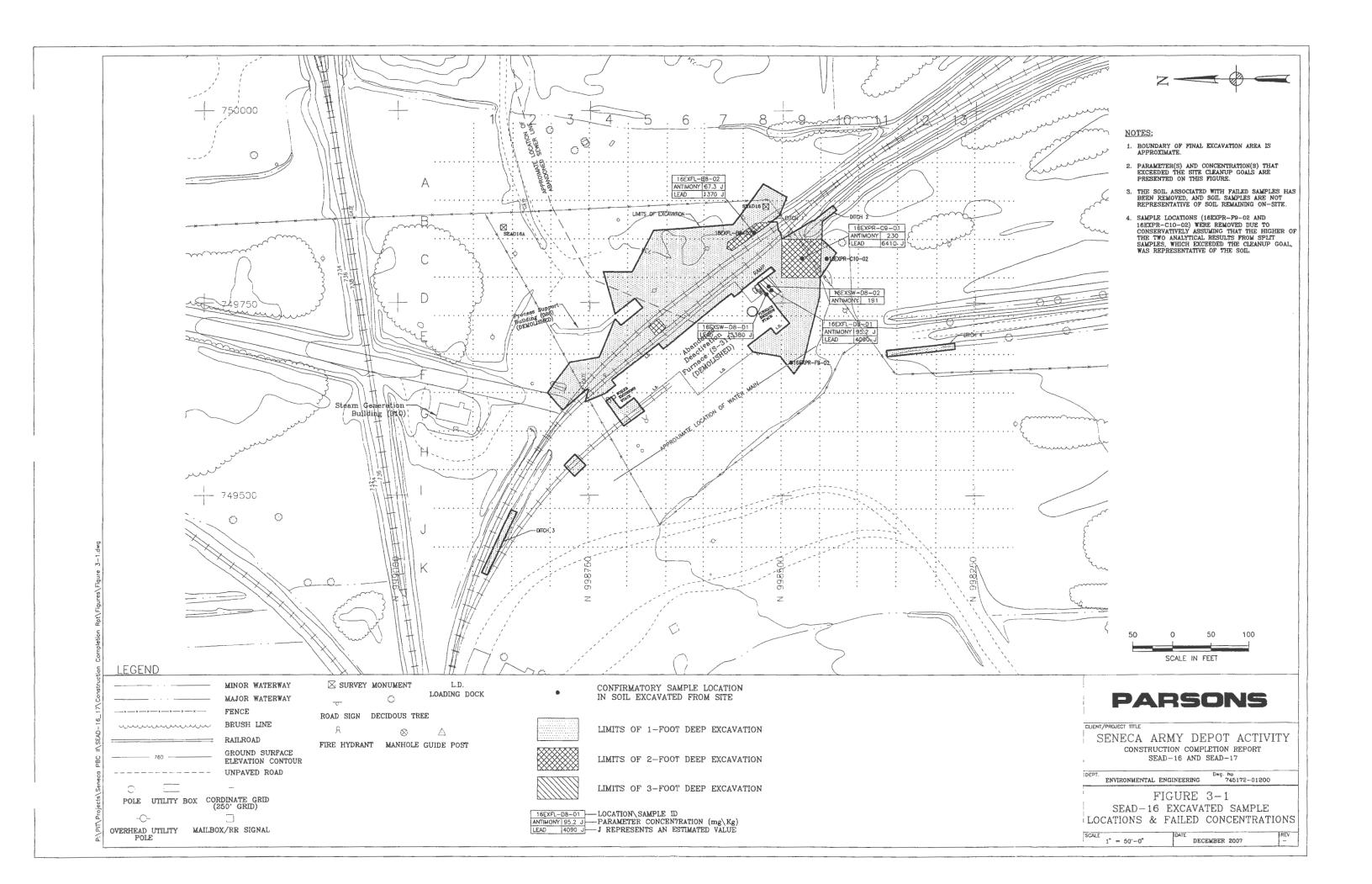
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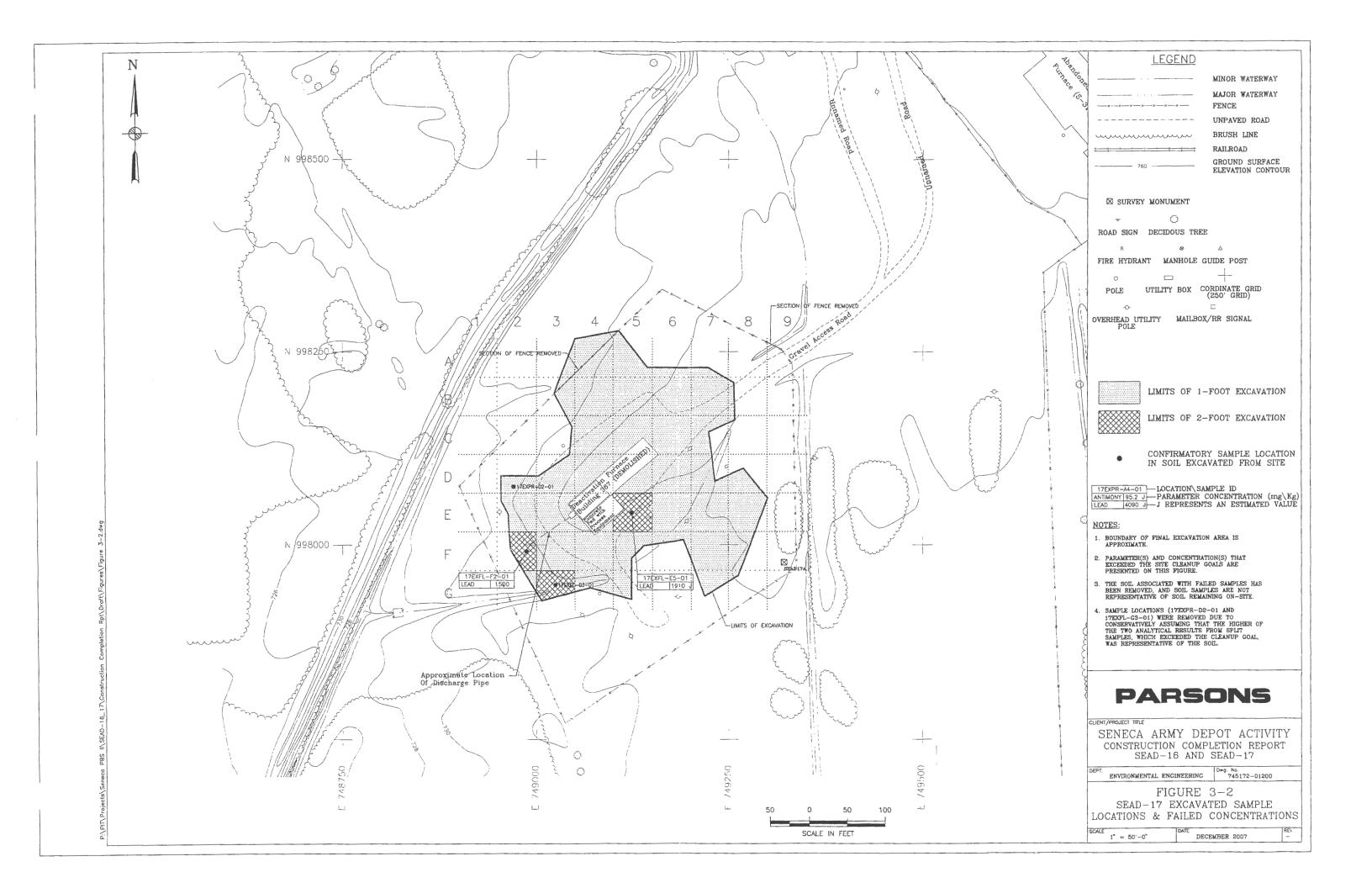
Page 11 of 11 5/21/2008

APPENDIX F

CHAIN OF CUSTODY

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PREPARED FOR:

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT REMEDIATION OF ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ROMULUS, NEW YORK

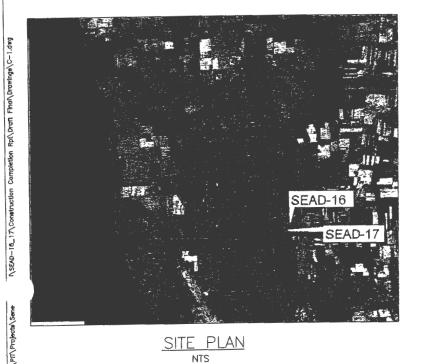
CONSTRUCTION COMPLETION REPORT (MARCH 2008)



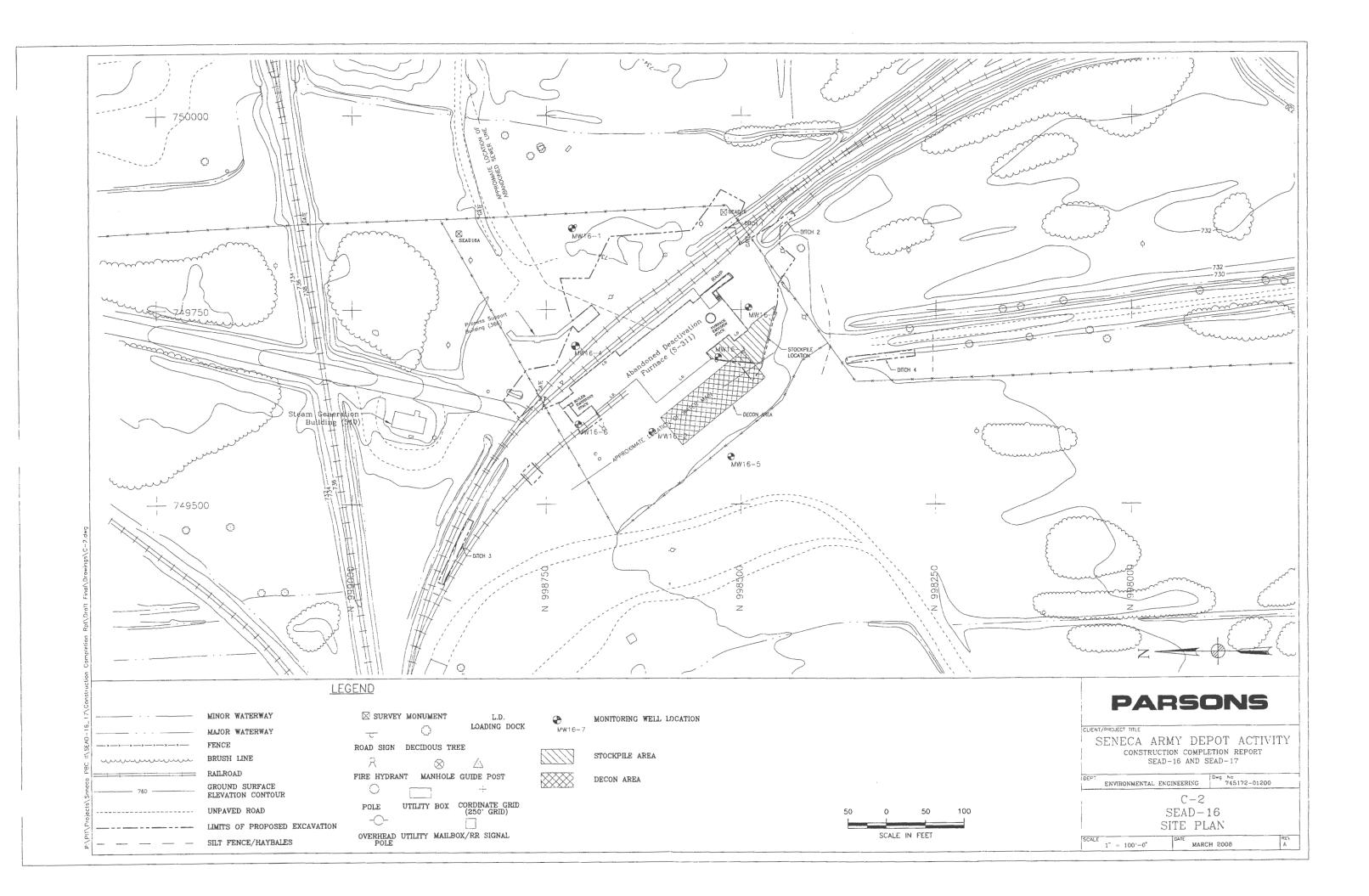
LOCATION MAP

DRAWING LIST

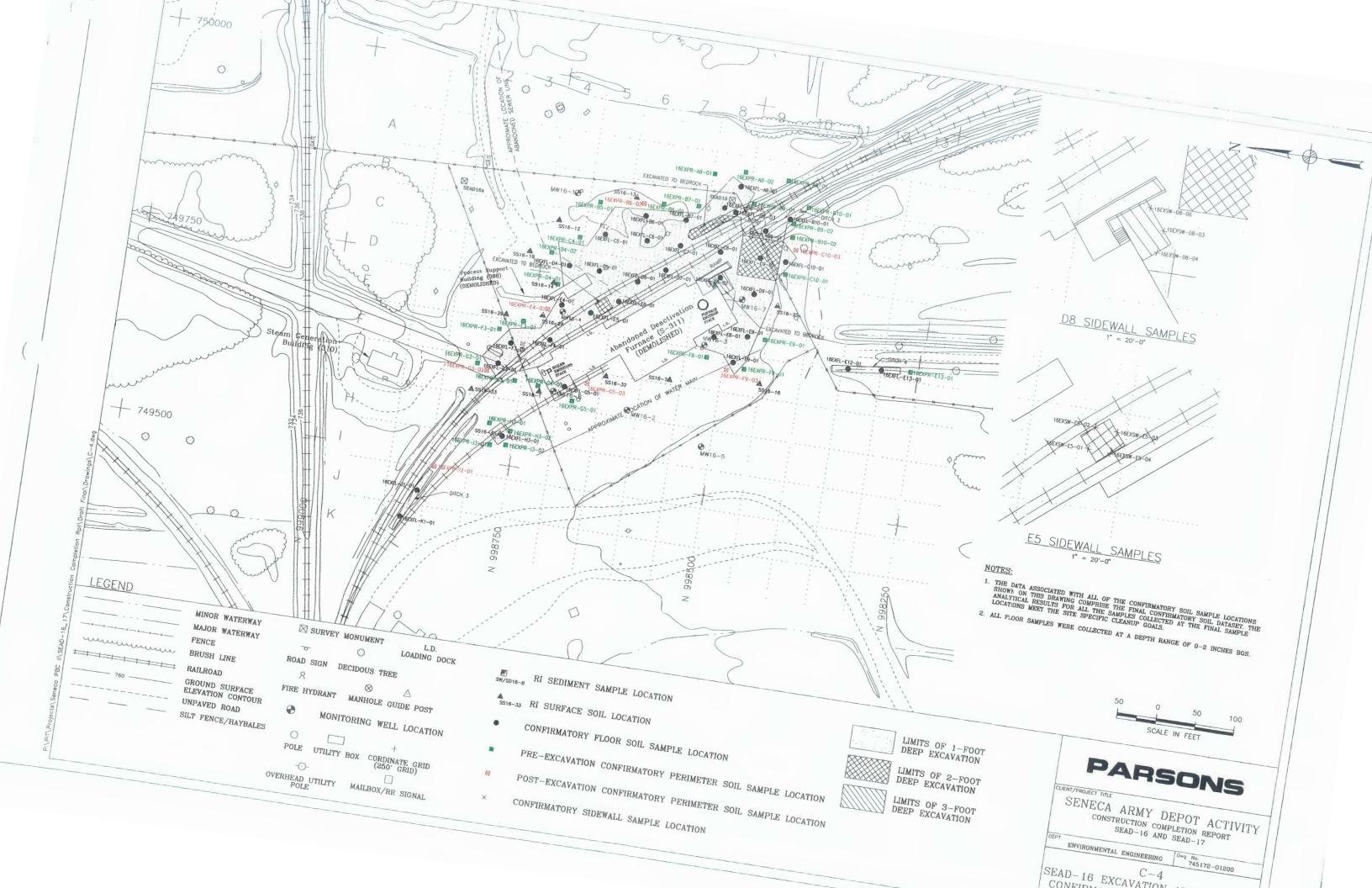
SHEET NO.	REVISION NO.	DESCRIPTION
C-1	A	TITLE SHEET
C-2	А	SEAD-16 SITE PLAN
C-3	А	SEAD-17 SITE PLAN
C-4	А	SEAD-16 EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOC
C-5	А	SEAD-17 EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOC

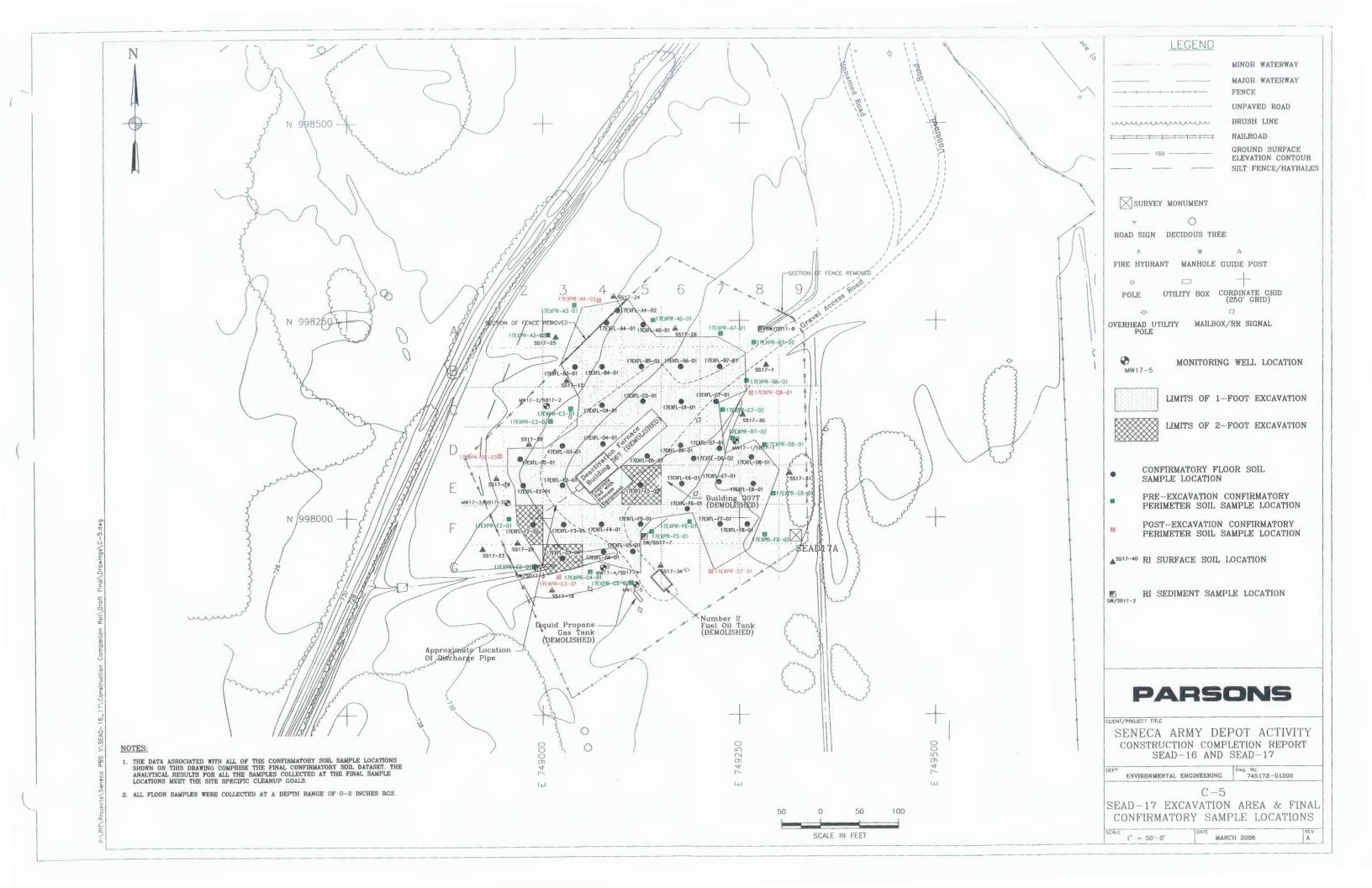


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	DEPT. ENVIRONMENTAL ENGINEERING Dwg. No. 746172-01200
	C-1 TITLE SHEET
	SCALE NA DATE MARCH 2008 REV A









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ROJECT REFERENCE/NA EAD-16/17 Remedial Actio	MÊ n		PROJECT NO. 745172-01200)	NY	1	Sample Informa	tion		1	R	EQUIRED	ANALYS	ES			-401	1	0 1	
L (LAB) PROJECT MANA ony Bogolin	GER		P.O. NUMBER 745172-30000)-00	CONTRACT/Quote NO. 745172-30000-00	9				Hg. Ti, &	Metod						Calegory B	ri Type (Circ calendar da	le al least one): At	P2000
ENT (SITE) PM cquellne Travers/C	hunhua Liu		CLIENT PHONE 817-449-1587	(C. Llu)	CLIENT FAX 617-946-9777	SAMPLE				и, РЪ, Н 0108 &	PAHs -					- 1	QAP/Quote	D REPORT	ner <u>(circle one</u>)	
ENT NAME reone			CLIENT EMAIL chunhua.llu@)	parsons.com		SAM				Sb, As, Cd, Cu, Pb, H Zn - Method 6010B & 7471A	Carcinogenic PAHs - Metod 8270C						FAX	EMAIL P	OST Other	
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7/19/2007	15:00	16EXPR	-B6-02			-	Grab		S	X							QAVQC	analysi	8.	
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7/18/2007	10:10	16EXPR	R-F9-02				Grab	N	S	X				_						
7/19/2007	12:20	16EXPR	-G3-02			1	Grab	N	S	Х										
7/18/2007	10:20	16EXFL	-G5-01				Grab	N	S	X	X						Prese	ervativ	e	
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Original - Return to Laboratory with Sample(s)

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ENT NAME ISONS		CLIENT EMAIL chunhua.liu@	parsons.com						, As, Cd, Cu, Pb, I - Method 60108 8 11A	EPA 1311 - TCLP						FAX 1 TAT/ DATE		POST	Other
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Original - Return to Laboratory with Sample(s)

Bogolin, Tony

From:Liu, Chunhua [Chunhua.Liu@parsons.com]Sent:Tuesday, July 17, 2007 12:00 PMTo:Bogolin, TonySubject:Sample ID change - A07-7848

Tony:

Would you please rename 17EXFL-G3-01 collected at 7/13 12:30 to 17EXFL-G3-02?

Thanks. Chunhua Liu, Sc.D. Project Engineer Parsons 150 Federal Street 4th Floor Boston, MA 02110 Tel: (617) 449-1567 (DID), (617) 946-9400 Fax: (617) 946-9777 http://www.parsons.com

SEVERN TRENT	STL	ANALYSIS	REQUEST	AND CH		Y RE	CORD						zelwoo	d Drive, 14228					13-07-0	78
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PROJECT & CL					Project State	7								91-7991 w.stl-inc.	com				Lab Dis	posal
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STL (LAB) PROJECT MAN Tony Bogolin	AGER		P.O. NUMBER 745172-30000	0-00	CONTRACT/Quote NO. 745172-30000-00											Τ		Final Rep Category EDD 11	в	st least one): ASP2000
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CLIENT NAME Parsons			CLIENT EMAIL Chunhua.liu@	parsons.com	1	SAMPLE ID					Method 6010B								ED REPORT (EMAIL PO TE DUE	
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acquellne Travers/Chunhus Llu LLENT NAME Parsons	CLIENT EMAIL CLIENT EMAIL Chunhua.llu@parsons.co	617-946-9777	SAMPLE ID					METALS - N						QAP/Quo EXPEDIT	la ED REPORT (c EMAIL PO	<u>ess days</u> Per Niccle one) ST Other
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ny Bogolin	<u>258</u>	P	45172-30000-	00	CONTRACTICUON NO. 745172-30000-00	Q			Τ	별				1	T		Calepary S EDD 15	CANADA ART	
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L (LAB) PROJECT MAN	AGER		P.O. NUMBER 745172-3000	0-00	CONTRACT/Quole NO. 745172-30000-00	9		Τ		Hg. Tl. &							Category B	Type (Circle	at least ons): ASP2000
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IENT NAME			CLIENT EMAIL Chunhua. llu@	parsons.com			1			Sb, As, Cd, C Zn - Method 6 7471A							FAX E TAT/ DATE	email pos Due	ST Other
IENT ADDRESS 50 Federal Street,		2110				LABORATORY				Sb, A Zn - N 74719								FCOOLERS	
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Original - Return to Laboratory with Sample(s)

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Original - Return to Laboratory with Sample(s)

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Original - Return to Laboratory with Sample(s)

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APPENDIX G

CASE NARRATIVE

SDG NARRATIVE

Job#: <u>A07-4776</u>

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-4776

Sample Cooler(s) were received at the following temperature(s); 2.0 °C Samples 17 and 18 housed under jobs A07-3430-08,MS,MSD and A07-3433-12,MS,MSD respectively.

Metals Data

The recoveries of sample 17EXPR-E2-01 Matrix Spike exhibited results below the quality control limits for Copper and Lead and a result above the quality control limits for Zinc. The recoveries of sample 17EXPR-E2-01 Matrix Spike Duplicate exhibited results below the quality control limits for Copper and Zinc and a result above the quality control limits for Lead. The sample results are more than four times greater than the spike added. The RPD between sample 17EXPR-E2-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Copper and Lead. The LCS was acceptable.

The recoveries of sample 17EXPR-E2-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and Mercury (MSD only) Sample matrix is suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

	SAMPI	ED	RECEIVE	ED
ID MATRIX	DATE	TIME	DATE	TIME
SOIL	05/03/2007	16:12	05/04/2007	08:35
SOIL	05/03/2007	16:15	05/04/2007	08:35
SOIL	05/03/2007	16:23	05/04/2007	08:35
SOIL				08:35
SOIL				08:35
SOIL	04/04/2007	16:25	05/04/2007	08:35
SOIL				08:35
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SOIL	05/03/2007	15:45	05/04/2007	08:35
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SOIL	05/03/2007	15:29	05/04/2007	08:35
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SDG NARRATIVE

Job#: A07-5307

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-5307

Sample Cooler(s) were received at the following temperature(s); 2.0 °C At client's request, samples collected on 4/4/06 and received on 4/6/06 were redigested and reanalyzed for Total Zinc.

LAB: Please mix sample thoroughly using a disposal bowl prior to extraction.

Metals Data

The recovery of sample 17EXPR-F6-01 Matrix Spike exhibited a result above the quality control limit for Zinc. Sample matrix was suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

			SAMPI	LED	RECEIVE	ED
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7530701	17EXPR-A4-01	SOIL	04/04/2007	14:37	04/06/2007	10:30
A7530702	17EXPR-A4-02	SOIL	04/04/2007	15:20	04/06/2007	10:30
A7530703	17EXPR-A5-01	SOIL	04/04/2007	14:40	04/06/2007	10:30
A7530704	17EXPR-B7-01	SOIL	04/04/2007	14:33	04/06/2007	10:30
A7530705	17EXPR-B8-01	SOIL	04/04/2007	14:30	04/06/2007	10:30
A7530706	17EXPR-C7-01	SOIL	04/04/2007	14:10	04/06/2007	10:30
A7530707	17EXPR-C7-02	SOIL	04/04/2007	15:10	04/06/2007	10:30
A7530708	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530708MS	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530708SD	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530709	17EXPR-F6-02	SOIL	04/04/2007	15:10	04/06/2007	10;30

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SDG NARRATIVE

Job#: A07-5309

SIL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-5309

Sample Cooler(s) were received at the following temperature(s); 2.0 $^{\circ}$ C At client's request, samples collected on 4/4/06 and received on 4/6/06 were redigested and reanalyzed for Total Lead and Copper (16EXPR-G5-01 and 16EXPR-G5-02 only).

LAB: Please mix sample thoroughly using a disposal bowl prior to extraction.

Metals Data

The recovery of sample 16EXPR-G5-01 Matrix Spike exhibited a result below the quality control limits for Lead. Sample matrix is suspect. However, the LCS was acceptable.

The Serial Dilution of sample 16EXPR-G5-01 exceeded the quality control limits for Copper. However, the Post Spike of this sample and element was compliant. Therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample 16EXPR-G5-01 exceeded the quality control limits for Lead. Sample matrix is suspect, therefore, no correction action was necessary.

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SAMPLE SUMMARY

			SAMPI	FD	RECEIVI	Ð
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7530908	16EXPR-B9-01	SOIL	04/04/2007	15:58	04/06/2007	10:30
A7530909	16EXPR-B9-02	SOIL	04/04/2007	16:00	04/06/2007	10:30
A7530910	16EXPR-E13-01	SOIL			04/06/2007	
A7530903	16EXPR-E3-01	SOIL			04/06/2007	
A7530901	16EXPR-G2-01	SOIL			04/06/2007	
A7530902	16EXPR-G3-01	SOIL			04/06/2007	
A7530911	16EXPR-G4-01	SOIL			04/06/2007	
A7530912	16EXPR-G5-01	SOIL			04/06/2007	
A7530912MS	16EXPR-G5-01	SOIL			04/06/2007	
A7530912SD	16EXPR-G5-01	SOIL			04/06/2007	
A7530913	16EXPR-G5-02	SOIL	04/04/2007	16:30	04/06/2007	10:30
A7530904	16EXPR-H3-01	SOIL			04/06/2007	
A7530905	16EXPR-H3-02	SOIL	04/04/2007	15:40	04/06/2007	10:30
A7530906	16EXPR-I3-01	SOIL			04/06/2007	
A7530907	16EXPR-I3-02	SOIL	04/04/2007	15:50	04/06/2007	10:30

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

SDG NARRATIVE

Job#: A07-7480

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-7480

Sample Cooler(s) were received at the following temperature(s); 12.0 °C Samples were received at a temperature of 12.0° C. These samples were analyzed as per instructions from the client. Based on EPA data validation guidelines, all detected concentrations and detection limits should be considered estimated values.

GC/MS Volatile Data

Initial calibration standard curve A7I0000493-1 exhibited a percent Relative Standard Deviation (%RSD) of greater than 15% for compounds Bromomethane, Methylene Chloride, 1,2,3-Trichlorobenzene and 1,2-Dibromo-3-chloropropane. However, the overall mean RSD of all compounds is 6.64%.

All samples were preserved to a pH less than 2.

GC/MS Semivolatile Data

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A710000447-1.

SAMPLE SUMMARY

1

			SAMP	LED	RECEIVI	ED
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7748002	16EX00001	WATER	07/03/2007		07/05/2007	10:20
A7748001	16WWT16-0703	WATER	07/03/2007	11:15	07/05/2007	10:20

SDG NARRATIVE

Job#: <u>A07-7847</u>

Project#: <u>NY5A9493.1</u> Site Name: <u>SFNECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Conments

A07-7847

Sample Cooler(s) were received at the following temperature(s); 2.0 °C All samples were received in good condition.

Metals Data

The recovery of sample 17EXPR-G7-01 Matrix Spike exhibited a result above the quality control limits for Lead. The sample result is more than four times greater than the spike added. The LCS was acceptable.

The recovery of sample 17EXPR-G7-01 Post Spike exhibited a result below the quality control limits for Lead. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

Revision Comments

This report was revised to correct client sample IDs. Sample 17EXFL-A4-01 collected at 10:20 was incorrectly logged in as 17EXFL-A4-03. Sample 17EXPR-A4-01 collected at 10:25 was changed to 17EXPR-A4-03 at client's request.

33R1468

SAMPLE SUMMARY

			SAMPI	ED	RECEIVE	ED
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7784713	17EX00100	WATER			07/14/2007	
A7784701	17EXFL-A4-01	SOIL			07/14/2007	
A7784702	17EXFL-A5-01	SOIL			07/14/2007	
A7784704	17EXFL-B3-01	SOIL			07/14/2007	
A7784703	17EXFL-B4-01	SOIL			07/14/2007	
A7784705	17EXFL-B5-01	SOIL			07/14/2007	
A7784706	17EXFL-C4-01	SOIL	07/13/2007	10:45	07/14/2007	09:00
A7784707	17EXFL-D4-01	SOIL	07/13/2007	10:50	07/14/2007	09:00
A7784711	17EXPR-A4-03	SOIL			07/14/2007	
A7784708	17EXPR-C8-01	SOIL			07/14/2007	
A7784709	17EXPR-D2-01	SOIL	07/13/2007	10:50	07/14/2007	09:00
A7784710	17EXPR-G3-01	SOIL	07/13/2007	12:20	07/14/2007	09:00
A7784712	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00
A7784712MS	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00
A7784712SD	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00

SDG NARRATIVE

Job#: <u>A07-7848</u>

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-7848

Sample Cooler(s) were received at the following temperature(s); 2.0 °C

Sample 08 was listed on the COC as 17EXFL-E2-01 but was labeled as 17EXFL-F2-01 (sampled at 1105). It was logged in by the bottle label ID. Sample time was changed to 1110 by client.

Sample 17EXFL-F2-01 (sampled at 1115) was not received.

Two bottles were received for point 17EXFL-G3-01. One was sampled at 1230 and the other at 1210. The ID for the sample collected at 1230 was changed to 17EXFL-G3-02 per the client.

Sample 17EXFL-F3-01 was not listed on the COC but was received. It was logged in using sample dates and times from the bottle label.

<u>Metals Data</u>

The recoveries of sample 17EXFL-D3-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and Zinc. Sample matrix is suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

			SAMPI	LED	RECEIV	ΞD
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7784803	17EXFL-C5-01	SOIL	07/13/2007	10:00	07/14/2007	09:00
A7784802	17EXFL-C7-01	SOIL	07/13/2007	07:30	07/14/2007	09:00
A7784801	17EXFL-D3-01	SOIL	07/13/2007			09:00
A7784801MS	17EXFL-D3-01	SOIL	07/13/2007	11:00	07/14/2007	09:00
A7784801SD	17EXFL-D3-01	SOIL			07/14/2007	09:00
A7784804	17EXFL-D7-01	SOIL			07/14/2007	09:00
A7784805	17EXFL-D8-01	SOIL			07/14/2007	09:00
A7784806	17EXFL-E2-01	SOIL			07/14/2007	09:00
A7784807	17EXFL-E3-01	SOIL			07/14/2007	09:00
A7784809	17EXFL-E7-01	SOIL			07/14/2007	09:00
A7784810	17EXFL-E8-01	SOIL	07/13/2007	09:40	07/14/2007	09:00
A7784808	17EXFL-F2-01	SOIL			07/14/2007	09:00
A7784819	17EXFL-F3-01	SOIL	07/13/2007	11:15	07/14/2007	09:00
A7784817	17EXFL-F4-01	SOIL			07/14/2007	09:00
A7784815	17EXFL-F6-01	SOIL	07/13/2007	09:50	07/14/2007	09:00
A7784818	17EXFL-F7~01	SOIL			07/14/2007	09:00
A7784816	17EXFL-F8-01	SOIL	07/13/2007	09:30	07/14/2007	09:00
A7784813	17EXFL-G3-01	SOIL	, ,		07/14/2007	09:00
A7784812	17EXFL-G3-02	SOIL	07/13/2007	12:30	07/14/2007	09:00
A7784811	17EXFL-G4-01	SOIL			07/14/2007	09:00
A7784814	17EXFL-G5-01	SOIL	07/13/2007	12:45	07/14/2007	09:00

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Bogolin, Tony

From:Liu, Chunhua [Chunhua.Liu@parsons.com]Sent:Tuesday, July 17, 2007 12:00 PMTo:Bogolin, TonySubject:Sample ID change - A07-7848

Tony:

Would you please rename 17EXFL-G3-01 collected at 7/13 12:30 to 17EXFL-G3-02?

Thanks. Chunhua Liu, Sc.D. Project Engineer Parsons 150 Federal Street 4th Floor Boston, MA 02110 Tel: (617) 449-1567 (DID), (617) 946-9400 Fax: (617) 946-9777 http://www.parsons.com The recoveries of sample 17EXFL-B6-01 Matrix Spike exhibited results below the quality control limits for Antimony, Cadmium and Thallium. The recoveries of sample 17EXFL-B6-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, Copper, and Thallium. Sample matrix is suspect. The RPD between sample 17EXFL-B6-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Arsenic and Copper. The LCS was acceptable.

The Serial Dilution of sample 17EXFL-B6-01 exceeded the quality control limits for Cadmium. However, the Post Spike of this sample and element was compliant. Therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample 17EXFL-B6-01 exceeded the quality control limits for Copper, Lead and Zinc. Sample matrix is suspect, therefore, no correction action was necessary.

The Serial Dilution of sample 17-DS-19 exceeded the quality control limits for Barium and Chromium. However, the Post Spike of this sample was compliant. Therefore, no corrective action was necessary.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

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Anthony E. Bogelin Project Manag

Date

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METHODS SUMMARY

Job#: A07-8159

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Barium - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Chromium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7470
Mercury - Total	SW8463 7471
Selenium - Total	SW8463 6010
Silver - Total	SW8463 6010
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010
Toxicity Characteristic Leaching Procedure	SW8463 1311

References:

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SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recoveries of sample 16EXFL-D8-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, and Thallium (MS). The recovery of sample 16EXFL-D8-01 Matrix Spike exhibited a result above the quality control limit for Mercury. Sample matrix was suspect. The RPD between sample 16EXFL-D8-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Mercury. However, the LCS was acceptable.

The Post Spike and Serial Dilution of sample 16EXFL-D8-01 exceeded the quality control limits for Lead and Zinc. Sample matrix was suspect, therefore, no correction action was necessary.

The recovery of sample 16EXFL-D8-01 Post Spike exhibited a result above the quality control limit for Copper. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogolin Project Manager

Date

Job#: A07-8164

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
METHOD 8270- POLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

Metals Data

The recoveries of sample 16EXFL-E8-01 Matrix Spike exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, Copper, Lead, Thallium, and Zinc. The recoveries of sample 16EXFL-E8-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, and Thallium. Sample matrix is suspect. However, the LCS was acceptable.

The Serial Dilution of sample 16EXFL-E8-01 exceeded the quality control limits for Copper and Zinc. However, the Post Spike of this sample was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogolin Project Manager 7 30 07

Date

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METHODS SUMMARY

Job#: <u>A07-8166</u>

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYI'LCAL METHOD
METHOD 8270- FOLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

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The recovery of sample 16EXSW-D8-02 Post Spike exhibited a result below the quality control limit for Lead. However, the Serial Dilution of this sample and element was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogolin Project Manager Project Manager

7/30/07

Date

Job#: A07-8169

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

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Anthony E. Bogolin Project Manager 8/2/07 Date

Date

Job#: A07-8507

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	<i>S</i> W8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recovery of sample 16EXSW-D8-02 Post Spike exhibited a result above the quality control limits for Lead. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogolin / Project Manager 8/10/07

Date

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Job#: A07-8673

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

	ANALYTICAL
PARAMETER	METHOD
Lead - Total	SW8463 6010

References:

.

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

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Anthony E. Bogotta Project Managely 8/10/07

Date

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METHODS SUMMARY

Job#: <u>A07-8686</u>

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

	ANALYTICAL
PARAMETER	METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The results presented in this report relate only to the analytical testing and conditions of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

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The Post Spike and Serial Dilution of sample 16EXFL-D8-02 exceeded the quality control limits for Lead. Sample matrix is suspect, therefore, no correction action was necessary.

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Tony Boynkin Anthony E. Bogqfin Project Manager 8/9/07

Date

Job#: A07-8747

Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

	ANALYTICAL
PARAMETER	METHOD
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recoveries of sample 17EXPR-B3-01 Post Spike exhibited results below the quality control limits for Lead and Zinc. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogplin Project Managek

Date

Job#: A07-3429

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	+	ALYTICAL METHOD
Antimony - Total	SW8463	6010
Arsenic - Total	SW8463	6010
Cadmium - Total	SW8463	6010
Copper - Total	SW8463	6010
Lead - Total	SW8463	6010
Mercury - Total	SW8463	7471
Thallium - Total	SW8463	6010
Zinc - Total	SW8463	6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recovery of sample 17EXPR-F6-01 Post Spike exhibited a result below the quality control limits for Lead. However, the Serial Dilution of this sample and element was compliant. Therefore, no corrective action was necessary.

The Serial Dilution of sample 17EXPR-F6-01 exceeded the quality control limits for Cadmium and Zinc. However, the Post Spike of this sample and elements was compliant. Therefore, no corrective action was necessary.

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Date

Job#: A07-3430

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

- SW8463
- "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Anthony E.

Project Manager

Date

Job#: A07-3432

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMEIER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

Metals Data

The recoveries of sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Copper and Zinc. The sample results are more than four times greater than the spike added. The RPD between sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Copper. The LCS was acceptable.

The recoveries of sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and results above the quality control limits for Lead. Sample matrix is suspect. The RPD between 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Antimony and Lead. The LCS was acceptable.

The recoveries of sample 15EXPR-G5-01 Post Spike exhibited results below the quality control limits for Copper and Zinc. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Anthony E. Bogolin Project Manager

Date

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METHODS SUMMARY

Job#: <u>A07-3433</u>

STL Project#: <u>NY5A9493.1</u> Site Name: <u>SENECA AD</u>

PARAMETER	ANALYTICAL METHOD
METHOD 8270- POLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total Arsenic - Total Cadmium - Total Copper - Total Lead - Total Mercury - Total Thallium - Total Zinc - Total	SW8463 6010 SW8463 6010 SW8463 6010 SW8463 6010 SW8463 6010 SW8463 7471 SW8463 6010 SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

APPENDIX H

DATA VALIDATION

APPENDIX H: DATA VALIDATION

This appendix presents an overall summary of data usability for the SEAD-16/17 soil confirmatory samples collected during the Remedial Action during April through August 2007. The data reviewed include 17 sample delivery groups (SDG) submitted by Test American Laboratories, Inc. (former Severn Trent Laboratories, Inc.), Amherst, NY (A07-3429, A07-3430, A07-3432, A07-3433, A07-4776, A07-5307, A07-5309, A07-7847, A07-7848, A07-8159, A07-8164, A07-8166, A07-8169, A07-8507, A07-8673, A07-8686, and A07-8747). Table H-1 provides a summary of the data that have been validated. In summary, the following confirmatory samples were submitted for analysis:

- 86 confirmatory samples from SEAD-17 for analysis of antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc;
- 96 confirmatory samples from SEAD-16 for analysis of antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc; 6 samples among the 96 samples were also analyzed for carcinogenic Polycyclic Aromatic Hydrocarbons (PAHs).

Carcinogenic PAH samples collected for the remedial action were analyzed using the USEPA SW-846 Method 8270C. Metal analyses were conducted in accordance with the USEPA SW-846 Method 6010B and 7471A.

It should be noted that there are some other samples collected under the remedial action program (e.g., disposal material waste characterization samples, excavation water sample, and fill material sample). Validation for these sample results was not required for the project and therefore these sample results are not discussed in this appendix.

Data validation was performed by Parsons' chemists and completed under the guidelines set forth in the Region 2 RCRA and CERCLA Data Validation Standard Operating Procedures (SOPs) with consideration for the site-specific quality assurance requirements presented in the Final Remedial Design Work Plan and Design Report (Parsons, 2007) and the general quality assurance requirements presented in the Generic Site-Wide Sampling and Analysis Plan (SAP) for the Seneca Army Depot Activity (Parsons, 2006). The Region 2 SOPs used for data validation include Evaluation of Metals Data for the Contract Laboratory Program (CLP; SOP HW-2) and Validating Semivolatile Organic Compounds by SW-846 Method 8270 (HW-22), and CLP Organics Data Review and Preliminary Review, and Training Course for CLP Organic Data Validation. If guidance could not be found in the above SOPs, the project SAP, or the Seneca Site-Wide SAP, requirements set forth in the USEPA CLP, the New York State Department of Environmental Conservation (NYSDEC) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review; and USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review; and uservation during data validation. The data evaluation included performance of a completeness audit and a review of

the following parameters, where applicable: holding times, sample preservations, percentage of solids, quality control (QC) results of calibration, equipment/rinsate blanks, method blanks, matrix spike/matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) performances, laboratory and field duplicates, surrogate recoveries, instrument performance, chromatograms and mass spectrums, internal standard recovery, reporting limits, Inductively Coupled Plasma (ICP) serial dilution, interference check sample results, and ICP linear range. In performing the data validation, the raw data were spot-checked in accordance with the Region 2 SOPs to evaluate whether there was any transcription error.

Data qualifiers were added to the data based on the data validation and Attachment G-1 presents definition of data qualifiers.

1. OVERALL SUMMARY OF DATA USABILITY

The data reviewed were determined to be usable except for the data presented in **Table H-2.** The listed results were rejected either due to the spike results or field/laboratory duplicate results. All the other results are considered usable based on the data validation. It should be noted that with the exception of 16EXSW-D8-01 and 16EXSW-D8-05, all these samples have the affected fractions reanalyzed and all the reanalysis results were deemed usable. Lead for 16EXSW-D8-05 was also reanalyzed and the reanalysis result was acceptable.

2. ACCURACY

Accuracy was evaluated by reviewing the percent recovery (%R) of the MS/MSD, LCS, surrogate spikes, and internal standards. In addition, blank sample (method blank, trip blank, and equipment rinsate blank) results were reviewed to evaluate any potential contamination.

2.1 MS/MSD Results

MS/MSD sample analyses were conducted for ten project samples (17EXPR-B3-01, 17EXPR-F6-01, 16EXPR-F3-01, 16EXPR-G5-01, 17EXPR-E2-01, 17EXPR-G7-01, 17EXFL-D3-01, 17EXFL-B6-01, 16EXFL-D8-01, and 11EXPRJ1201) for metal analysis. In addition, MS/MSD analyses were conducted for 16EXPR-G5-01 for cPAH analysis. The samples were spiked with all target compound analytes and the frequency of MS/MSD sample analyses conducted is consistent with the generic requirement for Seneca project presented in the Generic Site-Wide Sampling and Analysis Plan (Parsons, 2006). Metal spike analysis was performed for each SDG and cPAH spike analysis was performed for each SDG with cPAH samples except SDG A07-8164.

All MS/MSD recoveries were within the laboratory established QC limits or/and the project limits of 75%-125% for all samples except those summarized in **Table II-3**.

In general, MS/MSD results for cPAH analysis indicated minimal matrix impact. No action was taken based solely on the MS/MSD results for cPAH analysis. MS/MSD results for metal analysis May 2008 Page II-2

P: PIT.Projects Seneca PBC IFSEAD-16_17 Construction Completion Report Draft Final Appendices Appendix H - Data Validation/datavalidation.doc indicated matrix impact and qualifiers were added to the affected metal results based on the spike results in accordance with the USEPA Region 2 SOPs and the details are presented in **Table H-3**.

2.2 LCS Results

LCS results for cPAH analyses were all within the laboratory established limits and the project advisory limits of 70~130%. LCS results for metal analysis were all within the project limits of 80%~120% with the exception of the LCS results for antimony in ten SDGs were above 120%, as summarized in **Table H-4**. LCS results for metal analysis were all within the project limits of 80%~120% with the exception of the LCS results for antimony in ten SDGs and arsenic, lead, thallium, and zinc results in SDG A07-8166 were above 120%, as summarized in **Table H-4**. All the associated metal detects were qualified J based on the LCS results.

2.3 Surrogate Recovery Results

Surrogate spike analyses were conducted for cPAH samples. All surrogate spike recoveries were within the laboratory established limits for cPAH analysis.

2.4 Internal Standard Results

Internal standards were added to cPAH samples to determine instrument stability. All the internal standard recoveries were within the project QC limits (i.e., the internal standard area responses were within $-50\% \sim +100\%$ of the internal standard area associated with CCV and all retention times were within 30 seconds of the standard associated with CCV.)

2.5 Blank Sample Results

Method blank analysis was conducted for each SDG per analytical method. Two rinsate blanks were collected for the remedial action sampling event and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. No metals were detected in either any of the rinsate blank samples.

Table H-5 presents a summary of blank noncompliance results. In summary, no cPAH contamination was detected in any cPAH method blanks. Various metals were detected in the initial calibration blanks (ICBs), continuing calibration blanks (CCBs), and preparation blanks in most SDGs, as shown in **Table H-5**. All detected concentrations were below the respective reporting limits. The sample results associated with the noncompliance blank results were qualified in accordance with the USEPA Region 2 SOPs.

3. PRECISION

Precision is determined by evaluating the RPD of the parent/field duplicate (FD) and MS/MSD or parent/laboratory duplicate. The generic precision limits for the Seneca project are presented in the

Generic Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity (Parsons, 2006). Professional judgment will be used based on the USEPA Region SOP for metal data validation (i.e., HW-2) when sample results are close to reporting limits. As an example, for sample results within five times of reporting limits, the difference was compared with two times of the reporting limits.

As shown in **Table H-6**, a total of 13 field duplicate pairs were available for the confirmatory soil samples collected from SEAD-16/17 for metal analysis (i.e., 17EXPR-B3-01/17EXPR-B3-02, 17EXPR-F6-01/17EXPR-F6-02, 16EXPR-F3-01/16EXPR-F3-02, 16EXPR-G5-01/17EXPR-E2-02, 17EXFL-G3-01/17EXFL-G3-02, 17EXFL-B7-01/17EXFL-B7-02, 16EXSW-D8-01/16EXSW-D8-05, 16EXPR-G5-03/16EXPR-G5-04, 16EXFL-F3-01/16EXFL-F3-02, 16EXFL-B10-01/16EXFL-B10-02, 16EXSW-D8-06/16EXSW-D8-07, and 16EXFL-F9-01/16EXFL-F9-01/16EXFL-F9-02). 16EXPR-G5-01/16EXPR-G5-02 and 16EXPR-G5-03/16EXPR-G5-04 were also analyzed for cPAHs. The field duplicate collection frequency is compliant with the requirement specified in the Generic Site-Wide SAP. All field duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table H-6**.

Laboratory duplicate analysis was conducted for metal analysis for all SDGs on either the samples (SDG A07-4776, A07-5307, A07-5309, A07-8673) or the spiked samples (all other SDGs plus SDG A07-8673). All laboratory duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table H-7**.

All RPD results for MS/MSD samples for cPAH analysis were within the laboratory established limits and the project limit of 25%.

4. REPRESENTATIVENESS AND OTHER TECHNICAL ISSUES

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Sample Package Completeness and Deliverables
- Sample Preservation and Technical Holding Time
- Laboratory Transcription Error
- Other Quality Assurance/Quality Control (QA/QC) Results

4.1 Sample Package Completeness and Deliverables

The data packages submitted by TestAmerican Laboratories are sufficient for the data validation conducted for this project.

4.2 Sample Preservation and Technical Holding Time

All samples were preserved according to the preservation requirement presented in the Generic Site-Wide SAP and analyzed within the holding time. All coolers were received with temperature below 6°C, within the limits specified by the USEPA Region II SOP HW-24 (i.e., 10°C) and the USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review (i.e., 4 ± 2 °C).

4.3 Laboratory Transcription Error

The raw data were spot-checked in accordance with the Region 2 SOP and no transcription error was observed.

4.4 Other QA/QC Results

4.4.1 Instrument Performance

GC/MS instrument performance check was performed for cPAH analyses. GC/MS performance met the analytical method requirements for all SDGs. Chromatography baselines were generally stable for cPAH analysis.

4.4.2 TCL Results

For cPAH target compound lists (TCLs) detected in the samples, a comparison of the sample relative ion intensities with the standard relative ion intensities for the respective reference TCL was conducted. All relative retention times (RRTs) for the identified analytes were within 0.06RRT units of the standard RRT from continuing calibration verification. The relative ion intensities generally agree within 20% of the standard relative ion intensities with several exceptions. No action was taken based on the review of the mass spectrums.

The laboratory case narratives for SDGs A07-3433 indicated that the chromatographic peaks for benzo(b)fluoranthene and benzo(k)fluoranthene could not be resolved for the samples in the SDG due to the sample matrix. The final values for the affected samples were reported as benzo(b)fluoranthene but should be considered an value for both compounds. The affected benzo(b)fluoranthene and benzo(k)fluoranthene results were qualified (nondetects were qualified UJ and detects were qualified J).

4.4.3 <u>Reporting Limits</u>

For cPAH analyses, the lowest calibration standard was used as the reporting limit and the reporting limits are the same as the CRQL specified by the CLP OLM04.3. For metal analysis, method detection limit was used as the basis for reporting limit and all reporting limits were below the CRQLs.

4.4.4 <u>Calibration</u>

Initial calibration and continuing calibration verification were conducted for cPAH and metal

analyses. Calibration noncompliances were observed for SDG A07-3433 only and the detailed information is presented in **Table H-8**. The affected data were validated based on the EPA Region 2 SOPs.

CRQL standard check was conducted for metal analysis and the results were within the project limits of 70% - 130% with the exceptions listed in Table H-9.

4.4.5 ICP Serial Dilution

ICP serial dilution was conducted for all SDGs with metal samples. All ICP serial dilution results were within the limits specified in the USEPA Region 2 SOPs with the exceptions summarized in **Table H-10**. The results for the noncompliance metals were qualified in accordance with the Region 2 SOP IIW-2.

4.4.6 ICP Linear Range

All inorganic concentrations used as sample results were within the ICP linear ranges.

4.4.7 ICP Interference Check

All ICP interference check sample results were with the QC limits (i.e., 80-120%).

4.4.8 Sample Percentage of Solids

All samples have percentage of solids greater than or at 50% except 17EXPR-A4-01 and 17EXPR-A4-02. 17EXPR-A4-01 and 17EXPR-A4-02 have percentage of solids at 41% and 46%, respectively (**Table H-11**). All results for 17EXPR-A4-01 and 17EXPR-A4-02 were qualified (detects were qualified J and nondetects were qualified UJ).

4.4.9 Multiple Analysis Results

As discussed in Section 1, results listed in Table H-2 were rejected either due to the spike results or field/laboratory duplicate results. With the exception of 16EXSW-D8-01 and 16EXSW-D8-05, all these samples have the affected fractions reanalyzed; lead for 16EXSW-D8-05 was also reanalyzed. The reanalysis results were acceptable with the exception of the lead reanalysis results for samples in SDG A07-8169. Therefore, the reanalysis results were used to represent the sample concentrations for all the reanalysis samples except the samples in SDG A07-8169/A07-8673.

For samples in SDG A07-8169/A07-8673, the laboratory duplicate results for lead for both the original analysis and the reanalysis were above 120% (as shown in **Table II-7**). According to the laboratory observation, the sample used for duplicate analysis had large chunks of material mixed in with the soil. Therefore, the laboratory duplicate results caused by matrix heterogeneous might not truly represent the laboratory precision of the analysis. In fact, comparing the reanalysis results in

SDG A07-8673 and the original results in A07-8169 indicates that the laboratory precision is acceptable (i.e., all RPDs within 120%). Further, the laboratory duplicate analysis performed for 16EXSW-D8-02 spike sample had a RPD within the 35% RPD QC limit for lead. As a conservative step, the greater values from the two analyses (i.e., the original analysis and the reanalysis) were used to represent the Pb results for all samples and all results were qualified J.

16EXPR-G5-01 was analyzed for 8-metal analysis first time in SDG A07-3433; a lead reanalysis was conducted for 16EXPR-G5-01 and MS/MSD with SDG A07-4776. Further a Cu and Pb reanalysis for all samples in SDG A07-3433 (including 16EXPR-G5-01) was conducted and the Cu and Pb results presented in this SDG (SDG A07-5309) were used for all these samples.

17EXPR-F6-01 was analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc first time in SDG A07-3430; a zinc reanalysis was conducted for 17EXPR-F6-01 and MS/MSD with SDG A07-4776. Further a Zn reanalysis for all samples in SDG A07-3430 (including 17EXPR-F6-01) was conducted and the Zn results presented in this SDG (SDG A07-5307) were used for all these samples.

Attachment 1

Definition of Data Qualifiers

P: PIT Projects' Seneca PBC II SEAD-16_17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Qualifier docP: PIT Projects Seneca PBC II SEAD-16_17 Construction Completion Report Draft Final Appendices Appendix H - Data Validation Qualifier doc

DEFINITIONS OF DATA QUALIFIERS – ORGANICS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

P: P11 Projects Seneca PBC II SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Qualifier.docP-P1F Projects Seneca PBC II SEAD-16_17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Qualifier.doc

DEFINITIONS OF DATA QUALIFIERS – INORGANICS

- J The associated value is an estimated quantity.
- U The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- UJ The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
- R The data was unusable. (Note: Analyte may or may not be present.).

P: PH Projects Seneca PBC If SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Qualifier docP: PIT Projects Seneca PBC II SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Qualifier.doc

Table H-1 Summary of Validated Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-3429	17EXPR-B3-01	Soil		
	17EXPR-B3-02	Soil		
	17EXPR-B6-01	Soil		
	17EXPR-C3-01	Soil		
	17EXPR-D3-01	Soil		
	17EXPR-D7-01	Soil		
	17EXPR-D7-02	Soil	Sb, As, Cd, Cu,	
	17EXPR-D8-01	Soil	Pb, Hg, Tl, and	2.3°C
	17EXPR-E8-01	Soil	Zn	2.5 C
	17EXPR-F2-01	Soil	Zn	
	17EXPR-F5-01	Soil]	
	17EXPR-F7-01	Soil]	
	17EXPR-F8-01	Soil		
	17EXPR-G2-01	Soil		
	17EXPR-G4-01	Soil		
	17EXPR-G5-01	Soil		
A07-3430	17EXPR-A4-01	Soil		
	17EXPR-A4-02	Soil		
	17EXPR-A5-01	Soil		
	17EXPR-B7-01	Soil	Sb, As, Cd, Cu,	
	17EXPR-B8-01	Soil	Pb, Hg, Tl, and	2.3°C
	17EXPR-C7-01	Soil	Zn	
	17EXPR-C7-02	Soil		
	17EXPR-F6-01	Soil] [
	17EXPR-F6-02	Soil		
A07-3432	16EXPR-B10-01	Soil		
	16EXPR-B10-02	Soil] [
	16EXPR-B6-01	Soil]	
	16EXPR-B7-01	Soil		
	16EXPR-B8-01	Soil		
	16EXPR-C10-01	Soil		
	16EXPR-C4-01	Soil	Sb. As, Cd, Cu,	
	16EXPR-C5-01	Soil	Pb. Hg. Tl, and	2.3°C
	16EXPR-C6-01	Soil	- Zn	Level V
	16EXPR-D4-01	Soil	2.11	
	16EXPR-D4-02	Soil		
	16EXPR-E9-01	Soil		
	16EXPR-F3-01	Soil		
	16EXPR-F3-02	Soil		
	16EXPR-F8-01	Soil] [
	16EXPR-F9-01	Soil		

P: PET Projects Seneca PBC II SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Table II-1.xb21 2008

Table H-1Summary of Validated DataConstruction Completion Report for SEAD-16 and SEAD-17Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-3433	16EXPR-B9-01	Soil		
	16EXPR-B9-02	Soil	Sb, As, Cd, Cu,	
	16EXPR-E13-01	Soil	- Pb, Hg, Tl, and Zn	
	16EXPR-E3-01	Soil		
	16EXPR-G2-01	Soil	2.11	
	16EXPR-G3-01	Soil		
	16EXPR-G4-01	Soil	cPAHs, Sb, As,	2.3°C
	16EXPR-G5-01	Soil	Cd, Cu, Pb, Hg,	
	16EXPR-G5-02	Soil	Tl, and Zn	
	16EXPR-H3-01	Soil	- Sb, As, Cd, Cu,	
	16EXPR-H3-02	Soil		
	16EXPR-13-01	Soil	Pb, IIg, Tl, and	
	16EXPR-13-02	Soil	– Zn	
A07-4776	16EXPR-A8-01	Soil	Ch An Ch Cu	
	16EXPR-A8-02	Soil	- Sb, As, Cd, Cu,	
	16EXPR-A9-01	Soil	Pb, Hg, Tl, and	
	16EXPR-B5-01	Soil	– Zn	
	16EXPR-G5-01	Soil	Pb reanalysis	
]	16EXPR-H4-01	Soil		
	16EXPR-I4-01	Soil		
	17EXPR-A3-01	Soil		
	17EXPR-A3-02	Soil	Sb, As, Cd, Cu,	2.0°C
	17EXPR-A7-01	Soil	Pb, Hg, Tl, and	2.0 C
	17EXPR-B7-02	Soil	Zn	
	17EXPR-C3-02	Soil		
	17EXPR-E2-01	Soil		
	17EXPR-E2-02	Soil		
	17EXPR-F6-01	Soil	Zn reanalysis	
	17EXPR-F7-02	Soil	Sb, As, Cd, Cu,	
	17EXPR-F8-02	Soil	Pb, Hg, Tl, and	
	17EXPR-G5-02	Soil	Zn	
Λ07-5307	17EXPR-A4-01	Soil		
	17EXPR-A4-02	Soil		
of SDG A07-	17EXPR-A5-01	Soil		
3430)	17EXPR-B7-01	Soil		
	17EXPR-B8-01	Soil	Zn reanalysis	2.3°C
	17EXPR-C7-01	Soil		
	17EXPR-C7-02	Soil		
	17EXPR-F6-01	Soil		
	17EXPR-F6-02	Soil		

P: PET Projects Seneca PBC II SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix II - Data Validation Table II-UM&L 2008

Table H-1					
Summary of Validated Data					
Construction Completion Report for SEAD-16 and SEAD-17					
Seneca Army Depot Activity					

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-5309	16EXPR-B9-01	Soil		
(Cu and Pb	16EXPR-B9-02	Soil	7	
	16EXPR-E13-01	Soil		
SDG A07-	16EXPR-E3-01	Soil	1	
3433)	16EXPR-G2-01	Soil		
	16EXPR-G3-01	Soil	Cu and Pb	
	16EXPR-G4-01	Soil		2.3°C
	16EXPR-G5-01	Soil	reanalyses	
	16EXPR-G5-02	Soil		
	16EXPR-H3-01	Soil		
	16EXPR-H3-02	Soil		
	16EXPR-I3-01	Soil		
	16EXPR-I3-02	Soil		
A07-7847	17EX00100	Water	ĺ	
	17EXFL-A4-01	Soil		
	17EXFL-A5-01	Soil		
	17EXFL-B3-01	Soil		
	17EXFL-B4-01	Soil		
	17EXFL-B5-01	Soil	Sb, As, Cd, Cu,	
	17EXFL-C4-01	Soil	Pb, Hg, Tl, and	2.0°C
	17EXFL-D4-01	Soil	Zn	
	17EXPR-A4-03	Soil		
	17EXPR-C8-01	Soil		
	17EXPR-D2-01	Soil		
	17EXPR-G3-01	Soil		
	17EXPR-G7-01	Soil		
A07-7848	17EXFL-C5-01	Soil		
	17EXFL-C7-01	Soil		
	17EXFL-D3-01	Soil		
	17EXFL-D7-01	Soil		
	17EXFL-D8-01	Soil		
	17EXFL-E2-01	Soil		
	17EXFL-E3-01	Soil	_	
	17EXFL-E7-01	Soil		
	17EXFL-E8-01	Soil	Sb, As, Cd, Cu,	
	17EXFL-F2-01	Soil	Pb. Hg, Tl, and	2.0°C
	17EXFL-F3-01	Soil	Zn	
	17EXFL-F4-01	Soil	_	
	17EXFL-F6-01	Soil		
	17EXFL-F7-01	Soil		
	17EXFL-F8-01	Soil	_	
	17EXFL-G3-01	Soil		
	17EXFL-G3-02	Soil	_	
	17EXFL-G4-01	Soil	_	
	17EXFL-G5-01	Soil		

P. PH Projects Seneca PBC II SEAD-16-17 Construction Completion Report Draft Final Appendices Appendix H - Data Validation Table H-1.3821 2008

Table H-1Summary of Validated DataConstruction Completion Report for SEAD-16 and SEAD-17Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-8159	17EXFL-A4-02	Soil		
	17EXFL-B6-01	Soil		
	17EXFL-B7-01	Soil		
	17EXFL-B7-02	Soil		
	17EXFL-C6-01	Soil		
	17EXFL-D5-01	Soil		
	17EXFL-D6-01	Soil	Sb, As, Cd, Cu,	
	17EXFL-E5-01	Soil	Pb, Hg, Tl, and	4.8°C
	17EXFL-E6-01	Soil	Zn	
	17EXFL-F5-01	Soil		
	17EXFL-F7-02	Soil		
	17EXFL-G3-03	Soil		
	17EXPR-C8-02	Soil		
	17EXPR-D2-02	Soil		
	EX00101	Water		
A07-8164	16EXFL-D4-01	Soil		
	16EXFL-D5-01	Soil		
	16EXFL-D6-01	Soil		
	16EXFL-D7-01	Soil	Sb. As. Cd, Cu,	
	16EXFL-D8-01	Soil	Pb. Hg, Tl, and	
	16EXFL-D9-01	Soil	Zn	
	16EXFL-E4-01	Soil		
	16EXFL-E5-01	Soil		
	16EXFL-E6-01	Soil		
	16EXFL-G5-01	Soil	cPAHs. Sb. As,	4.8°C
			Cd. Cu, Pb, Hg,	
			TI, and Zn	
	16EXFL-H3-01	Soil		
	16EXPR-B6-02	Soil		
	16EXPR-C10-02	Soil	Sb, As, Cd. Cu.	
	16EXPR-E4-01	Soil	Pb. Hg. Tl. and	
	16EXPR-F9-02	Soil	Zn	
	16EXPR-G3-02	Soil		
	16EXSW-D8-01	Soil		

P: PTF Projects Seneca PBC/II/SEAD-16/17 Construction Completion Report Draft Final Appendices Appendix H - Data Validation Table H-LxB2E 2008

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-8166	16EXFL-A8-01	Soil		
	16EXFL-B10-01	Soil		
	16EXFL-B10-02	Soil		
	16EXFL-B8-02	Soil		
	16EXFL-B8-03	Soil		
	16EXFL-E12-01	Soil		
	16EXFL-E13-01	Soil	Sb, As, Cd, Cu,	
	16EXFL-E8-01	Soil	Pb, Hg, Tl, and	
	16EXFL-E9-01	Soil	Zn	4.8°C
	16EXFL-F3-01	Soil		4.8 C
	16EXFL-F3-02	Soil		
	16EXFL-F4-01	Soil		
	16EXFL-G3-01	Soil		
	16EXFL-J1-01	Soil		
	16EXFL-K1-01	Soil		
	16EXPR-G5-03	Soil	cPAHs, Sb, As,	
	1/EVDD CC A4	0.1	- Cd, Cu, Pb, Hg,	
	16EXPR-G5-04	Soil	Tl, and Zn	
A07-8169	16EXSW-D8-05	Soil		
	16EXSW-D8-02	Soil		
	16EXSW-D8-03	Soil		
	16EXSW-D8-04	Soil		
F	16EXSW-E5-01	Soil		
	16EXSW-E5-02	Soil		
	16EXSW-E5-03	Soil		
	16EXSW-E5-04	Soil	Sb, As, Cd, Cu,	
	16EXPR-12-01	Soil	- Pb, Hg, Tl, and	4.8°C
	16EXFL-B6-01	Soil		4.0 C
	16EXFL-B7-01	Soil	7.0	
	16EXFL-B8-01	Soil		
	16EXFL-B9-01	Soil	_	
	16EXFL-C5-01	Soil		
	16EXFL-C6-01	Soil		
	16EXFL-C7-01	Soil		
	16EXFL-C8-01	Soil		
	16EXFL-C9-01	Soil		
A07-8507	16EXFL-D8-02	Soil		
	16EXSW-D8-06	Soil	Sb. As. Cd. Cu.	
	16EXSW-D8-07	Soil	Pb, Hg. Tl, and	4°C
	17EXFL-E5-02	Soil	Zn	
	17EXFL-F2-02	Soil		

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-8673	16EXSW-D8-05	Soil		
(Pb reanalysis	16EXSW-D8-02	Soil		
for samples in	16EXSW-D8-03	Soil		
SDG A07-	16EXSW-D8-04	Soil		
8169)	16EXSW-E5-01	Soil		
	16EXSW-E5-02	Soil		
	16EXSW-E5-03	Soil		
	16EXSW-E5-04	Soil		
	16EXPR-J2-01	Soil	Pb reanalysis	4.8°C
	16EXFL-B6-01	Soil	FUTCALIATYSIS	4.8 C
	16EXFL-B7-01	Soil		
	16EXFL-B8-01	Soil		
	16EXFL-B9-01	Soil		
	16EXFL-C5-01	Soil		
	16EXFL-C6-01	Soil]	
	16EXFL-C7-01	Soil] [
	16EXFL-C8-01	Soil		
	16EXFL-C9-01	Soil		
A07-8686	16EXFL-C10-01	Soil		
	16EXFL-C9-02	Soil]	
	16EXFL-F9-01	Soil]	
	16EXFL-F9-02	Soil	Sb. As, Cd, Cu,	
	16EXPR-C10-03	Soil	- Pb. Hg. Tl. and	2.0°C
	16EXPR-F9-03	Soil	Zn	2.0 C
	17EXFL-D2-01	Soil		
	17EXFL-D6-02	Soil]	
	17EXFL-G3-04	Soil		
	17EXPR-D2-03	Soil		
A07-8747	16EXFL-D8-02	Soil		
(Hg and Pb	16EXSW-D8-06	Soil		
reanalysis for samples in	16EXSW-D8-07	Soil	Hg and Pb	4.0°C
SDG A07-	17EXFL-E5-02	Soil	reanalyses	
8507)	17EXFL-F2-02	Soil	1	

Only validated data listed except for samples with Water matrix, which were not validated.

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Table H-2 Summary of Nonusuable Analytical Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Sample	SDG	Nonusuable	Reason
		Fraction	
17EXPR-A4-01	A07-3430	Zn	spike recoveries >200%
17EXPR-A4-02			or <0%
17EXPR-A5-01			
17EXPR-B7-01			
17EXPR-B8-01			
17EXPR-C7-01			
17EXPR-C7-02			
17EXPR-F6-01			
17FXPR-F6-02			
16EXPR-B9-01	A07-3433	Pb detects	spike recoveries >200%
16EXPR-B9-02		(Pb detected in all	
16EXPR-E13-01	ļ	samples in the	
16EXPR-E3-01		SDG)	
16EXPR-G2-01			
16EXPR-G3-01			
16EXPR-G4-01			
16EXPR-G5-01			
16EXPR-G5-02			
16EXPR-H3-01			
16EXPR-H3-02			
16EXPR-I3-01			
16FYPR 13_02			
16EXPR-G5-01	A07-3433	Cu	field duplicate results
16EXPR-G5-02			%RPD >120%
16EXSW-D8-01	A07-8164	Cd, Cu, Pb. Hg,	field duplicate results
		and Zn	%RPDs >120%
16EXSW-D8-05	A07-8169	Cd. Cu, Pb, Hg,	field duplicate results
		and Zn	%RPDs >120%

Table H-2Summary of Nonusuable Analytical ResultsConstruction Completion Report for SEAD-16 and SEAD-17Seneca Army Depot Activity

Sample	SDG	Nonusuable	Reason
		Fraction	
16EXSW-D8-05	A07-8169	Pb	laboratory duplicate
16EXSW-D8-02			%RPDs >120%
16EXSW-D8-03			
16EXSW-D8-04			
16EXSW-E5-01			
16EXSW-E5-02			
16EXSW-E5-03			
16EXSW-E5-04			
16EXPR-12-01			
16EXFL-B6-01			
16EXFL-B7-01			
16EXFL-B8-01			
16EXFL-B9-01			
16EXFL-C5-01			
16EXFL-C6-01			
16EXFL-C7-01			
16EXFL-C8-01			
1/17/17/ 00 01			11
16EXFL-D8-02	Λ07-8507	Pb and Hg	spike recoveries >200%;
16EXSW-D8-06			laboratory duplicate
16EXSW-D8-07			%RPDs >120%
17EXFL-E5-02			
17EXFL-F2-02			

Table II-3 Summary of Spike Analysis Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Spiked Sample	Noncompliance	Sample Affected	Action
A07-3429	17EXPR-B3-01	Spike recoveries for Sb below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ.
A07-3430	17EXPR-F6-01	Spike recoveries for Sb below 75%; spike recoveries for Cu below 75% or above 125%; spike recoveries for Zn below 0% or above 200% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb and Cu results were qualified (detects were qualified J and nondetects were qualified UJ) and all Zn results were qualified R.
A07-3432	16EXPR-F3-01	Spike recovery for Sb and Zn below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb and Zn detects were qualified J and all nondetects were qualified UJ.
A07-3433	16EXPR-G5-01	Spike recoveries for Sb below 75% while spike recoveries for Pb above 200% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ. All Pb detects were qualified R.
A07-4776	17EXPR-E2-01	Spike recoveries for Sb below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ.
	16EXPR-G5-01RE1	Spike recoveries for Zn above 125% (145% and 170%) for this sample from SDG A07-3433	NA	As the sample is from a different SDG, no action was taken based on these results for samples in this SDG.
	17EXPR-F6-01RE1	Spike recoveries for Zn either above 125% or below 0% for this sample from SDG A07-3430	NA	As the sample is from a different SDG, no action was taken based on these results for samples in this SDG.
A07-5307	17EXPR-F6-01RE2	Spike recovery for Zn above 125% for MSD while sample concentrations below 4x spike levels.	All soil samples in the SDG	Zn detects were qualified J.
A07-5309	16EXPR-G5-01RE2		All soil samples in the SDG	All Pb detects were qualified J and Pb nondetects were qualified UJ.
A07-7848	17EXFL-D3-01	Spike recoveries for Sb and Zn below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb and Zn detects were qualified J and all nondetects were qualified UJ.
Λ07-8159	17EXFL-B6-01	Spike recoveries for Sb, As. Cd, Cu, and Tl below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb, As, Cd, Cu, and Tl results were qualified (detects were qualified J and pondetects were qualified UJ).
A07-8164	16EXFL-D8-01	Spike recoveries for Sb, As. Cd. and TI below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb, As, Cd, and TI results were qualified (detects were qualified J and nondetects were qualified UJ)
A07-8166	16FXFL-E8-01		All soil samples in the SDG	All results for the affected metals were qualified (detects were qualified J and mondetects were qualified UJ).
A07-8169	16EXSW-D8-02	Spike recovery for Cu above 125% while sample concentration below 4x spike levels.	All soil samples in the SDG All soil samples in the SDG	All Cu detects were qualified J (Cu was detected in all samples in this SDG). All Sb and Zn results were qualified (detects
A07-8507		spike recoveries for Pb and Hg above 200% while sample concentration below 4x spike	All sou samples in the SDG	were qualified J and nondetects were qualified UJ) and all Pb and Hg detects were
A07-8686	16EXFL-D8-02	levels. Spike recoveries for Sb below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb results were qualified (detects were qualified J and nondetects were qualified U).

Table H-4 Summary of Laboratory Control Sample Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
A07-3429	LCS for Sb above 120% at 135%	All soil samples in the SDG	All Sb detects were qualified J.
A07-3430	LCS for Sb above 120% at 134%	All soil samples in the SDG	All Sb detects were qualified J.
A07-7847	LCS for Sb above 120% at 163%	All soil samples in the SDG	All Sb detects were qualified J.
A07-7848	LCS for Sb above 120% at 184%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8159	LCS for Sb above 120% at 200%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8164	LCS for Sb above 120% at 184%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8166	LCS for Sb, As, Pb, Tl, and Zn above 120%.	All soil samples in the SDG	All Sb, As, Pb, Tl, and Zn detects were
			qualified J.
A07-8169	LCS for Sb above 120% at 166%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8507	LCS for Sb above 120% at 179%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8686	LCS for Sb above 120% at 192% and 171%.	All soil samples in the SDG	All Sb detects were qualified J.

Table H-5 Summary of Blank Noncompliance Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
A07-3429, A07-3430	Zn	Preparation Blank	All samples in the affected SDGs.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-3432	Cu	ССВ	16EXPR-F8-01, 16EXPR-F9-01, 16EXPR- E9-01, 16EXPR-B10-01, 16EXPR-B10-02, 16EXPR-C10-01, and 16EXPR-B6-01		All Cu results > RLs; therefore, no action was taken.
	Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-3433	Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-4776	As	ICB	16EXPR-14-01, 16EXPR-H4-01, 16EXPR- B5-01, 16EXPR-A8-01, 16EXPR-A8-02, 16EXPR-A9-01, 17EXPR-G5-02, 17EXPR- F7-02, and 17EXPR-F8-02	<rl< td=""><td>All results were above RLs for affected metals; therefore, no action was taken.</td></rl<>	All results were above RLs for affected metals; therefore, no action was taken.
	Cd and Cu	ICB	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR- A3-01, 17EXPR-A3-02, 17EXPR-C3-02, 17EXPR-E2-01, 17EXPR-E2-02, and 17EXPR-F6-01	<rl< td=""><td>All results were above RLs for affected metals; therefore, no action was taken.</td></rl<>	All results were above RLs for affected metals; therefore, no action was taken.
	Sb	ССВ	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR- A3-01, 17EXPR-A3-02, 17EXPR-C3-02, and 17EXPR-E2-01	<rl< td=""><td>All results detected below RLs in the affected samples were qualified U with the respective RLs.</td></rl<>	All results detected below RLs in the affected samples were qualified U with the respective RLs.
	Cu	ССВ	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR- A3-01, 17EXPR-A3-02, 17EXPR-C3-02, 17EXPR-E2-01, 17EXPR-E2-02, and 17EXPR-F6-01	<rl< td=""><td>All results were above RLs for Cu; therefore, no action was taken.</td></rl<>	All results were above RLs for Cu; therefore, no action was taken.
	Pb	ССВ	17EXPR-A7-01, 17EXPR-A3-01, 17EXPR A3-02, 17EXPR-C3-02, 17EXPR-E2-01, and 17EXPR-E2-02	<rl< td=""><td>All results were above RLs for Pb; therefore, no action was taken.</td></rl<>	All results were above RLs for Pb; therefore, no action was taken.
A07-7847	Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-7848	Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-8159	Cu	ССВ	All samples in this SDG.	< <u>RI</u> _	All Cu results > RLs; therefore, no action was taken.
	Cu and Zn	Preparation Blank	All samples in this SDG.	~ RL	All Cu and Zn results > RLs; therefore, no action was taken.
A07-8164	Zn	Preparation Blank	All samples in this SDG.	< <u>RL</u>	All Zn results > RLs; therefore, no action was taken.
A07-8166	Zn	Preparation Blank	All samples in this SDG.	RL	All Zn results > RLs: therefore, no action was taken.

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Table H-5 Summary of Blank Noncompliance Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
A07-8169	Sb	ССВ	16EXFL-B6-01, 16EXFL-B7-01, 16EXFL- B8-01, 16EXFL-B9-01, and 1616EXFL-C5 01	<rl< td=""><td>All Sb results for the affected samples were changed to soilds RL with U</td></rl<>	All Sb results for the affected samples were changed to soilds RL with U
	Cu and Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Cu and Zn results > RLs; therefore, no action was taken.</td></rl<>	All Cu and Zn results > RLs; therefore, no action was taken.
A07-8507	Zn	Preparation Blank	All samples in this SDG.	<rl< td=""><td>All Zn results > RLs; therefore, no action was taken.</td></rl<>	All Zn results > RLs; therefore, no action was taken.
A07-8686	Cd	ІСВ	16EXFL-C9-02, 16EXFL-C10-01, 16EXFL-C10-03, 16EXFL-F9-02, 16EXFL F9-03, 17EXFL-D6-02, 16EXFL-G3-04. 16EXFL-D2-01, and 16EXFL-D2-03	<rl< td=""><td>All Cd results > RLs; therefore, no action was taken.</td></rl<>	All Cd results > RLs; therefore, no action was taken.
	Cu	ССВ	16EXFL-C9-02, 16EXFL-C10-01, 16EXFL-C10-03, 16EXFL-F9-02, 16EXFL F9-03, 17EXFL-D6-02, 16EXFL-G3-04, 16EXFL-D2-01, and 16EXFL-D2-03	<rl< td=""><td>All Cu results > RLs; therefore, no action was taken.</td></rl<>	All Cu results > RLs; therefore, no action was taken.

Table H-6 List of Parent/Field Duplicate Samples Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Parent Sample	Field Duplicate
A07-3429	17EXPR-B3-01	17EXPR-B3-02
A07-3430/A07-5307 (reanalysis of Zn)	17EXPR-F6-01	17EXPR-F6-02
A07-3432	16EXPR-F3-01	16EXPR-F3-02
A07-3433/A07-5309 (reanalysis for Cu and Pb)	16EXPR-G5-01	16EXPR-G5-02 ¹
A07-4776	17EXPR-E2-01	17EXPR-E2-02
A07-7848	17EXFL-G3-01	17EXFL-G3-02
A07-8159	17EXFL-B7-01	17EXFL-B7-02
A07-8164/8169/A07-8673 (reanalysis of Pb for A07-8169)	16EXSW-D8-01	16EXSW-D8-05
	16EXPR-G5-03	16EXPR-G5-04 1
A07-8166	16EXFL-F3-01	16EXFL-F3-02
	16EXFL-B10-01	16EXFL-B10-02
A07-8507/A07-8747		
(Hg and Pb reanalysis for samples in SDG A07-8507)	16EXSW-D8-06	16EXSW-D8-07
A07-8686	16EXFL-F9-01	16EXFL-F9-02

Notes:

Unless otherwise specified, duplicate analysis was conducted for 8 metals:

antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc.

1. cPAH and 8-metal analyses were conducted.

Table H-7 Summary of Noncompliance Results for Parent/Field Duplicate Samples Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
		Field Duplicate	2
17EXPR-F6-01/17EXPR-F6-02	A07-3430	Cd, Cu, Pb, and Zn RPDs above 35%	Associated Results qualified J for the duplicate pair
16EXPR-F3-01/16EXPR-F3-02	A07-3432	Pb RPD above 35%	Associated Results qualified J for the duplicate pair
16EXPR-G5-01/16EXPR-G5-02	A07-3433	Cd, Pb, and Zn RPDs >35%; Cu RPD>120%	Cd, Pb, and Zn results for the duplicate pair were qualified J and Cu results for the duplicate pair were qualified R.
17EXPR-F6-01RE/17EXPR-F6- D2RE	A07-5307	Zn RPD>35% at 39%	All results for the referenced analytes were qualified J for the duplicate samples.
IGEXPR-G5-01RE/16EXPR-G5- D2RE	A07-5309	Pb RPD>35% at 39%	Associated Results qualified J for the duplicate pair
17EXFL-G3-01/17EXFL-G3-02	A07-7848	Cd, Cu, Pb, and Zn RPDs above 35% but below 120%	Associated Results qualified J for the duplicate pair
17EXFL-B7-01/17EXFL-B7-02	A07-8159	Cd absolute difference above 2RL but below 4RL while both results <5RL.	Associated Results qualified J for the duplicate pair
16EXSW-D8-01/16EXSW-D8-05	A07- 8164/A07- 8169	Sb and As results <5RLs and absolute difference >2RLs but below 4RLs; Cd, Cu, Pb, Hg, and Zn RPDs>120% while both results >5RLs or absolute difference>4RLs while one or both concentrations<5RLs.	Sb and As results were qualified J and Cd, Cu, Pb, Hg, and Zn results for the duplicate pair were rejected.
16EXFL-F3-01/16EXFL-F3-02	A07-8166	One Hg result <5RL and absolute difference >2RLs but below 4RLs.	Hg results were qualified J for the duplicate pair.
16EXSW-D8-06/16EXSW-D8-07	A07-8507	Pb RPD above 35% but below 120%.	Pb results were qualified J for the duplicate pair.

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Table H-7 Summary of Noncompliance Results for Parent/Field Duplicate Samples Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
		Laboratory Dup	olicate
17EXPR-B3-01spike	A07-3429	Pb and Zn RPDs above 35% (63% and 39%, respectively)	All Pb and Zn results >RLs; therefore all Pb and Zn results in the SDG were qualified J.
17EXPR-F6-01spike	A07-3430	Pb and Zn RPDs above 35% (82% and 68%, respectively)	All Pb and Zn results >RLs; therefore all Pb and Zn results in the SDG were qualified J.
16EXPR-G5-01spike	A07-3433	Cu and Pb PRDs above 35% (41% and 88%, respectively)	All Cu and Pb results > RLs; therefore, all Cu and Pb results in the SDG were qualified J.
17EXPR-E2-01	A07-4776	Cd RPD above 35% (42%)	All Cd detects>RLs in this SDG were qualified J.
17EXFL-B6-01spike	A07-8159	Pb and Zn RPDs above 35% but below 120%.	All Pb and Zn detects>RLs in this SDG were qualified J.
16EXSW-D8-02spike	A07-8169	Pb RPD above 120%.	All Pb results > RLs in this SDG and therefore all Pb results were qualified R.
16EXFL-D8-02spike	A07-8507	Pb and Hg RPDs above 120%.	All Pb and Hg results in this SDG were qualified R.
16EXSW-D8-02	A07-8673	Pb RPD above 120% (134%).	The sample used for duplicate analysis have large chunks of material mixed in with the soil. Therefore, the laboratory duplicate results caused by matrix heterogeneous may not truly represent the laboratory precision of the analysis. In fact, comparing the reanalysis results in this SDG and original results in A07-8169 indicates that the laboratory precision is acceptable (i.e., all RPDs within 120%). Further, the lab duplicate analysis performed for 16EXSW-D8-02 spike sample had a RPD within the 35% RPD QC limit for lead. As a conservative step, the greater values from these two analyses were used to represent the Pb results for all samples and all results were qualified J.
16EXFL-D8-02spike	A07-8742	Hg RPD above 35% (37%).	All Hg results in this SDG were >RLs and therefore all Hg results were qualified J.

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Table H-8 Summary of Calibration Noncompliance Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
A07-	%RSDs of 2,4,6-tribromophenol (surrogate)	IC 03/07/07 09:43-11:44	All soil samples in the SDG	No action as all surrogate recoveries were
3433	above 15% limit (17.5%)			within the limits.

IC = Initial Calibration

%RSD - Percent Relative Standard Deviation

Table H-9 Summary of CRQL Standard Check Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
A07-4776	Hg CRQL standard recoveries below limit of 70%	All samples in this SDG	Hg results for 16EXPR-H4-01, 16EXPR-I4-01, 17EXPR-B7-02,
	(60%).		17EXPR-C3-02. 17EXPR-E2-01, 17EXPR-E2-02, 17EXPR-F7-
			02, 17EXPR-F8-02, and 17EXPR-G5-02 were below 2CRQL
		;	and therefore were qualified J.
A07-7848	Zn CRQL standard recoveries above limits of 70-	All samples in this SDG	As all Zn results were above 2CRQL; no action was taken.
	130% (140%)		
A07-8169	Hg CRQL standard recovery below limits of 70-	All samples in this SDG	Hg results for 16EXFL-B6-01, 16EXFL-C7-01, 16EXFL-C9-01,
	130% (60%)		and 16EXSW-D8-03 were below 2CRQL and therefore were
	·		qualified J.
A07-8507	Hg CRQL standard recovery above limits of 70-	All samples in this SDG	All Hg results > 2CRQL; therefore, no action was taken.
	130% (135%)		

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Table H-10Summary of ICP Serial Dilution ResultsConstruction Completion Report for SEAD-16 and SEAD-17Seneca Army Depot Activity

SDG	Serial Dilution	Noncompliance	Sample Affected	Action
	Sample			
A07-3430	16EXPR-F3-01	%Ds for Cd and Zn above 10% with original	All soil samples in the SDG	All Cd and Zn results were qualified J as all
	1	concentrations > 50xMDLs		Cd and Zn raw results > aqueous MDLs.
A07-4776	17EXPR-E2-01	%Ds for Sb above 10% with original	All soil samples in the SDG	All Sb results were qualified J as all Sb raw
		concentrations > 50xMDLs		results > aqueous MDLs.
A07-5309	16EXPR-G5-01RE	%D for Pb above 10% with original	All soil samples in the SDG	All Pb results were qualified J as all Pb raw
		concentrations > 50xMDLs	· · · · · · · · · · · · · · · · · · ·	results > aqueous MDLs.
A()7-7848	17EXFL-D3-01	%D for Zn above 10% with original	All soil samples in the SDG	All Zn results were qualified J as all Zn raw
		concentrations > 50xMDLs		results > aqueous MDLs.
A07-8159	17EXFL-B6-01	%Ds for Cd, Cu, Pb, and Zn above 10% with	All soil samples in the SDG	All results were qualified J for the affected
		original concentrations > 50xMDLs		metals as all raw results > aqueous MDLs.
A07-8164	16EXFL-D8-01	%Ds for Pb and Zn above 10% with original	All soil samples in the SDG	All results were qualified J for the affected
	1	concentrations > 50xMDL		metals as all raw results > aqueous MDLs.
A07-8166	16EXFL-E8-01	%Ds for Cu and Zn above 10% with original	All soil samples in the SDG	All results were qualified J for the affected
	1	concentrations > 50xMDL		metals as all raw results > aqueous MDLs.
A07-87-17	16EXFL-D8-02	%D for Pb above 10% with original	All soil samples in the SDG	All Pb results were qualified J for this SDG
		concentrations > 50xMDL		as all Pb raw results > aqueous MDLs.

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Table H-11 Summary of Percentage of Solids Noncompliance Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

SDG	Samples with	% Solids	Action
	Noncompliance		
A07-3430	17EXPR-A4-01	41%	All results for the samples
	17EXPR-A4-02	46%	were qualified (detects were qualified J and nondetects were qualified UJ)

Table H-12 Split Sample Summary Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

				Parsons Sample	EPA Split Sample	
				Result	Result	
Sample Date	Time of Sample from COC	Parsons Sample ID	EPA Split Sample ID	(mg/kg)	(mg/kg)	%RPD
	F4 collected at 10:35, E4					
7/18/2007	collected at 12:50 on 7/19	16EXFL-F4-01	16EXFL-E4-01	247	466	61%
7/18/2007	10:20	16EXFL-G5-01	16EXFL-G5-01	86.1 J	121	34%
7/18/2007	10:47	16EXFL-B6-01	16EXFL-B6-01	16.6	16.6	0%
7 18/2007	11:01	16EXPR-C10-02	16EXPR-C10-01	776 J	1360	55%
7/18/2007	10:10	16EXPR-F9-02	16EXPR-F9-02	383 J	2940	154%
7/18/2007	9:00	17EXFL-A4-02	17EXFL-A4-02	21.5	21	2%
7'18/2007	9:37	17EXFL-F7-02	17EXFL-F7-02	14.8	20.9	34%
7/18/2007	9:23	17EXFL-G3-03	17EXFL-G3-02	606	2210	114%
7/18/2007	10:00	17EXPR-C8-02	17EXFL-C8-02	239	573	82%
7.18/2007	9:15	17EXPR-D2-02	17EXPR-D2-02	1240	506	84%

%RPD - Relative Percent Difference

P ·PTT Projects/Seneca PBC IT/SEAD-16_17/Construction Completion Report/Draft Final/Appendices/Appendix H - Data Validation/DataValidation_Table.xls/List of Split Samp IDs

5/21/2008

APPENDIX I

USEPA SPLIT DATA

Table I USEPA's Split Sample Analytical Results for Lead Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Summary of Split Samp	ole Analytical Results for Lead – SEAD-16
Sample ID	USEPA Analytical Results (mg/kg)
16EXFL-E4-01	466
16EXFL-G5-01	121
16EXFL-B6-01	16.6 (15.6 - duplicate)
16EXPR-C10-02	1360
16EXPR-F9-02	2940

Summary of Split Samp	e Analytical Results for Lead – SEAD-17		
Sample ID	USEPA Analytical Results (mg/kg)		
17EXFL-A4-02	21		
17EXFL-F7-02	20.9		
17EXFL-G3-03 *	2,210		
17EXPR-C8-02	573		
17EXPR-D2-02	2,300		
* USEPA records list sample	ID as 17EXFL-G3-02.		

<u>Note</u>: These results were transmitted by email from the USEPA by Julio Vazquez to Todd Heino (Parsons) on July 31, 2007.

P::PIT^PProjects^{Seneca} PBC II^{SEAD-16_17^C Construction Completion Report^DDraft Final^{Appendices}^{Appendix I - USEPA Split Data^{AppenDIX I - usepa split data.doe}}}

APPENDIX J

SUMP WATER RESULTS

Table J-1 Sump Water Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Location	SEAD-16
Туре	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Value (Q)
Volatile Organic Compounds		
1,1,1-Trichleroethane	UG/L	1 U
1,1,2,2-Tetrachloroethane	UG/L	I U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	1 U
1.1,2-Trichloroethane	UG/L	I U
1,1-Dichloroethane	UG/L	1 U
1,1-Dichloroethene	UG/L	1 U
1,2,3-Trichlorobenzene	UG/L	10
1,2,4-Trichlorobenzene	UG/L	ΙŪ
1,2-Dibromo-3-chloropropane	UG/L	1 U
1.2-Dibromoethane	UG/L	ΙŪ
1,2-Dichlorobenzene	UG/L	i U
1,2-Dichloroethane	UG/L	EU
1,2-Dichloropropane	UG/L	I U
1,3-Dichlorobenzene	UG/L	I U
1,4-Dichlorobenzene	UG/L	10
Acetone	UG/L	5 U
Benzene	UG/L	1 U
Bromochloromethane	UG/1.	ιŰ
Bromodichloromethane	UG/L	10
Bromoform	UG/L	1 U
Carbon disulfide	UG/L	1 U
Carbon tetrachloride	UG/L	10
Chlorobenzene	UG/L	1.0
Chlorodibromomethane	UG/L	I U
Chloroethane	UG/L	ΙU
Chloroform	UG/L	1 U
Cis-1,2-Dichloroethene	UG/L	I U
Cis-1,3-Dichloropropene	UG/L	10
Cyclohexane	UG/L	ΙU
Dichlorodifluoromethane	UG/L	1.0
Ethyl benzene	UG/L	1 U
Isopropy lbenzene	UG/L	I U
Methyl Acetate	UG/L	I U
Methyl Tertbutyl Ether	UG/L	I U
Methyl bromide	UG/L	1 U
Methyl butyl ketone	UG/L	5 U
Methyl chloride	UG/L	ΙU
Methyl cyclohexane	UG/L	E U
Methyl ethyl ketone	UG/L	5 U
Methyl isobutyl ketone	UG/L	5 U
Methylene chloride	UG/L	IU
Styrene	UG/L	I U
Tetrachloroethene	UGL	1 U
loluene	UG/I	E U
Total Xylenes	UG L	3 U
Trans-1.2-Dichloroethene	UG/L	I U
Trans-1.3-Dichloropropene	UG4L	1 U
Trichloroethene	UG/L	1.0
Enchlorofluoromethane	UG/I	+ U
Vinyl chloride	UG-L	11
Semivolatile Organic Compounds		
1.1'-Biphenyt	UG.L	5 U
2,4,5-Trichlorophenol	UGT	5 U
2.4.6-Trichlorophenol	UG1	5.0
2.4-Dichlorophenol	UGL	5 U
2.4-Dimethylphenol	UGI	5 U
2,4-Dimitrophenol	UG L	νU
2.4-Dimitrotoluenc	UGI	5 U
2,6-Dimitrotoluenc	UGT	5 U

Table J-1 Sump Water Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Location	SEAD-16
Туре	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

-ChlorophenolUG/L-MethylpaphthaleneUG/L-MethylphenolUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L9-Nitroaniline-NitroanilineUG/L9-Nitroaniline0UG/L9-Nitroaniline9-Nitroaniline9-Bromophenyl phenyl ether0UG/L5-Chloro-3-methylphenol0UG/L5-Chloroaniline0UG/L5-Nitroaniline0UG/L9-Nitroaniline0UG/L9-Nitrophenol0UG/L9-Nitrophenol0UG/L5-Nitrophenol0UG/L5-Nitrophenol0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L5-Nitroaniline0UG/L </th <th>U U U U U U U U U</th>	U U U U U U U U U
-ChlorophenolUG/L-MethylaphthaleneUG/L-MethylaphthaleneUG/L-NitroanilineUG/L-NitrophenolUG/L-NitrophenolUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-Somophenyl phenyl etherUG/L-Chloro-3-methylphenolUG/L-Chloro-3-methylphenolUG/L-ChloronallineUG/L-ChloroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitrophenolUG/L-NitrophenolUG/LSeenaphthyleneUG/LStacenaphthyleneUG/LStaraeneUG/LSenzaldehydeUG/LSenzaldehydeUG/L	บ บ บ บ บ
C-MethylpaphihaleneUG/L-MethylpaphihaleneUG/L-NitroanilineUG/L-NitrophenolUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-Chloro-3-methylphenolUG/L-Chloro-3-methylphenolUG/L-ChloroanilineUG/L-ChloroanilineUG/L-NitroanilineUG/L-NitroanilineUG/L-NitrophenolUG/L-NitrophenolUG/LSaeetaphthyleneUG/LSaeetaphthyleneUG/LSaeraldehydeUG/LSaeraldehydeUG/L	บ บ บ บ
Methylphenol UG/L 5 -Methylphenol UG/L 9 -Nitroaniline UG/L 5 -Nitroaniline UG/L 9 -Somophenyl phenyl ether UG/L 5 -Chloro-3-methylphenol UG/L 5 -Chloroniline UG/L 5 -Chloroniline UG/L 5 -Nitroaniline UG/L 9 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 5 -Nitrophenol UG/L 5 Acetophenone UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Mutrazene UG/L 5 Benzaldehyde UG/L 5	U U U
-NitroanilineUG/L9-NitroanilineUG/L5-NitroanilineUG/L5-NitroanilineUG/L9-NitroanilineUG/L9-NitroanilineUG/L9-NitroanilineUG/L9-Bromophenyl phenyl etherUG/L5-ChloroanilineUG/L5-ChloroanilineUG/L5-MethylphenolUG/L5-NitroanilineUG/L9-Nitrophenyl phenyl etherUG/L9-NitroanilineUG/L9-NitrophenolUG/L5-NitrophenolUG/L5AcetophenoneUG/L5AcetophenoneUG/L5AnthraceneUG/L5MitrazineUG/L5SenzaldehydeUG/L5	U U
-NitrophenolUG/L5,3'-DichlorobenzidineUG/L\$-NitroanilineUG/L\$-NitroanilineUG/L\$-Bromophenyl phenyl etherUG/L\$-Chloro-3-methylphenolUG/L\$-ChloroanilineUG/L\$-Chlorophenyl phenyl etherUG/L\$-Chlorophenyl phenyl etherUG/L\$-Chlorophenyl phenyl etherUG/L\$-NitrophenolUG/L\$-NitrophenolUG/L\$-NitrophenolUG/L\$-NitrophenolUG/L\$AcetophenoneUG/L\$AuthraceneUG/L\$MuthraceneUG/L\$SenzaldehydeUG/L\$	U
.3-DichlorobenzidineUG/L5-NitroanilineUG/L9.6-Dinitro-2-methylphenolUG/L9-Bromophenyl phenyl etherUG/L5-Chloro-3-methylphenolUG/L5-ChloroanilineUG/L5-Chlorophenyl phenyl etherUG/L5-Chlorophenyl phenyl etherUG/L5-NethylphenolUG/L9-NitroanilineUG/L9-NitrophenolUG/L9-NitrophenolUG/L5AcetophenoneUG/L5AcetophenoneUG/L5AnthraceneUG/L5MuthraceneUG/L5StarzineUG/L5BenzaldehydeUG/L5	
-NitroanilineUG/L9.6-Dinitro-2-methylphenolUG/L9.Bromophenyl phenyl etherUG/L5Chloro-3-methylphenolUG/L5Chlorophenyl phenyl etherUG/L5Chlorophenyl phenyl etherUG/L5Chlorophenyl phenyl etherUG/L5NitroanilineUG/L9NitroanilineUG/L9NitrophenolUG/L9.NitrophenolUG/L5.NitrophenolUG/L5.NitrophenolUG/L5.NitrophenolUG/L5.NitroanilineUG/L5.NitroanilineUG/L5.NitroanilineUG/L5.NitroanilineUG/L5	0
A-Dinitro-2-methylphenolUG/L9-Bromophenyl phenyl etherUG/L5-Chloro-3-methylphenolUG/L5-ChloroanilineUG/L5-Chlorophenyl phenyl etherUG/L5-Chlorophenyl phenyl etherUG/L9-NitroanilineUG/L9-NitrophenolUG/L9-NitrophenolUG/L9-NitrophenolUG/L5AcenaphtheneUG/L5AcenaphthyleneUG/L5AnthraceneUG/L5AtrazineUG/L5BenzaldehydeUG/L5	
-Bromophenyl phenyl ether UG/L 5 -Chloro-3-methylphenol UG/L 5 -Chlorophenyl phenyl ether UG/L 5 -Chlorophenyl phenyl ether UG/L 5 -Methylphenol UG/L 9 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 5 Acenaphthylene UG/L 5 Acenaphthylene UG/L 5 Aceetophenone UG/L 5 Anthracene UG/L 5 Atrazine UG/L 5 Benzaldehyde UG/L 5	
-Chloro-3-methylphenol UG/L 5 -Chloro-3-methylphenol UG/L 5 -Chlorophenyl phenyl ether UG/L 5 -Methylphenol UG/L 9 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 5 Acenaphthylene UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Matrazine UG/L 5 Benzaldehyde UG/L 5	
Chloroaniline UG/L 5 -Chloroaniline UG/L 5 -Methylphenol UG/L 5 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 5 Accenaphthylene UG/L 5 Accetophenone UG/L 5 Anthracene UG/L 5 Mutazine UG/L 5 Benzaldehyde UG/L 5	
-Chlorophenyl phenyl ether UG/L 5 -Methylphenol UG/L 5 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 Veenaphthene UG/L 5 Veenaphthylene UG/L 5 Veetophenone UG/L 5 Autoracene UG/L 5 Autoracene UG/L 5 Sanzaldehyde UG/L 5	-
-Methylphenol UG/L 9 -Nitroaniline UG/L 9 -Nitrophenol UG/L 9 -Nitrophenol UG/L 5 Veenaphthylene UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Muthracene UG/L 5 Starzeine UG/L 5 Starzeine UG/L 5	
NitroanilineUG/L9-NitroanilineUG/L9-NitrophenolUG/L5AcenaphthyleneUG/L5AcetophenoneUG/L5AnthraceneUG/L5AtrazineUG/L5BenzaldehydeUG/L5	
I-Nitrophenol UG/L 9 Veenaphthene UG/L 5 Veenaphthylene UG/L 5 Veetophenone UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Atrazine UG/L 5	
Accenaphthene UG/L 5 Acenaphthylene UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Atrazine UG/L 5 Benzaldehyde UG/L 5	-
Acenaphthylene UG/L 5 Acetophenone UG/L 5 Anthracene UG/L 5 Atrazine UG/L 5 Benzaldehyde UG/L 5	U
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Anthracene UG/L 5 Atrazine UG/L 5 Benzaldehyde UG/L 5	U
Atrazine UG/L 5 Benzaldehyde UG/L 5	U
Benzaldehyde UG/L 5	U
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Benzo(a)pyrene UG/L 5	U
Benzo(b)fluoranthene UG/L 5	U
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Vaphthalene UG L 5	U
Sitrobenzene UG-1 5	U
Pentachlorophenol UG L 9	U
Phenanthrene UG1 5	U
Phenol UG1 5	

Table J-1 Sump Water Results Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Location	SEAD-16
Туре	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Value (Q)
Pyrene	UG/L	5 U
Metals		
Aluminum	UG/L	203
Antimony	UG/L	118
Arsenic	UG/L	4.2 U
Barium	UG/L	279
Beryllium	UG/L	0.5 B
Cadmium	UG/L	1.2
Calcium	UG/L	111000
Chromium	UG/L	3.9 B
Cobalt	UG/L	0.89 U
Copper	UG/L	522
Iron	UG/L	2680
Lead	UG/L	1970
Magnesium	UG/L	22300
Manganese	UG/L	109
Mercury	UG/L	19 A
Nickel	UG/L	6.1 B
Potassium	UG/L	6020
Selenium	UG/L	6.1 U
Silver	UG/L	1 U
Sodium	UG/L 製作	37800
Thallium	UG/L	6.4 U
Vanadium	UG/L	0.78 U
Zine	UG/L	600

Note(s):

U = compound was not detected

B = the result is below reporting limit but above method detection limit

Shading indicates concentration above action level

1. GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)

MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001)

SEC = Secondary Drinking Water Regulations - Drinking Water Standards and Health Advisory (EPA 82-B-00-001)

P PT Projects Seneca PBC II SEAD-16_17 Constituction Completion Report Draft Final-Appendices Appendix J - Sump Water Results Table J-1 sump water data.xls

APPENDIX K

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WASTE MANIFEST

TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	Truck	Trailer	Manifest		Stores and		Total to date		Total top.	SEAD 16	
		No	No.	Number		SEAD Area	THE OCCUPATION OF	tons	totar Loads	date loads	新新年10 n S-」早	SEAD 17 Tons
7/10/2007	Roiccelli	71		11293	17.82	17						17.82
7/10/2007	Roiccelli	74		11294	18.32	17						18.32
7/10/2007	Roiccelli	73		11295	16.83	17						16.83
7/10/2007	Roiccelli	71		11296	21.39	17						21.39
7/10/2007	Roiccelli	73		11297	20.55	17						20.55
7/10/2007	Roiccelli	74		112.98	20.84	17						20.84
7/10/2007	Roiccelli	71		11299	20.82	17						20.82
7/10/2007	Roiccelli	73		11300	23.05	17	1					23.05
7/10/2007	Roiccelli	74		11301	23.49	17						23.49
7/10/2007	Roiccelli	71		11302	24.26	17				1		24.26
7/10/2007	Roiccelli	73		11303	23.58	17		1				23.58
7/10/2007	Roiccelli	74		11304	23.85	17		1				23.85
7/10/2007	Roiccelli	38		11305	22.63	17	277.43	277.43	13	13		22.63
7/11/2007	Roiccelli	56		11335	15 96	17						15.96
7/11/2007	Rotccelli	74		11336	21.12	17						21.12
7/11/2007	Roiccelli	38		11337	20 35	17						20.35
7/11/2007	Roiccelli	14		11338	21.59	17	-					21.59
7/11/2007	Roiccelli	19		11339	20.87	17						20.87
7/11/2007	Roiccelli	32		11340	19.50	17						19,50
7/11/2007	Roiccelli	71		11341	20.12	17						20.12
7/11/2007	Roiccelli	74		11342	22.07	17	161.58	439.01	8	21		22.07
7/12/2007	Roiccelli	19	414	11343	33.61	17						33.61
7/12/2007	Roiccelli	14	409	11344	36.36	17						36.36
7/12/2007	Roiccelli	32	402	11345	35.27	17						35.27
7/12/2007	Roiccelli	38		11346	23.14	17						23.14
7/12/2007	Roiccelli	73		11347	22.41	17						22.41
7/12/2007	Roiccelli	41		11348	20.29	17						20.29
7/12/2007	Roiccelli	37		11349	20.06	17						20.06
7/12/2007	Roiccelli	74		11350	21.15	17						21.15
7/12/2007	Roiccelli	71		11351	20.40	17			1			20.40
7/12/2007	Roiccelli	307	407	11352	32.43	17						32.43
7/12/2007	Roiccelli	132	151	11353	27.78	17						27.78
7/12/2007	Roiccelli	19	414	11354	37.25	17						37.25
7/12/2007	Roiccelli	14	409	11355	34 49	17				1		34.49

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date	Total Loads	date loads	SEAD 16. Tons	SEAD 17 Jons
7/12/2007	Roiccelli	32	402	11356	30.56	17						30.56
7/12/2007	Roiccelli	38		11357	22,49	17						22.49
7/12/2007	Roiccelli	73		11358	18.09	17						18.09
7/12/2007	Roiccelli	37		11359	20.94	17						20.94
7/12/2007	Roiccelli	74		11360	20.72	17						20.72
7/12/2007	Roiccelli	41		11361	19.16	17						19.16
7/12/2007	Roiccelli	71		11362	20.70	17						20.70
7/12/2007	Roiccelli	132	151	11363	37.50	17						37.50
7/12/2007	Roiccelli	307	407	11364	37.62	17						37.62
7/12/2007	Roiccelli	19	414	11365	31.83	17			1			31.83
7/12/2007	Roiccelli	14	409	11366	29.50	17						29.50
7/12/2007	Roiccelli	32	402	11367	27.74	17						27.74
7/12/2007	Roiccelli	38		11368	19.90	17						19.90
7/12/2007	Roiccelli	73		11369	20.26	17						20.26
7/12/2007	Roiccelli	37		11370	20.01	17						20.01
7/12/2007	Roiccelli	41		11371	17 49	17			1.5.5		-	17.49
7/12/2007	Roiccelli	71		11372	18.94	17						18.94
7/12/2007	Roiccelli	74		11373	20.14	17						20.14
7/12/2007	Roiccelli	132	151	11374	33.58	17						33.58
7/12/2007	Roiccelli	307	407	11375	33.06	17	-					33.06
7/12/2007	Roiccelli	19	414	11376	30.34	17						30.34
7/12/2007	Roiccelli	14	409	11377	32.78	17						32.78
7/12/2007	Roiccelli	32	402	11378	35.03	17						35.03
7/12/2007	Roiccelli	38		11379	21.32	17			-			21.32
7/12/2007	Roiccelli	73		11380	22.47	17						22.47
7/12/2007	Roiccelli	37		11381	21.28	17			-			21.28
7/12/2007	Roiccelli	41		11382	21.68	17						21.68
7/12/2007	Roiccelli	71		11383	20.82	17						20.82
7/12/2007	Roiccelli	74		11384	21.88	17						21.88
7/12/2007	Roiccelli	132	151	11385	39.39	17						39.39
7/12/2007	Roiccelli	307	402	11386	37.68	17						37.68
7/12/2007	Roiccelli	64	416	11387	35.06	17						35.06
7/12/2007	Roiccelli	19	414	11388	32.77	17						32.77
7/12/2007	Roiccelli	14	409	11389	32.84	17						32.84

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	NetTons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17-Long
7/12/2007	Roiccelli	32	402	11390	32.72	17						32.72
7/12/2007	Roiccelli	60	421	11391	37.73	17						37.73
7/12/2007	Roiccelli	254	4	11392	32.34	17						32.34
7/12/2007	Roiccellı	18	413	11393	32.35	17						32.35
7/12/2007	Roiccelli	38		11394	22.55	17						22.55
7/12/2007	Roiccelli	73		11395	22.91	17						22.91
7/12/2007	Roiccelli	37		11396	23.22	17						23.22
7/12/2007	Roiccelli	41		11397	20.91	17						20.91
7/12/2007	Roiccelli	71		11398	21.57	17						21.57
7/12/2007	Roiccelli	74		11399	21.78	17	1,538.29	1,977.30	57	78		21.78
7/13/2007	Roiccelli	14	409	11400	31.38	17						31.38
7/13/2007	Roiccelli	32		11401	18.96	17	1000					18.96
7/13/2007	Roiccelli	19	414	11402	32.30	17						32.30
7/13/2007	Roiccelli	60	421	11403	32.20	17						32.20
7/13/2007	Roiccelli	307	407	11404	32.81	17						32.81
7/13/2007	Roiccelli	168		11405	28.57	17						28.57
7/13/2007	Roiccelli	30	400	11406	29.25	17						29.25
7/13/2007	Roiccelli	132	151	11407	27.93	17						27.93
7/13/2007	Roiccelli	74		11408	19.68	16			1.5		19.68	
7/13/2007	Roiccelli	14	161	11409	32.70	17						32.70
7/13/2007	Roiccelli	73		11410	20.46	16					20,46	
7/13/2007	Roiccelli	71		11411	19.58	16					19.58	
7/13/2007	Roiccelli	156	211	11412	35.60	17			-			35.60
7/13/2007	Roiccelli	47	422	11413	36.66	17						36.66
7/13/2007	Roiccelli	116	169	11414	30.89	16					30.89	
7/13/2007	Roiccelli	32		11415	23.46	16					23.46	
7/13/2007	Roiccelli	14		11416	21.32	16					21.32	
7/13/2007	Roiccelli	19		11417	20.94	16					20.94	
7/13/2007	Roiccelli	60	421	11418	24.04	16					24.04	
7/13/2007	Roiccelli	307	407	11419	23.17	16					23.17	
7/13/2007	Roiccelli	30	400	11420	20.49	16					20.49	
7/13/2007	Roiccelli	74		11421	21.27	16					21.27	
7/13/2007	Roiccelli	140	168	11422	35,40	16					35.40	
7/13/2007	Roiccelli	132	151	11423	35.21	16					35.21	

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tos	Total to date	Fotal Loads	date loads	SEAD 16	SEAD 17 Tor
7/13/2007	Roiccelli	71		11424	21.63	16			Enderlichen Marthalensen	Children and Children and Children	21.63	
7/13/2007	Roiccelli	73		11425	21.62	16					21.62	
7/13/2007	Roiccelli	32		11426	20,84	16					20,84	
7/13/2007	Roiccelli	14		11427	21.56	16					21.56	
7/13/2007	Roiccelli	19		11428	22.32	16					22.32	
7/13/2007	Roiccelli	74		11429	22.31	16					22.31	
7/13/2007	Roiccelli	71		11430	22.72	16					22.72	
7/13/2007	Roiccelli	73		11431	23,49	16					23.49	
7/13/2007	Roiccelli	32	1	11432	17.50	16	848.26	2,825.56	33	111	17,50	
7/16/2007	Roiccelli	14		11433	17.81	16					17.81	
7/16/2007	Roiccelli	94		11434	18.27	16					18.27	
7/16/2007	Roiccelli	71		11435	19.17	16					19.17	
7/16/2007	Roiccelli	32		11436	17.80	16					17.80	
7/16/2007	Roiccelli	73		11437	20.92	16					20.92	
7/16/2007	Roiccelli	71		11438	21.92	16					21.92	
7/16/2007	Roiccelli	94		11439	23.94	16					23.94	
7/16/2007	Roiccelli	14		11440	21.86	16					21.86	
7/16/2007	Roiccelli	32		11441	18.89	16					18.89	
7/16/2007	Roiccelli	73		11442	13.95	16					13.95	
7/16/2007	Roiccelli	71		11443	21.65	16					21.65	
7/16/2007	Roiccelli	94		11444	19.42	16					19.42	
7/16/2007	Roiccelli	14		11445	19.43	16					19.43	
7/16/2007	Roiccelli	32		11446	19.33	16					19.33	
7/16/2007	Roiccelli	73		11447	20.16	16					20.16	
7/16/2007	Roiccelli	19		11448	20.63	16					20.63	
7/16/2007	Roiccelli	71	1	11449	20,56	16					20.56	
7/16/2007	Roiccelli	74		11450	21,39	16					21.39	
7/16/2007	Roiccelli	94		11451	21.16	16					21.16	
7/16/2007	Roiccelli	14		11452	20.48	16					20.48	
7/16/2007	Roiccelli	32		11453	22.57	16					22.57	
7/16/2007	Roiccelli	73		11454	22.73	16					22.73	
7/16/2007	Roiccelli	19		11455	22.99	16					22.99	
7/16/2007	Roiccelli	71		11456	22.17	16					22.17	
7/16/2007	Roiccelli	74		11457	23.09	16		1			23.09	

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depol, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD AND	Total Tns-	Total to date.	THE RAN	Total to	SEAD 16	SEAD 17 Tons
			NU.		the second se		WI OLAL ALISA	tons	TOPPECOAUS	adate loads	all a desired and a d	SDAD-17-100
7/16/2007	Roiccelli	94		11458	22.22	16					22.22	
7/16/2007	Roiccelli	32		11459	22.66	16	(70.67			100	22.66	
7/16/2007	Roiccelli	14	100	11460	22.40	16	579.57	3,405.13	28	139	22.40	
7/17/2007	Roiccelli	30	400	11461	29.14	16					29.14	
7/17/2007	Roiccelli	132	151	11462	36.51	16					36.51	
7/17/2007	Roiccelli	140	168	11463	40.34	16					40.34	
7/17/2007	Roiccelli	501	167	11464	35.84	16					35.84	
7/17/2007	Roiccelli	307	407	11465	33.66	16					33.66	
7/17/2007	Roiccelli	14		11466	23.46	16					23.46	
7/17/2007	Roiccelli	74		11467	21.85	16					21.85	
7/17/2007	Roiccelli	32		11468	21.02	16					21.02	
7/17/2007	Roiccelli	71		11469	22.39	16					22.39	
7/17/2007	Roiccelli	30	400	11470	34.95	16					34.95	
7/17/2007	Roiccelli	132	151	11471	38.40	16					38.40	
7/17/2007	Roiccelli	140	168	11472	37.48	16					37.48	
7/17/2007	Roiccelli	501	167	11473	34.12	16					34.12	
7/17/2007	Roiccelli	307	407	11474	30.41	16					30.41	
7/17/2007	Roiccelli	14		11475	19.87	16					19.87	
7/17/2007	Roiccelli	74		11476	21.10	16					21.10	
7/17/2007	Roiccelli	71		11477	20.52	16					20.52	
7/17/2007	Roiccelli	32		11478	22.51	16					22.51	
7/17/2007	Roiccelli	19		11479	15.26	16					15.26	
7/17/2007	Roiccelli	30	400	11480	33.31	16			1		33.31	
7/17/2007	Roiccelli	132	151	11481	37.48	16					37.48	
7/17/2007	Roiccelli	140	168	11482	41.54	16					41.54	
7/17/2007	Roiccelli	501	167	11483	37.92	16					37.92	
7/17/2007	Roiccelli	14	1.1.1.	11484	23.03	16					23.03	
7/17/2007	Roiccelli	74		11485	22.43	16					22.43	
7/17/2007	Roiccelli	307	407	11486	37.00	16					37.00	
7/17/2007	Roiccelli	71		11487	20.78	16				-	20.78	
7/17/2007	Roiccelli	32		11488	23.03	16					23.03	
7/17/2007	Roiccelli	19		11489	22.67	16					22.67	
7/17/2007	Roiccelli	30	400	11490	36.57	16					36.57	
7/17/2007	Roiccelli	14	168	11491	33,93	16					33,93	

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	- Truck	Trailer No.	Manifest	Net Tons	SEAD Area	Total Ins	Total to date	Total Loads	Total to	SEAD 16	SEAD 17 Ton
7/17/2007	Roiccelli	501	167	11492	33.91	16			la Galada et Landa et anna		33.91	
7/17/2007	Roiccelli	132	151	11493	30.64	16					30.64	
7/17/2007	Roiccelli	307	407	11494	25.58	16					25.58	
7/17/2007	Roiccelli	71		11495	19.21	16	-				19.21	
7/17/2007	Roiccelli	32		11496	16.86	16					16.86	
7/17/2007	Roiccelli	19		11497	21.69	16					21.69	
	Roiccelli		VOID	11498							-	
7/17/2007	Roiccelli	14	168	11499	33.55	16					33.55	
7/17/2007	Roiccelli	501	167	11500	32.09	16	1,122.05	4,527.18	39	178	32.09	
7/18/2007	Roiccelli	73		11501	17.38	17						17.31
7/18/2007	Roiccelli	71		11502	17.30	17						17.30
7/18/2007	Roiccelli	32		11503	19.31	17						19.3
7/18/2007	Roiccelli	14		11504	18.82	17						18.83
7/18/2007	Roiccelli	74		11505	19.37	17						19.3*
7/18/2007	Roiccelli	19		11506	21.05	17						21.0
7/18/2007	Roiccelli	73		11507	21.51	17						21.5
7/18/2007	Roiccelli	71		11508	19.64	17						19.64
7/18/2007	Roiccelli	32		11509	18.40	17	1999					18.40
7/38/2007	Roiccelli	14		11510	20.24	17						20.24
7/18/2007	Roiccelli	74		11511	19.85	17						19.8
7/18/2007	Roiccelli	94		11512	19.25	17						19.2
7/18/2007	Roiccelli	19		11513	20.28	17						20.2
7/18/2007	Roiccelli	73		11514	21.10	17						21.1
7/18/2007	Roiccelli	71		11515	20.38	17						20.3
7/18/2007	Roiccelli	32		11516	22.95	17						22.9
7/18/2007	Roiccelli	14		11517	22.58	17						22.5
7/18/2007	Roiccelli	74		11518	21,90	17						21.9
7/18/2007	Roiccelli	73		11519	22.42	17						22.4
7/18/2007	Roiccelli	71		11520	16.91	17						16.9
7/18/2007	Roiccelli	32		11521	17.81	17						17.8
7/18/2007	Roiccelli	14		11522	19.16	17	437.61	4,964.79	22	200		19.1
7/30/2007	Roiccelli	19		11523	22.51	17						22.5
7/30/2007	Roiccelli	74		11524	22.65	17						22.6
7/30/2007	Roiccelli	14		11525	23.87	17						23.8

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TRUCK INSPECTION / LOAD OUT LOG Parsons Project No 745172 Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date	Total Loads	小小小小小小小小	SEAD 16 Tons	SEAD 17 Tons
7/30/2007	Roiccelli	32		11526	22.79	17						22.79
7/30/2007	Roiccelli	71		11527	22.06	17						22.06
7/30/2007	Roiccelli	97		11528	20.91	17						20.91
7/30/2007	Roiccelli	74		11529	23.06	17						23.06
7/30/2007	Roiccelli	19		11530	20.97	17						20.97
7/30/2007	Roiccelli	14		11531	19.86	17						19.86
7/30/2007	Roiccelli	32		11532	16.78	17						16.78
7/30/2007	Roiccelli	71		11533	21.11	17						21.11
7/30/2007	Roiccelli	97		11534	22.57	17						22.57
7/30/2007	Roiccelli	74		11535	19.34	17						19.34
7/30/2007	Roiccelli	19	414	11536	33.86	17						33.86
7/30/2007	Roiccelli	71		11537	21.05	17						21.0
7/30/2007	Roiccelli	97		11538	20,55	17						20.5
7/30/2007	Roiccelli	14	409	11539	34.27	17						34.2
7/30/2007	Roiccelli	32	402	11540	35.62	17						35.6
7/30/2007	Roiccelli	74		11541	24.11	17						24.1
7/30/2007	Roiccelli	19	414	11542	33.63	17						33.6
7/30/2007	Roiccelli	71		11543	21.19	17						21.1
7/30/2007	Roiccelli	14	409	11544	34.31	17						34.3
7/30/2007	Roiccelli	32	402	11545	36.23	17						36.2
7/30/2007	Roiccelli	74		11546	23.49	17						23.4
7/30/2007	Roiccelli	19	414	11547	28.41	17						28.4
7/30/2007	Roiccelli	71		11548	20.35	17	645.55	5,610.34	26	226		20.3
7/31/2007	Roiccelli	71		11590	20.40	16					20.40	
7/31/2007	Roiccelli	14	409	11591	28.21	16					28.21	
7/31/2007	Roiccelli	19	414	11592	36.30	16					36.30	
7/31/2007	Roiccelli	74		11593	19.56	16					19.56	
7/31/2007	Roiccelli	32	402	11594	34.73	16					34.73	
7/31/2007	Roiccelli	94		11595	19.68	16	158.88	5,769.22	6	232	19.68	
8/1/2007	Roiccelli	132		11596	32.14	16					32.14	
8/1/2007	Roiccelli	114		11597	30.15	16					30.15	
8/1/2007	Roiccelli	307	- 0.2	11598	32.27	16	94.56	5,863.78	3	235	32.27	
8/2/2007	Roiccelli	94		11720	22.87	17		1				22.8

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APPENDIX L

BORROW SOURCE RESULTS

Table L-1 SEAD-16 Borrow Source Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

BORROW SOURCE LOCATION MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID				Number	Number	Number	Off-Site GRAVEL 16FM-SPX-01 8/10/2007 SA RA
		Maximum	Acceptable	of	of Times	of Samples	
Parameter	Units	Value	Level 2	Exceedances	Detected	Analyzed	Value (Q)
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/KG	0	680	0	0	1	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0		0	0	1	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0		0	0	1	5 U
1,1,2-Trichloroethane	UG/KG	0		0	0	1	5 U
1,1-Dichloroethane	UG/KG	0	270	0	0	1	5 U
1,1-Dichloroethene	UG/KG	0	330	0	0	1	5 U
1,2,3-Trichlorobenzene	UG/KG	0		0	0	1	5 U
1,2,4-Trichlorobenzene	UG/KG	0		0	0	1	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0		0	0	1	5 U
1.2-Dibromoethane	UG/KG	0		0	0	1	5 U
1,2-Dichlorobenzene	UG/KG	0	1100	0	0	1	5 U
1,2-Dichloroethane	UG/KG	0	20	0	0	I	5 U
1,2-Dichloropropane	UG/KG	0	2400	0	0	1	5 U
1,3-Dichlorobenzene	UG/KG	0	2400	0	0	1	5 U
1,4-Dichlorobenzene	UG/KG	0	1800	0	0	1	5 U
Acetone	UG/KG UG/KG	0 0	50	0	0	1	27 U
Benzene Bromochloromethane	UG/KG UG/KG	0	60	0	0	1	5 U
Bromodichloromethane	UG/KG	0		0	0	1	5 U 5 U
Bromoform	UG/KG	0		0	0	1	5 U
Carbon disulfide	UG/KG	0		0	0	1	5 U
Carbon tetrachloride	UG/KG	0	760	0	0	1	5 U
Chlorobenzene	UG/KG	0	1100	0	0	1	5 U
Chlorodibromomethane	UG/KG	0		0	0	I I	5 U
Chloroethane	UG/KG	0		0	0	1	5 U
Chloroform	UG/KG	0	370	0	0	1	5 U
Cis-1,2-Dichloroethene	UG/KG	0	250	0	0	1	5 U
Cis-1,3-Dichloropropene	UG/KG	0		0	0	1	5 U
Cyclohexane	UG/KG	0		0	0	1	5 U
Dichlorodifluoromethane	UG/KG	0		0	0	I	5 U
Ethyl benzene	UG/KG	0	1000	0	0	1	5 U
Isopropylbenzene	UG/KG	0		0	0	1	5 U
Methyl Acetate	UG/KG	0		0	0	1	5 U
Methyl Tertbutyl Ether	UG/KG	0	930	0	0	1	5 U
Methyl bromide	UG/KG	0		0	0	1	5 U
Methyl butyl ketone	UG/KG	0		0	0	1	27 U
Methyl chloride	UG/KG	0		0	0	1	5 U
Methyl cyclohexane	UG/KG	0		0	0	1	5 U
Methyl ethyl ketone	UG/KG	0	120	0	0	1	27 U
Methyl isoburyl ketone	UG/KG	0		0	0	1	27 U
Methylene chloride	UG/KG	8	50	0	1	1	8 B
Styrene	UG/KG	0		0	0	I	5 U
Tetrachloroethene	UG/KG	0	1300	0	0	1	5 U
Toluene	UG/KG	0	700	0	0	1	5 U
Total Xylenes	UG/KG	0	260	0	0	1	16 U
Trans-1,2-Dichloroethene	UG/KG	0	190	0	0	1	5 U
Trans-1.3-Dichloropropene	UG'KG	0		0	0	1	5 U

Table L-1 SEAD-16 Borrow Source Data Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

BORROW SOURCE LOCATION MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID				Number	Number	Number	Off-Site GRAVEL 16FM-SPX-01 8/10/2007 SA RA
Developmenter	Units	Maximum Value	Acceptable Level ²	of Exceedances	of Times Detected	of Samples Analyzed	Value (Q)
Parameter	Units UG/KG	0	470	0	0	Anaryzeu	5 U
Trichloroethene Trichlorofluoromethane	UG/KG UG/KG	0	470	0	0	1	11
Vinyl chloride	UG/KG UG/KG	1 0	20	0	0	1	
5	UUIKU	0	20	0	0	i i	11 0
Carcinogenic PAHs Benzo(a)anthracene	UG/KG	4		0	1	1	4 J
Benzo(a)pyrene	UG/KG	0		0	0	1	180 U
Benzo(b)fluoranthene	UG/KG	0		0	0	1	180 U
Benzo(b)fluoranthene	UG/KG	0		0	0	1	180 U
Chrysene	UG/KG	0		0	0	1	180 U
Dibenz(a,h)anthracene	UG/KG	0		0	0	1	180 U
Indeno(1,2,3-cd)pyrene	UG/KG	0		0	0	1	180 U
	MG/KG	0.0004	10	-	1	1	ND
BAP Toxicity Equivalence ³	MG/KG	0.0004	10	0	1	1	ND
Metals Antimony	MG/KG	0.69	41	0	1	1	0.69 B
Arsenic	MG/KG	2.2	21.5	0	1	1	2.2
Cadmium	MG/KG	0	60	0	0	1	0.04 U
	MG/KG	9.5	10000	0	1	1	9.5
Copper Lead	MG/KG	4.2	1250	0	1	1	4.2
Mercury	MG/KG	0	5.7	0	0	1	0.005 U
Thallium	MG/KG	0	6.7	0	0	1	0.67 U
Zinc	MG/KG	31.9	10000	0	1	1	31.9
ZIIIU	MONO	51.9	10000	0	1	1	51.9

Notes:

(1) Sample16FM-SPX-01 was not validated. Qualifiers were assigned by the laboratory.

(2) The acceptable criteria are from Table 4-3 of SEAD-16/17 Remedial Design Work Plan.

(3): Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated assuming non-detects were half value.

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF

NISDEC
0.1
1
0.1
0.01
0.01
1
0.1

U = compound was not detected

J / B = the reported value is an estimated concentration

ND = non-detect

APPENDIX M

GROUNDWATER DATA

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID									SEAD-16 MW16-1 GW 16LM20001 12/20/2007 DU LTM	SEAD-16 MW16-1 GW 16LM20000 12/20/2007 SA LTM	SEAD-16 MW16-2 GW 16LM20002 12/20/2007 SA LTM	SEAD-16 MW16-4 GW 16LM20003 12/20/2007 SA LTM	SEAD-16 MW16-5 GW 16LM20004 12/20/2007 SA LTM	SEAD-16 MW16-6 GW 16LM20005 12/20/2007 SA LTM	SEAD-16 MW16-7 GW 16LM20006 12/20/2007 SA LTM
							Number		1	1	1	1	1	1	1
		Maximum	Frequency		Action	Number of		Number of							
Parameter	Units	Value	of Detection	Criteria ¹	Level	Exceedances	Detected	Analyses	Value (Q)						
Aluminum	UG/L	168	100%			0	7	7	91.6 J	61.4 J	98.8 J	167 J	160 J	168 J	45.9 J
Antimony	UG/L	9.58	71%	GA	3	з	5	7	1.02	1 U	3.36	5.11	1.82	1 U	9.58
Arsenic	UG/L	0	0%	MCL	10	0	0	7	4.2 U						
Barium	UG/L	170	100%	GA	1000	0	7	7	59	60.4	64.6	44.5	38.9	31.8	170
Beryllium	UG/L	0	0%	MCL	4	0	0	7	0.27 U						
Cadmium	UG/L	0.46	14%	GA	5	0	1	7	0.36 U	0.46 J					
Calcium	UG/L	194000	100%			0	7	7	105000 J	107000 J	143000 J	87100 J	89000 J	80400 J	194000
Chromium	UG/L	1.1	29%	GA	50	0	2	7	0.84 U	0.84 U	0.84 U	1 J	1.1 J	0.84 U	0.84 U
Cobalt	UG/L	1.6	14%			0	1	7	0.89 U	0.89 U	0.89 U	0.89 U	U 28.0	0.89 U	1.6 J
Copper	UG/L	34.7	71%	GA	200	0	5	7	1.3 U	1.3 U	4.5 J	5.4 J	3.1 J	3.4 J	34.7
Iron	UG/L	1200	100%	GA	300	2	7	7	68.3	35.8 J	49.5 J	95.4	00\$1 1 1 1200		29.2 J
Iron+Manganese	UG/L	1238	100%	GA	500	2	7	7	73	39 J	53 J	127	NULTER ALCINE	441	:660 J
Lead	UG/L	26,5	14%	GA	25	1	1	7	2.9 U	26.5					
Magnesium	UGL	32000	100%			0	4	4	15900 J	16100 J	15600 J	9440 R	9380 R	7100 R	32000 J
Manganese	UG/L	631	100%	GA	300	1	7	7	5	3.3	3.4	31.2	37.6	23.3	631
Mercury	UG/L	0.507	14%	GA	0.7	0	1	7	0.12 U	0.507					
Nickel	UG/L	5.5	14%	GA	100	0	1	7	1.2 U	5.5 J					
Potassium	UG/L	5480	100%			0	1	1	907 R	886 R	2050 R	1300 R	4420 R	2690 R	5480 J
Selenium	UG/L	0	0%	GA	10	0	0	7	6.1 U						
Silver	UG/L	0	0%	GA	50	0	0	7	1 U	1 U	1 U	1 U	1 U	1 U	1U
Sodium	UG/L	68400	100%	GA	20000	5	5	5	5 新社25300 J	1 424200 J	UN . FER 49600 J	40800 J	8410 R	6110 R	J 15 68400 J
Thallium	UG/L	0.03	14%	MCL	2	0	1	7	0.03 U	0.03 J					
Vanadium	UG/L	1.2	29%			0	2	7	0.78 U	0.78 U	0.78 U	0.78 U	1.2 J	0.86 J	0.78 U
Zinc	UG/L	34.4	86%	MCL	5000	0	6	7	7.8 J	4.4 J	8.2 J	5.3 J	34.4	5.5 J	3.6 U

Notes

1. The criteria values are NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998) and EPA

Maximum Contamination Limit (MCL), Source http://www.epa.gov/safewater/mci.htmi#inorganic.html

2. Shading indicates a concentration above GW standard.

U = compound was not detected

J = the reported value is and estimated concentration

R = the result was rejected

P:PTT\Projects\Seneca PBC INSEAD-16_177Construction Completion Report\Draft Final\Appendices\Appendix M - Groundwater Data\Table M-1 - SEAD-16_LTM_Rnd-1_valid_data.xis\SDG-A07-E875_GA MCL Criteria

Table M-2 SEAD-17 Post-RA Groundwater Monitoring Results SEAD-16 and SEAD-17 Construction Completion Report Seneca Army Depot Activity

SITE LOCATION LOCATION ID MATRIX SAMPLE ID SAMPLE DATE QC CODE STUDY ID									SEAD-17 MW17-1 GW 17LM20000 12/20/2007 SA LTM	SEAD-17 MW17-2 GW 17LM20001 12/20/2007 SA LTM 1	SEAD-17 MW17-3 GW 17LM20002 12/20/2007 SA LTM 1	SEAD-17 MW17-4 GW 17LM20003 12/20/2007 SA LTM	SEAD-17 MW17-5 GW 17LM20004 12/20/2007 SA LTM
							Number		I	1	1	I	I
		Maximum	Frequency		Action	Number of	of Times	Number of					
Parameter	Units	Value	of Detection	Criteria ¹	Level	Exceedances	Detected	Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	204	100%			0	5	5	204	110 J	106 J	50.2 J	98.5 J
Antimony	UG/L	3.44	20%	GA	3	1	1	5	1 U	3.44	1 U	1 U	1 U
Arsonic	UG/L	0	0%	MCL	10	0	0	5	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
Barium	UG/L	86.7	100%	GA	1000	0	5	5	70	58.8	39	32.5	86.7
Beryllium	UG/L	0	0%	MCL	4	0	0	5	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Cadmium	UG/L	0	0%	GA	5	0	0	5	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Calcium	UG/L	110000	100%			0	5	5	98300 J	110000 J	69000 J	74900 J	97100 J
Chromium	UG/L	1	20%	GA	50	0	1	5	0.84 U	0.84 U	0.84 U	1 J	0.84 U
Cobalt	UG/L	0	0%			0	0	5	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Copper	UG/L	6.2	60%	GA	200	0	3	5	1.3 U	6.2 J	2.6 J	1.8 J	1.3 U
Iron	UG/L	140	100%	GA	300	0	5	5	106	140	133	45.4 J	91.7
Iron+Manganese	UG/L	170	100%	GA	500	0	5	5	119	160	170	59 J	128
Lead	UG/L	0	0%	GA	25	0	0	5	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
Magnesium	UG/L	21800	100%			0	2	2	21800 J	11000 R	7560 R	10400 R	15800 J
Manganese	UG/L	36.7	100%	GA	300	0	5	5	13.2	20.5	36.7	13.7	36.5
Mercury	UG/L	0	0%	GA	0.7	0	0	5	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Nickel	UG/L	0	0%	GA	100	0	0	5	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Potassium	UG/L	0	0%			0	0	0	614 R	1690 R	2620 R	838 R	972 R
Selenium	UG/L	0	0%	GA	10	0	0	5	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
Silver	UG/L	0	0%	GA	50	0	0	5	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	28500	100%	GA	20000	1	1	1	7790 R	6620 R	4550 R	28500 J	7950 R
Thallium	UG/L	0	0%	MCL	2	0	0	5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vanadium	UG/L	0	0%			0	0	5	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
Zinc	UG/L	72	100%	MCL	5000	0	5	5	4.7 J	72 J	27 J	5.1 J	4.7 J

Notes

1 The criteria values are NYSDEC Class GA GW Standards (TOGS 1.1 1, June 1998) and EPA

Maximum Contamination Limit (MCL), Source http://www.epa.gov/safewater/mcl.html#inorganic.html

2 Shading indicates a concentration above GW standard.

U = compound was not detected

J = the reported value is and estimated concentration

R = the result was rejected

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5/22/2008

APPENDIX N

RESPONSE TO COMMENTS

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: Draft Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Romulus, New York

Comments Dated: April 7, 2008

Date of Comment Response: May 27, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: Section 4.3. Please explain in the text why only 4427 CY of soil needed to be excavated (per Table 3.2) when the July 2007 Work Plan anticipated the need to remove 4692 CY.

Response 1: This question is addressed in Section 4.3 of the subject document. The excavation volume is based on the actual tonnage of soil removed from the site. A deviation of less than 6% from the estimated volume presented in the Work Plan is not significant and does not represent a notable deviation from the plan.

Comment 2: Section 5.0. Post Construction Activities – please describe briefly the sampling frequency for groundwater and the time schedule for routine inspections instead of text references to the Post-Closure Monitoring and Maintenance Plan (PCMMP).

Response 2: The text from the PCMMP has been added to this section. The groundwater sampling event was completed in December 2007. The results of the sampling event have been added to this section. Based on the data, the groundwater at SEAD-16 and SEAD-17 has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

Comment 3: Table 3.3, Page 7 of 8. Sample 17EXPR-F6-02 – the Lead exceeds the 1250 mg/kg site cleanup goal (see Appendix D, Table D-2, Page 8 of 11). Army should justify why this soil does not need to be excavated.

Response 3: A concentration at a location where a sample and a sample duplicate were collected is represented by the average value of the sample duplicate pair. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states:

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"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Therefore, the concentration of soil at that location was assumed to be the average of 702 mg/kg and 1,540 mg/kg, or 1,121 mg/kg, which is below the lead cleanup goal of 1,250 mg/kg. The analytical results for a sample and its associated duplicate are evaluated as a unique data point represented by the average of the sample and the duplicate data. This detail has been added to the text in Section 3.4.1.

Comment 4: Appendix D, Table D-1, Page 2-13. Lead Concentration exceed the cleanup goal concentration of Lead in sample 16EXFL-B8-02, 16EXFL-C9-01, 16EXFL-D8-01, 16EXSW-D8-05, 16EXSW-D8-01 and 17EXFL-E5-01. The Cell for 16EXFL-B8-02 should be outlined and bold the Text as done for other samples with exceedances.

Response 4: The table has been revised so that the data for 16EXL-B8-02 are bolded and outlined. It should be noted that Appendix D has been renamed as Appendix E in the Draft Final CCR.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Draft Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Romulus, New York

Comments Dated: February 12, 2008

Date of Comment Response: May 27, 2008

Army's Response to Comments

GENERAL COMMENTS

Comment 1: Section 3.3, Air Monitoring, discusses dust monitoring during excavation activities. Although the Report references the project Health and Safety Plan, including the Lead Monitoring Plan, there is no indication of why lead was the only analyte selected for dust monitoring. Perimeter real time measurements were conducted; please provide information on how frequently the dust monitors were checked, if the results were logged in a field book, and where the dust monitoring data can be located in the report.

Response 1:

Section 3.3 addresses community air monitoring (CAMP) activities. CAMP generally includes air monitoring for PM_{10} and VOCs. The approved Work Plan states that although the NYSDOH CAMP also requires real-time perimeter measurements for total VOCs, such monitoring is not applicable at SEAD-16 and SEAD-17 since VOCs are not contaminants of concern at these sites.

The dust monitoring began when the excavation commenced and the air data were logged in both the field book and the field forms. The data were recorded on the field forms at a high frequency (every couple of hours) for the first days of the excavation to ensure that elevated dust levels that could pose a risk to receptors at the perimeter were not detected. Those field forms are attached and included in Appendix C. After the first two days of the most intrusive work, a review of the dust data indicated that the concentrations of PM10 were consistently below the action level. Therefore, from this point on, periodic readings from the dataram were recorded in the log book; a table of the dust readings from the log book is also presented in a new appendix (i.e., **Appendix C**).

Lead monitoring will be discussed under the health and safety discussion, Section 3.2, as it was completed to monitor workers' heath and safety. Contaminants of concern at the two sites were heavy metals in soils. Due to its high toxicity (i.e. low permissible exposure limit; or PEL) and its concentration in soils at SEAD-16 and SEAD-17, lead was the only heavy metal that could potentially cause exposure above the PEL at dust levels below the point at which dust is visible (5 mg/m³). The monitoring

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated February 12, 2008 Page 2 of 7

specifically for lead was performed to ensure that there was no hazardous lead level at dust levels below the point at which dust is visible.

Comment 2: The table on page 3-10, Section 3.5.1, Excavation and Confirmatory Sampling, does not correlate with the Final Confirmatory Soil Sample Results in Table 3-3 (SEAD-17). Statements below the tables on page 3-6 and 3-10 say that sampling activities were completed on August 14, 2007, but none of the samples in Tables 3-2 or 3-3 have that sample date. The table on page 3-10 shows 73 final samples, but Table 3-3 includes only 64 samples.

In addition, the sample count provided in the Executive Summary for SEAD-17 (page E-2) reflects the same number of soil samples as the table on page 3-10. Revise the report to provide the correct numbers and dates of the samples.

Response 2: Perimeter confirmatory sampling began in April and May 2007 prior to the excavation, and the pre-excavation perimeter data were combined with a subset of historic RI data to delineate the horizontal limits of excavation. This information was presented in the approved Work Plan for this work. Additional perimeter confirmatory samples (seven samples at SEAD-16 and 5 samples at SEAD-17) were collected post-excavation as well. The appearance of a sample count discrepancy is due to the inclusion of nine historic RI samples in the count on Page 3-10. These nine historic RI samples were counted as perimeter samples, used to define the extent of lead contamination. The table on Page 3-10 contains a footnote explaining this information. For clarity, a footnote has been added to Table 3-3, indicating that the table only includes confirmatory samples collected as part of the remedial action effort, and historic RI samples used to define the perimeter of excavation are not presented. A note has been added to Table 3-3 indicating the numbers presented in the text include RI samples.

The statements below the tables on Page 3-6 and 3-10 have been revised to state that "All excavation activities were completed on August 14, 2007."

Comment 3: The "Phase I Sampling" subsections of 3.4.1 and 3.5.1, Excavation and Confirmatory Sampling (for SEAD-16 and SEAD-17, respectively), indicate that U.S. EPA personnel collected five split soil confirmatory samples from each site. Both U.S. EPA and Parson's analytical data (TestAmerica Laboratories, Inc.) for these 10 samples is provided in the appendices and it was documented that the sample results varied. The U.S. EPA sample results tended to yield higher concentrations than the Parson's results. In 40% of the split samples, the U.S. EPA concentrations exceeded the 1,250 milligram per kilogram (mg/kg) cleanup goal, when the Parson's laboratory results did not. Please include a discussion of the reason(s) for this apparent variability. For example, it is unclear if there were sample preparation or analysis differences between EPA's laboratory and the facility's laboratory (e.g., were the same methods used, did the laboratories prepare the sample in the same manner, etc.).

In addition, many of the site's results were qualified J. However, it is unclear if the results were qualified as estimated due to QC exceedances and if these QC exceedances resulted in low biases which may

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explain the reported differences, or if the results were qualified due to elevated reporting limits (i.e., results were between the MDL and RL). Further, although these areas were excavated to an additional depth and resampled to confirm the lead contaminated soil was removed, the Report does not discuss if potential heterogeneity issues exist. If sample heterogeneity is an issue it is possible that additional confirmation samples not split with U.S. EPA may have concentrations that exceeded the cleanup goals (i.e., sample heterogeneity is an issue which could cause erroneous decisions to be made at the site). These items should all be discussed in a sample precision, accuracy, representativeness, comparability, and completeness (PARCC) section. The PARCC discussion should summarize all QC results associated with the analyses including the matrix spike, post digest spike, serial dilution, laboratory duplicate, field duplicate, and laboratory control sample results for the two sets of data. Please revise the report to discuss these differences between the U.S. EPA and Parsons data.

Response 3:

Split Sample Discrepancy

The discrepancies between USEPA and the Army's results were discussed with USEPA upon receipt of the data via email on July 31, 2007. Rather than determine the analytical basis for the differences in the data, it was decided that a conservative approach would be taken and would assume that the higher of the Army's or USEPA's split sample results were the true concentrations. When the higher concentration exceeded the cleanup goal, then the Army excavated additional soil, as documented in the CCR, and collected additional confirmatory samples. The new confirmatory samples met the cleanup goals.

In order to assess the variability between the USEPA's and the Army's data, the Army will require more information (including e.g. methodology, laboratory narratives, and QA/QC data) from the USEPA.

Data Quality Issues:

A Data Validation Memorandum was included in the CCR as Appendix G. This memo includes tables that provide a detailed assessment of qualified data. It should be noted that Appendix G has been renamed as Appendix II in the Draft Final CCR.

Qualified Data

A Data Validation Memorandum was included in the CCR as Appendix G. To determine what the J qualifier is based on, the reader must refer to Appendix G, which provided additional information to help judge whether or not the J was due to relative QC exceedances. QC exceedances and the resulted qualification of the sample results were listed in detail in Tables G-2 through G-11 and summarized in the Data Validation Memorandum presented in Appendix G. It should be noted that Appendix G has been renamed as Appendix H in the Draft Final CCR.

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated February 12, 2008 Page 4 of 7

Sample Heterogeneity

The field duplicate results indicate that although there is some heterogeneity of soils at SEAD-16/17, the heterogeneity issue does not impact the overall confirmatory sample results. Soil heterogeneity is expected in shallow granular soils where metals fragments may be present.

Field duplicate results indicate that there could have been a potential heterogeneity issue associated with SEAD-16/17 soil; however, the heterogeneity did not significantly impact the overall confirmatory sample results. A total of 13 field duplicate pairs were collected to evaluate the potential heterogeneity issue in soil at SEAD-16/17. One or more metals in eight field duplicate pairs (out of the 13 field duplicate pairs) had relative percent difference (RPD) above the Region 2 limit of 35% (as shown in Table G-7), indicating potential heterogeneity issue associated with soil.

However, most exceedances had RPDs below the Region 2 limit of 120%, which means the associated results are estimated values but are still usable data. Only Cd, Cu, Pb, Hg, and Zn in 16EXSW-D8-01/16EXSW-D8-05 pair and Cu in 16EXPR-G5-01/16EXPR-G5-02 pair had RPDs above 120%; indicating the data was significantly impacted by heterogeneity issue and therefore are not usable That caused the data to be rejected ,reanalyzed and the reanalysis was acceptable.

In summary, Laboratory duplicate and matrix spike results support the conclusion that the heterogeneity issue is minor and did not significantly impact the overall confirmatory sample results. Laboratory duplicate analysis and matrix spike analysis were conducted for each SDG of the total 13 SDGs (not including the reanalysis). Potential heterogeneity impacts to both the laboratory duplicate results and the matrix spike results were observed for several SDGs. However, only limited metals in limited SDGs had results rejected due to the duplicate or spike results (as shown in Table G-2).

QC exceedances have been taken into account during the data validation process; all data have been qualified by qualified chemists in accordance with the EPA Region 2 SOPs. As a result, all data that arc not rejected are considered usable to represent the site conditions.

It should be noted that all QC results associated with the analyses including the matrix spike, post digest spike, serial dilution, laboratory duplicate, field duplicate, and laboratory control sample results were discussed in detail in Appendix G, which has been renamed as Appendix H in the Draft Final CCR.

Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix 1. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document.

Response 4: The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust control for soils within the excavation areas at SEAD-16 that were excavated

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated February 12, 2008 Page 5 of 7

and disposed off-site. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place to prevent any runoff. This information has been added to the text. A comparison of the water data to groundwater standards is presented in Table 1 attached to this response to comments for your reference. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill. This information has been added to the text.

Comment 5: It is reported in the "Phase II Sampling" subsection of 3.5.1, Excavation and Confirmatory Sampling, for SEAD-17 that five floor samples and one perimeter sample were collected. No duplicate samples were collected during the Phase II Sampling. U.S. EPA typically recommends one duplicate sample be collected for each 20 samples collected and a minimum of one duplicate sample be collected from each sampling event. Since no duplicate sample was collected from the Phase II event, address the duplicate count to ensure proper sampling protocol.

Response 5: Quality control (QC) samples for SEAD-16/17 were collected in accordance with the Sampling and Analysis Plan (SAP) prepared by Parsons (2006) for the Seneca Army Depot Activity. According to Table 12 of the SAP, field duplicate samples will be collected at a frequency of one for every 20 project samples, or per sample delivery group (SDG), whichever is more frequent, per matrix. The collection of duplicate samples for SEAD-16/17 removal action activity complied with the SAP requirement and the rationales are presented below.

The Phase II sampling at both SEAD-16 and SEAD-17 was considered to be one sampling event. A field duplicate sample was not collected specifically for SEAD-17 during the Phase II sampling, though a field duplicate pair was collected at SEAD-16 during the Phase II sampling (16EXFL-F9-01 and 16EXFL-F9-02). Prior investigations and remedial actions at SEAD-16 and SEAD-17 have consistently been conducted concurrently; the chemical impacts at these two sites are similar. Further, Phase II excavation and sampling for SEAD-16 and SEAD-17 was performed during the same time period, by the same field crew, and the samples were grouped in the same SDG. Therefore, the field duplicate sample collected from SEAD-16 during the Phase II sampling is effective to evaluate sampling precision and matrix homogeneity for SEAD-17 Phase II samples.

Nine field duplicate samples were collected for a sum of 138 final confirmatory samples for the SEAD-16/17 construction activity. The field duplicate collection frequency is approximately 6.5%, which is greater than the 5% SAP requirement.

Army's Response to USEPA Comments on Draft CCR for SEAD-16 & 17 Comments Dated February 12, 2008 Page 6 of 7

Based on the above discussion, it is concluded that field duplicate samples were collected in accordance with the SAP and USEPA requirement (as referred in the comment) for the SEAD-16/17 removal action construction.

Comment 6: Revise the legend in Site Plan Figures for SEAD-16 and SEAD-17, C-2 and C-3, respectively, to include the Stockpile and Decon areas. They currently resemble excavation areas on other figures provided in the Report.

Response 6: The features have been revised in the legends.

Comment 7: The confirmation floor samples collected from the excavated grids are not labeled on figures C-4 and C-5. Revise figures to include sample IDs similar to perimeter and side wall samples for consistency and clarity.

Response 7: The drawings have been revised and all of the samples are labeled.

Comment 8: Sample 17EXPR-F6-02 presented in Table 3-3, SEAD-17 Final Confirmatory Soil Sample Results, and Table D-2, SEAD-17 Complete Confirmatory Soil Sample Results (located in Appendix D), is a duplicate sample for 17EXPR-F6-01. The lead concentration in the duplicate sample (17EXPR-F6-02) exceeds the 1,250 mg/kg site cleanup goal, while the actual sample concentration only yielded 702 J mg/kg. Provide an explanation as to why the potentially contaminated soil was left in place and not excavated (i.e., was the average used?). Alternatively, include a footnote in the applicable tables explaining the exceedance.

Response 8: A concentration at a location where a duplicate was collected is represented by the average value of the sample and its associated field duplicate. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states:

"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Therefore, the concentration of soil at that location was assumed to be the average of 702 mg/kg and 1,540 mg/kg, or 1,121 mg/kg, which is below the lead cleanup goal of 1,250 mg/kg. The analytical results for a sample and its associated duplicate are evaluated as a unique data point represented by the average of the sample and the duplicate data. This detail has been added to the text in Section 3.4.1.

SPECIFIC COMMENTS

P: PTTProjects'Seneca PBC II'SEAD-16_17/Construction Completion Report:Comments'Draft'Response to EPA Comments dated 021208final.doc

Comment 1: Section 5.0, Post-Construction Activities, discusses the requirement of long-term groundwater monitoring at both SEAD-16 and SEAD-17. Although the Report references the Post-Closure Monitoring and Maintenance Plan (PCMMP) of the Final Work Plan, revise the text to include a short summary of the proposed plan. Discuss the frequency of the groundwater sampling events, analyses to be conducted, etc., for readers not having access to the PCMMP.

Response 1: The text from the PCMMP has been added to this section. The groundwater sampling event was completed in December 2007. The results of the sampling event have been added to this section. Based on the data, the groundwater at SEAD-16 and SEAD-17 has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

Comment 2: Table D-1, Appendix D, Page 2 of 13. Antimony and lead concentration in sample 16EXFL-B8-02 exceed the site cleanup goals. Outline the cell and bold the text to denote the exceedance.

Response 2: The table has been revised accordingly. It should be noted that Appendix D has been renamed as Appendix E in the Draft Final CCR.

Comment 3: Appendix H, USEPA Split Sample Data. The table provided does not indicate the analyte (lead). Revise the tables to identify the analyte.

Response 3: The table has been revised accordingly. It should be noted that Appendix H has been renamed as Appendix I in the Draft Final CCR.

Table 1

Sump Water Results Compared to Groundwater Standards Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Location Type Sample ID Date QC CODE STUDY ID SEAD-16 SUMP WATER 16WWT16-0703 07/03/07 SA RA

pranetr Units Maximum Prequency Standard Criterial Standard Detect Analyses Value (Q) 1,1,1-Trichlonechane UGA 0 % 5 GA 0 0 1 1 U 1,1,2-Trichlonechane UGA 0 % 5 GA 0 0 1 1 U 1,1,2-Trichlonechane UGA 0 % 5 GA 0 0 1 1 U 1,1-Dichlonechane UGA 0 % 5 GA 0 0 1 1 U 1,2-Dirichlonechane UGA 0 % 5 GA 0 0 1 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1					Groundwater		Exceed			
1,1,7.incluincentane UGL 0 0% 5 GA 0 0 1 L C 1,1,2.7.incluincentane UGL 0 0% 5 GA 0 0 1 L C 1,1.7.incluincentane UGL 0 0% 5 GA 0 0 1 L C 1,1.7.incluincentane UGL 0 0% 5 GA 0 0 1 L C 1,1.7.incluincentane UGL 0 0% 5 GA 0 0 1 L C 1,2.3.incluincentane UGL 0 0% 0.04 GA 0 1 L C 1,2.3.incluincentane UGL 0 0% 0.6 GA 0 0 1 L C 1.3.incluincentane UGL 0 0% 0.6 GA 0 0 1 L C 1.3.incluincentane UGL 0 0% 3 GA 0 0 1 L C 1.3.incluincentane UGL 0 0% 5	Parameter	Units	Maximum	Frequency	Standard	Criteria	Standard	Detect	Analyses	Value (Q)
1,1,2,2,1rinkburgehane UGAL 0 0% 5 GA 0 0 1 1 C 1,1,2,1rinkburgehane UGAL 0 0% 1 GA 0 0 1 1 C 1,1-bickburgehane UGAL 0 0% 5 GA 0 0 1 1 C 1,1-bickburgehane UGAL 0 0% 5 GA 0 0 1 1 C 1,2-bickburgehane UGAL 0 0% 0.5 GA 0 0 1 1 C 1,2-bickburgehane UGAL 0 0% 0.6 GA 0 0 1 1 C 1,2-bickburgehane UGAL 0 0% 0.6 GA 0 0 1 1 C 1,2-bickburgehane UGAL 0 0% 3 GA 0 0 1 1 C 1,2-bickburgehane UGAL 0 0% 3 GA 0 0 1 1 C 1,3-bickburgehane UGAL 0 0% 3 <td>Volatile Organic Compounds</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Volatile Organic Compounds									
1,1,2-ricklone-1,2,2-riftworethane UGL 0 9% 5 GA 0 0 1 1.U 1,1-Dicklonerethane UGL 0 9% 5 GA 0 0 1 1.U 1,1-Dicklonerethane UGL 0 9% 5 GA 0 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 5 GA 0 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 0.00 GA 0 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 0.6 GA 0 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 0.6 GA 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 3 GA 0 1 1.U 1,2-Dicklonerethane UGL 0 9% 3 GA 0 1 1	1,1,1-Trichloroethane	UG/L	0	0%	5	GA	0	0	1	ΙŬ
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1,1-bickloreschene UGAL 0 0% 5 GA 0 1 1 1 1,2-bickloreschene UGAL 0 0% 5 GA 0 1 1 U 1,2-bickloreschene UGAL 0 0% 5 GA 0 1 1 U 1,2-bickloreschenzene UGAL 0 0% 0.00 GA 0 1 1 U 1,2-bickloreschenzene UGAL 0 0% 3 GA 0 1 1 U 1,2-bickloreschenzene UGAL 0 0% 3 GA 0 1 1 U 1,2-bickloreschenzene UGAL 0 0% 3 GA 0 1 1 U 1,4-bickloreschenzene UGAL 0 0% 3 GA 0 1 1 U 1,4-bickloreschenzene UGAL 0 0% S GA 0 <td< td=""><td>1,1,2-Trichloro-1,2,2-Trifluoroethane</td><td>ĽG/L</td><td>0</td><td>0%</td><td>5</td><td>GΛ</td><td>0</td><td>0</td><td>1</td><td>I U</td></td<>	1,1,2-Trichloro-1,2,2-Trifluoroethane	ĽG/L	0	0%	5	GΛ	0	0	1	I U
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1,2,4-Trichlorobenzene UGA. 0 0% 5 GA 0 0 1 1 1,2-A-Trichlorobenzene UGA. 0 0% 0.00 GA 0 1 1 1,2-Dichlorochenzene UGA. 0 0% 0.00 GA 0 1 1 1,2-Dichlorochenzene UGA. 0 0% 0.0 GA 0 1 1 1,2-Dichlorochenzene UGA. 0 0% 3 GA 0 1 1 1 1,2-Dichlorochenzene UGA. 0 0% 3 GA 0 1 1 1 1,3-Dichlorobenzene UGA. 0 0% 3 GA 0 1 1 1 1,4-Dichlorobenzene UGA. 0 0% 3 GA 0 1 1 1 1,4-Dichlorobenzene UGA. 0 0% 80 MCL 0 1 1 1 1,4-Dichlorobenzene UGA. 0 0% 5 GA 0	1,1-Dichloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
1,2-1 richlarobenzene UGL 0 0% 5 GA 0 0 1 1.2 1.2-Dibromochane UGL 0 0% 0.0006 GA 0 0 1 1.2 1.2-Dibromochane UGL 0 0% 0.6 GA 0 0 1 1.2 1.2-Dickorobenzene UGL 0 0% 0.6 GA 0 0 1 1.2 1.4-Dicklorobenzene UGL 0 0% 3 GA 0 0 1 1.1 1.4-Dicklorobenzene UGL 0 0% 3 GA 0 0 1 1.1 1.4-Dicklorobenzene UGL 0 0% 3 GA 0 0 1 1.1 Action 0.07 0% 5 GA 0 0 1 1.1 U Action disulfié UGL 0 0% 5 GA 0 0 1 1.1 U Bromochiobenenehane UGL 0 0% 5 <td>1,1-Dichloroethene</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td>5</td> <td>GA</td> <td>0</td> <td>0</td> <td>1</td> <td>1 U</td>	1,1-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1,3-Dichlorobenzene	UG/L	0	0%	3	GA	0	0	1	1 U
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Benzene	UG/L	0	0%	1	GA	0	0	1	1 U
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Bromochloromethane	UG/L	0	0%	5	GA	0	0	1	1 U
$ \begin{array}{cccc} Carbon disulfide & UGAL & 0 & 0\% & & & 0 & 1 & 1 U \\ Carbon tetrachloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnezene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnezene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnem & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnem & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnem & UGAL & 0 & 0\% & 7 & GA & 0 & 0 & 1 & 1 U \\ Chlorodnem & UGAL & 0 & 0\% & 7 & GA & 0 & 0 & 1 & 1 U \\ Cisl -3.Dichloropropene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Cisl -3.Dichloropropene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Cyclokaane & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Edyl benzene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Edyl benzene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Isopropylbenzene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Hachyl Acctate & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl Terbudyl Eher & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl chloride & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl ketone & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Methyl retbudyl ketone & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Total Xylene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Total Xylene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Total Xylene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Trans.1.2.Dichlorophene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Trans.1.2.Dichlorophene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Trans.1.2.Dichlorophene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Trans.1.2.Dichlorophene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ Trans.1.2.Dichlorophene & UGAL & 0 & 0\% & 5 & GA & 0 & 0 & 1 & 1 U \\ T$	Bromodichloromethane	UG/L	0	0%	80	MCL	0	0	ł	I U
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Bromoform	UG/L	0	0%	80	MCL	0	0	1	1 U
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Chlorodibromomethane UG/L 0 9% 80 MCL 0 0 1 1 U Chloroform UG/L 0 9% 5 GA 0 1 1 U Chloroform UG/L 0 9% 7 GA 0 1 1 U Cis-1,3-Dichloropropene UG/L 0 9% 5 GA 0 0 1 1 U Cyclohexane UG/L 0 9% 5 GA 0 0 1 1 U Dichlorodifhuoromethane UG/L 0 9% 5 GA 0 0 1 1 U Kopropylbenzene UG/L 0 9% 5 GA 0 0 1 1 U Methyl Tchtuly Ehter UG/L 0 9% 5 GA 0 1 1 U Methyl Stohor UG/L 0 9% 5 GA 0 1 1 U Methyl bromide <td>Carbon tetrachloride</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td>5</td> <td>GA</td> <td>0</td> <td>0</td> <td>1</td> <td>1 U</td>	Carbon tetrachloride	UG/L	0	0%	5	GA	0	0	1	1 U
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Chlorobenzene	UG/L	0	0%	5	GA	0	0	l	I U
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Chloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
Cis-1,3-Dichloropropene UG/L 0 0% 0.4 GA 0 0 1 1 U Cyclobexane UG/L 0 0% 5 GA 0 0 1 1 U Dichlorofithuromethane UG/L 0 0% 5 GA 0 0 1 1 U Isopopylbenzene UG/L 0 0% 5 GA 0 0 1 1 U Methyl Acctate UG/L 0 0% 5 GA 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 </td <td>Chloroform</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td>7</td> <td>GA</td> <td>0</td> <td>0</td> <td>1</td> <td>1 U</td>	Chloroform	UG/L	0	0%	7	GA	0	0	1	1 U
Cyclohexane UG/L 0 0% 0 1 1 U Dichlorodifluoromethane UG/L 0 0% 5 GA 0 0 1 1 U Dichlorodifluoromethane UG/L 0 0% 5 GA 0 0 1 1 U Isopropylbenzene UG/L 0 0% 5 GA 0 0 1 1 U Methyl Terbulyl Ether UG/L 0 0% 5 GA 0 0 1 1 U Methyl Torbulyl Ether UG/L 0 0% 5 GA 0 0 1 1 U Methyl Isopropylbenzene UG/L 0 0% 5 GA 0 0 1 1 U Methyl Isopropyl Ether UG/L 0 0% 5 GA 0 0 1 1 U Methyl Isopropyl Ether UG/L 0 0% 5 GA 0 0 1 1 U Methyl Isopropyl Ether UG/L 0 0% 5 GA 0	Cis-1,2-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	ΙU
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	GA	0	0	1	1 U
Ethyl benzeneUG/L00%5GA0011UIsopropylbenzeneUG/L00%5GA0011UMethyl AcetateUG/L00%00011UMethyl LetherUG/L00%5GA0011UMethyl bromideUG/L00%5GA0011UMethyl blovik ketoneUG/L00%5GA0011UMethyl chlorideUG/L00%5GA0011UMethyl chlorideUG/L00%5GA0011UMethyl isobutyl ketoneUG/L00%5GA0011UMethyl isobutyl ketoneUG/L00%5GA0011UStyraneUG/L00%5GA0011UUTotal xylenesUG/L00%5GA0011UUTrans-1,3-DichloroetheneUG/L00%5GA0011UUUU1UUU1UU1UUU1UU11UUU1<	Cyclohexane	UG/L	0	0%			0	0	1	ΙU
IsopropylbenzeneUG/L00%5GA0011UMethyl AcetateUG/L00%00011UMethyl Terbuyl EtherUG/L00%5GA0011UMethyl DormideUG/L00%5GA0011UMethyl buryl ketoneUG/L00%5GA0011UMethyl cyclohexaneUG/L00%5GA0011UMethyl cyclohexaneUG/L00%5GA0011UMethyl isobutyl ketoneUG/L00%5GA0011UMethyl isobutyl ketoneUG/L00%5GA0011UMethyl isobutyl ketoneUG/L00%5GA0011UUTerachloroetheneUG/L00%5GA0011UUTotal XylenesUG/L00%5GA0011UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU <td< td=""><td>Dichlorodifluoromethane</td><td>UG/L</td><td>0</td><td>0%</td><td>5</td><td>GA</td><td>0</td><td>0</td><td>1</td><td>1.0</td></td<>	Dichlorodifluoromethane	UG/L	0	0%	5	GA	0	0	1	1.0
Methyl Acetate UG/L 0 0% 0 1 I U Methyl Terthutyl Ether UG/L 0 0% 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 1 U Methyl bronide UG/L 0 0% 5 GA 0 0 1 1 U Methyl butyl ketone UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclobexane UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclobexane UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclobexane UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclobexane UG/L 0 0% 5 GA 0 0 1 1 U Methyl sobutyl ketone UG/L <td< td=""><td>Ethyl benzene</td><td>UG/L</td><td>0</td><td>0%</td><td>5</td><td>GA</td><td>0</td><td>0</td><td>1</td><td>1 U</td></td<>	Ethyl benzene	UG/L	0	0%	5	GA	0	0	1	1 U
Methyl Terburyl Ether UG/L 0 0% 0 0 1 1 U Methyl bromide UG/L 0 0% 5 GA 0 0 1 1 U Methyl bromide UG/L 0 0% 5 GA 0 0 1 1 U Methyl choride UG/L 0 0% 5 GA 0 0 1 1 U Methyl choride UG/L 0 0% 5 GA 0 0 1 1 U Methyl choride UG/L 0 0% 5 GA 0 0 1 1 U Methyl sobutyl ketone UG/L 0 0% 5 GA 0 0 1 1 U Styrene UG/L 0 0% 5 GA 0 0 1 1 U Totach UG/L 0 0% 5 GA 0 0 1 1 U Trans-1,2-Dichlorophene UG/L 0 0% 5 GA 0 0 1 <td>Isopropylbenzene</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td>5</td> <td>GA</td> <td>0</td> <td>0</td> <td>ŀ</td> <td>ΙU</td>	Isopropylbenzene	UG/L	0	0%	5	GA	0	0	ŀ	ΙU
Methyl bromide UG/L 0 0% 5 GA 0 1 1 U Methyl butyl ketone UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclohexane UG/L 0 0% 5 GA 0 0 1 1 U Methyl cyclohexane UG/L 0 0% 0 0 1 1 U Methyl cyclohexane UG/L 0 0% 0 0 1 5 U Methyl sobutyl ketone UG/L 0 0% 5 GA 0 0 1 1 U Methyl sobutyl ketone UG/L 0 0% 5 GA 0 0 1 1 U Totare UG/L 0 0% 5 GA 0 0 1 1 U Totars.1,2-Dichloroethene UG/L 0 0% 5 GA <td>Methyl Acetate</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td></td> <td></td> <td>0</td> <td>0</td> <td>1</td> <td>1 U</td>	Methyl Acetate	UG/L	0	0%			0	0	1	1 U
Methyl butyl ketoneUG/L00%5GA0015 UMethyl chlorideUG/L00%5GA0011 UMethyl cyclohexaneUG/L00%00015 UMethyl setoneUG/L00%0015 UMethyl betoneUG/L00%5GA0011 UMethyl setoneUG/L00%5GA0011 UStyreneUG/L00%5GA0011 UTetrachloroetheneUG/L00%5GA0011 UTrans-1,2-DichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloroptopeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloroptopeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloroptopeneUG/L00%5GA0011 UTrichlorofhundUG/L00%5GA0011 USemivolatile Organic CompoundsUG/L00%5 <td>Methyl Tertbutyl Ether</td> <td>UG/L</td> <td>0</td> <td>0%</td> <td></td> <td></td> <td>0</td> <td>0</td> <td>1</td> <td>10</td>	Methyl Tertbutyl Ether	UG/L	0	0%			0	0	1	10
Methyl chloride UG/L 0 0% 5 GA 0 1 1 U Methyl cyclohexane UG/L 0 0% 0 0 1 1 U Methyl cyclohexane UG/L 0 0% 0 0 1 1 U Methyl cyclohexane UG/L 0 0% 0 0 1 5 U Methyl isobutyl ketone UG/L 0 0% 5 GA 0 0 1 5 U Methyl enc chloride UG/L 0 0% 5 GA 0 0 1 1 U Styrene UG/L 0 0% 5 GA 0 0 1 1 U Total Xylenes UG/L 0 0% 5 GA 0 0 1 1 U Trans-1,2-Dichloroptene UG/L 0 0% 5 GA 0 0 1 1 U Trans-1,3-Dichloroptopene UG/L 0 0% 5 GA 0 0 1 1 U Trans-1,	Methyl bromide	UG/L	0	0%	5	GA	0	0	1	1 U
Methyl cyclohexaneUG/L00%0111Methyl cyclohexaneUG/L00%0155Methyl ketoneUG/L00%015UMethyl ketoneUG/L00%5GA0011UStyreneUG/L00%5GA0011UTetrachloroetheneUG/L00%5GA0011UTolueneUG/L00%5GA0011UTotal XylenesUG/L00%5GA0011UTrans-1,2-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloropropeneUG/L00%5GA0011UTrichlorofhareUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0011USemivolatile Organic CompoundsUG/L00%5GA0011U2,4-5UG/L00%5GA0015U2,4-5UG/L00%5GA0015U2,4-5UG/L00%5	Methyl butyl ketone	UG/L	0	0%			0	0	1	5 U
Methyl ethyl ketoneUG/L00%015 UMethyl isobutyl ketoneUG/L00%5GA0011 UStyreneUG/L00%5GA0011 UStyreneUG/L00%5GA0011 UTetrachloroetheneUG/L00%5GA0011 UTotal XylenesUG/L00%5GA0011 UTrans-1,2-DichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloropropeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichlorofluoromethaneUG/L00%5GA0011 UVinyl chlorideUG/L00%5GA0011 USemivolatile Organic CompoundsUG/L00%5GA0011 U2,4,5-TrichlorophenolUG/L00%5GA0011 U2,4,4-DichlorophenolUG/L00%5GA0015 U2,4-DichlorophenolUG/L00%5 </td <td>Methyl chloride</td> <td>UG/L</td> <td>0</td> <td>0%6</td> <td>5</td> <td>GA</td> <td>0</td> <td>0</td> <td>1</td> <td>10</td>	Methyl chloride	UG/L	0	0%6	5	GA	0	0	1	10
Methyl isobutyl ketoneUG/L00%015 UMethylene chlorideUG/L00%5GA0011 UStyreneUG/L00%5GA0011 UTetrachloroetheneUG/L00%5GA0011 UTotal XylenesUG/L00%5GA0011 UTrans-1,2-DichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloropropeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichloroptopeneUG/L00%5GA0011 UTrichlorofluoromethaneUG/L00%5GA0011 UVinyl chlorideUG/L00%5GA0011 USemivolatile Organic CompoundsUG/L00%5GA0011 U2,4,5-TrichlorophenolUG/L00%5GA0015 U2,4,5-TrichlorophenolUG/L00%1GA0015 U2,4-DichlorophenolUG/L00%5GA0015 U2,4-DichlorophenolUG/L00%	Methyl cyclohexane	ĽG/L	0	0%			0	0	1	11
Methylene chlorideUG/L00%5GA011UStyreneUG/L00%5GA0011UTetrachloroetheneUG/L00%5GA0011UTotucneUG/L00%5GA0011UTotal XylenesUG/L00%5GA0013UTrans-1,2-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloropropeneUG/L00%5GA0011UTrichloroetheneUG/L00%5GA0011UTrichlorofluoromethaneUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0011LSemivolatile Organic CompoundsU1GA0015U2,4-5-TrichlorophenolUG/L00%5GA0015U2,4-5-TrichlorophenolUG/L00%5GA0015U2,4-5-TrichlorophenolUG/L00%5GA0 <t< td=""><td>Methyl ethyl ketone</td><td>UG/L</td><td>0</td><td>0%</td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>5 U</td></t<>	Methyl ethyl ketone	UG/L	0	0%			0	0	1	5 U
StyreneUG/L00%5GA011UTetrachloroetheneUG/L00%5GA0011UTolueneUG/L00%5GA0011UTotal XylenesUG/L00%5GA0011UTrans-1,2-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloropteneUG/L00%5GA0011UTrans-1,3-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloropteneUG/L00%5GA0011UTrans-1,3-DichloropteneUG/L00%5GA0011UTrans-1,3-DichloropteneUG/L00%5GA0011UTrans-1,3-DichloroptenetUG/L00%5GA0011UTrichlorofluoromethaneUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0015U2,4,5-TrichlorophenolUG/L0	Methyl isobutyl ketone	UG/L	0	0%			0	0	1	5 U
TetrachloroetheneUG/L00%5GA011UTolueneUG/L00%5GA0011UTotal XylenesUG/L00%5GA0013UTrans-1,2-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloroetheneUG/L00%5GA0011UTrichloroetheneUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0011UVinyl chlorideUG/L00%5GA0011LSemivolatile Organic CompoundsUU0%5GA0011L2,4,5-TricklorophenolUG/L00%1GA0015U2,4-5-TricklorophenolUG/L00%5GA0015U2,4-5-TricklorophenolUG/L00%5GA0015U2,4-5-TricklorophenolUG/L00%5GA0015U2,4-5-TricklorophenolUG/L00	Methylene chloride	UG/L		0%		GA		0	1	ΙU
TolucneUG/L00%5GA0011 UTotal XylenesUG/L00%5GA0013 UTrans-1,2-DichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloropropeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichloroithucromethaneUG/L00%5GA0011 UVinyl chlorideUG/L00%5GA0011 USemivolatile Organic CompoundsUG/L00%5GA0015 U2,4,5-TrichlorophenolUG/L00%1GA0015 U2,4-6-TrichlorophenolUG/L00%5GA0015 U2,4-DinethylphenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%5GA0015 U	Styrene	ĽG/L	0	0%		GA		0	1	I U
Total XylenesUG/L00%5GA0013 UTrans-1,2-DichloroetheneUG/L00%5GA0011 UTrans-1,3-DichloropropeneUG/L00%0.4GA0011 UTrins-1,3-DichloropropeneUG/L00%5GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichlorofluoromethaneUG/L00%5GA0011 UVinyl chlorideUG/L00%2GA0011 USemivolatile Organic CompoundsUUG/L00%5GA0015 U2,4,5-TrichlorophenolUG/L00%1GA0015 U2,4,6-TrichlorophenolUG/L00%5GA0015 U2,4-DichlorophenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%5GA0015 U	Tetrachloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
Trans-1,2-DichloroetheneUG/L00%5GA0011UTrans-1,3-DichloropropeneUG/L00%0.4GA0011UTrichloroetheneUG/L00%5GA0011UTrichlorofluoromethaneUG/L00%5GA0011UVinyl chlorideUG/L00%2GA0011USemivolatile Organic CompoundsUU0%5GA0015U1,1'-BiphenylUG/L00%1GA0015 <u< td="">U2,4,5-TrichlorophenolUG/L00%1GA0015<u< td="">2,4-DichlorophenolUG/L00%5GA0015<u< td="">2,4-DimethylphenolUG/L00%5GA0015<u< td=""></u<></u<></u<></u<>	Toluene	UG/L	0	0%	5	GΛ	0	0	1	1 U
Trans-1,3-DichloropropeneUG/L00%0.4GA0011 UTrichloroetheneUG/L00%5GA0011 UTrichlorofluoromethaneUG/L00%5GA0011 UVinyl chlorideUG/L00%2GA0011 USemivolatile Organic CompoundsUG/L00%5GA0015 U2,4,5-TrichlorophenolUG/L00%1GA0015 U2,4,6-TrichlorophenolUG/L00%5GA0015 U2,4-DichlorophenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%5GA0015 U	Total Xylenes	UG/L	0	0%	5	GA	0	0	1	3 U
Initial for bell of the formation of the	Trans-1,2-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	1.0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	GA	0	()	1	L U
Vinyl chloride UG/L 0 0% 2 GA 0 0 1 1 L Semivolatile Organic Compounds UG/L 0 0% 5 GA 0 0 1 1 L 1,1'-Biphenyl UG/L 0 0% 5 GA 0 0 1 5 U 2,4,5-Trichlorophenol UG/L 0 0% 1 GA 0 0 1 5 U 2,4,6-Trichlorophenol UG/L 0 0% 1 GA 0 0 1 5 U 2,4-Dichlorophenol UG/L 0 0% 5 GA 0 0 1 5 U 2,4-Dichlorophenol UG/L 0 0% 5 GA 0 0 1 5 U 2,4-Dimethylphenol UG/L 0 0% 0 0 1 5 U	Frichloroethene		0	0%6	5	GA	0	0	1	
Semivolatile Organic Compounds 1,1'-Biphenyl UG/L 0 0°6 5 GA 0 0 1 5 U 2.4,5-Tricklorophenol UG/L 0 0%6 1 GA 0 0 1 5 U 2.4,6-Tricklorophenol UG/L 0 0%6 1 GA 0 0 1 5 U 2,4-6-Tricklorophenol UG/L 0 0%6 1 GA 0 0 1 5 U 2,4-Dicklorophenol UG/L 0 0%6 5 GA 0 0 1 5 U 2,4-Dimethylphenol UG/L 0 0%6 0 0 1 5 U	Trichlorofluoromethane		0	0° 6		GA	0		1	
1,1'-BiphenylUG/L00%5GA0015 U2.4,5-TrichlorophenolUG/L00%1GA0015 U2,4,6-TrichlorophenolUG/L00%1GA0015 U2,4-DichlorophenolUG/L00%5GA0015 U2,4-DichlorophenolUG/L00%5GA0015 U2,4-DimethylphenolUG/L00%015 U	Vinyl chloride	UG/L	0	0%0	2	GA	0	0	1	1 L
2.4.5-Trichlorophenol UG/L 0 0% I GA 0 0 1 5 U 2.4.6-Trichlorophenol UG/L 0 0% I GA 0 0 1 5 U 2.4.6-Trichlorophenol UG/L 0 0% I GA 0 0 1 5 U 2.4-Dichlorophenol UG/L 0 0% 5 GA 0 0 1 5 U 2.4-Dimethylphenol UG/L 0 0% 0 0 1 5 U	Semivolatile Organic Compounds									
2.4.6-Trichlorophenol UG/L 0 0% 1 GA 0 0 1 5 U 2.4-Dichlorophenol UG/L 0 0% 5 GA 0 0 1 5 U 2.4-Dichlorophenol UG/L 0 0% 5 GA 0 0 1 5 U 2.4-Dimethylphenol UG/L 0 0% 0 0 1 5 U	1,1'-Biphenyl	UG/L	0	000	5		0		1	
2,4-Dichlorophenol UG/L 0 0% 5 GA 0 1 5 U 2,4-Dimethylphenol UG/L 0 0% 0 0 1 5 U	2,4,5-Trichlorophenol	UG/L	0	0%	ł	GA	0	0	1	
2,4-Dimethylphenol UG/L 0 0% 0 0 1 5 U	2,4,6-Trichlorophenol	UG/L	0	0%	1	GA	0	0	1	5 U
	2,4-Dichlorophenol	UG/L	0	0%0	5	GA	0	0	1	
	2,4-Dimethylphenol	ĽG/L	0	0ª ó			0	0	1	5 U
	2.4-Dinitrophenol	UG/L	0	O. o			0	0	ł	9 L'

P. PIT Projects/Seneca PBC II SEAD-16-17 Construction Completion Report Comments Draft Table 1 sump water data Ms.

Table 1

Sump Water Results Compared to Groundwater Standards Construction Completion Report for SEAD-16 and SEAD-17

Seneca Army Depot Activity

Location Type Sample ID Date QC CODE STUDY ID SEAD-16 SUMP WATER 16WWT16-0703 07/03/07 SA RA

	Groundwater Exceed								
Parameter	Units	Maximum	Frequency	Standard	Criteria	Standard	Detect	Analyses	Value (Q)
2,4-Dinitrotoluene	UG/L	0	0%	5	GA	0	0	1	5 U
2,6-Dinitrotoluene	UG/L	0	0%	5	GA	0	0	1	5 U
2-Chloronaphthalene	UG/L	0	0%			0	0	I	5 U
2-Chlorophenol	UG/L	0	0%			0	0	1	5 U
2-Methylnaphthalene	UG/L	0	0%			0	0	1	5 U
2-Methylphenol	UG/L	0	0%			0	0	1	5 U
2-Nitroaniline	UG/L	0	0%	5	GA	0	0	1	9 U
2-Nitrophenol	UG/L	0	0%	I	GA	0	0	1	5 U
3,3'-Dichlorobenzidine	UG/L	0	0%	5	GA	0	0	1	5 U
3-Nitroaniline	UG/L	0	0%	5	GA	0	0	1	9 U
4,6-Dinitro-2-methylphenol	UG/L	0	0%	1	GΛ	0	0	I	9 U
4-Bromophenyl phenyl ether	UG/L	0	0%			0	0	1	5 U
4-Chloro-3-methylphenol	UG/L	0	0%	1	GA	0	0	1	5 U
4-Chloroaniline	UG/L	0	0%	5	GA	0	0	1	5 U
4-Chlorophenyl phenyl ether	UG/L	0	0%			0	0	1	5 U
4-Methylphenol	UG/L	0	0%			0	0	I	5 U
4-Nitroaniline	UG/L	0	0%	5	GA	0	0	ł	9 U
4-Nitrophenol	UG/L	0	0%	1	GA	0	0	1	9 U
Acenaphthene	UG/L	0	0%			0	0	1	5 U
Acenaphthylene	UG/L	0	0%			0	0	1	5 U
Acetophenone	UG/L	0	0%			0	0	1	5 U
Anthracene	UG/L	0	0%			0	0	1	5 U
Atrazine	UG/L	0	0%	7.5	GA	0	0	1	5 U
Benzaldehyde	UG/L	0	0%			0	0	1	5 U
Benzo(a)anthracene	UG/L	0	0%			0	0	1	5 U
Benzo(a)pyrene	UG/L	0	0%	0	GA	0	0	I	5 U
Benzo(b)fluoranthene	UG/L	0	0%			0	0	I	5 U
Benzo(ghi)perylene	UG/L	0 0	0% 0%			0	0	1	5 U
Benzo(k)fluoranthene	UG/L UG/L	0	0%	5	GA	0 0	0		5 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	1	GA	0	0	1	5 U
Bis(2-Chloroethyl)ether Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	GA	0	0	1	5 U 5 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	GA	0	0	1	5 U
Butylbenzylphthalate	UG/L	0	0%	5	UA	0	0	1	5 U
Caprolactam	UG/L	0	0%			0	0	1	5 U
Carbazole	UG/L	0	0%			0	0	1	5 U
Chrysene	UG/L	0	0%			0	0	1	5 U
Di-n-butylphthalate	UG/L	0	0%	50	GA	0	0	1	5 U
Di-n-octylphthalate	UG/L	0	0%	50	0A	0	0	I	5 U
Dibenz(a,h)anthracene	UG/L	0	0%			Ő	0	1	5 U
Dibenzofuran	UG/L	0	0%			0	0		5 U
Diethyl phthalate	UG/L	0	0%			Ő	Ő	1	5 U
Dimethylphthalate	UG/L	0	0%			0	0	1	5 U
Fluoranthene	UG/L	0	0%			0	0	1	5 U
Fluorene	UG/L	0	0%0			0	0	1	5 U
Hexachlorobenzene	UG/L	0	0%	0.04	GA	0	0	T	5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	GA	0	0	1	5 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	GA	0	0	1	5 U
Hexachloroethane	UG/L	0	0%	5	GA	0	0	I	5 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0° o			0	0	1	5 U
Isophorone	UG/L	0	0%			0	0	1	5 U
N-Nitrosodiphenylamine	UG/L	0	O°,			0	0	1	5 U
N-Nitrosodipropylamine	ĽG/L	0	0%			0	0	1	5 U
Naphthalene	UG/L	0	0%			0	0	1	5 U
Nitrobenzene	UG/L	0	0%	0.4	GA	0	0	1	5 U
Pentachlorophenol	UG/L	0	0.50	ĩ	GA	0	0	1	9 U
Phenanthrene	1100	0					4		
Phenol	UG/L UG/L	0 0	0% 0%	1	GΑ	0	0	1	5 U

P. P.T. Projects Seneca PBC II SEAD 16-17 Construction Completion Report Comments Draft Table 1 sump water data vis

Table 1

Sump Water Results Compared to Groundwater Standards Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Activity

Location Type Sample ID Date QC CODE STUDY ID

SEAD-16
SUMP WATER
16WWT16-0703
07/03/07
SA
RA

				Groundwater		Exceed			
Parameter	Units	Maximum	Frequency	Standard	Criteria ¹	Standard	Detect	Analyses	Value (Q)
Pyrene	UG/L	0	0%			0	0	1	5 U
Metals									
Aluminum	UG/L	203	100%	50	SEC	1	1	1	E- 3: 11- 1 203
Antimony	UG/L	118	100%	3	GA	1	1	1	2 - HE - 2118
Arsenic	UG/L	0	0%	10	MCL	0	0	1	4.2 U
Barium	UG/L	279	100%	1000	GA	0	1	1	279
Beryllium	UG/L	0.5	100%	4	MCL	0	1	1	0.5 B
Cadmium	UG/L	1.2	100%	5	GA	0	1	1	1.2
Calcium	UG/L	111000	100%			0	1	1	111000
Chromium	UG/L	3.9	100%	50	GA	0	1	1	3.9 B
Cobalt	UG/L	0	0%			0	0	1	0.89 U
Copper	UG/L	522	100%	200	GA	1	1	1	522
Iron	UG/L	2680	100%	300	GA	1	1	1	2680
Lead	UG/L	1970	100%	15	MCL	1	1	1	1970
Magnesium	UG/L	22300	100%			0	1	1	22300
Manganese	UG/L	109	100%	300	GA	0	1	1	109
Mercury	UG/L	19	100%	0.7	GA	1	1	1	231.41919
Nickel	UG/L	6.1	100%	100	GA	0	1	1	6.1 B
Potassium	UG/L	6020	100%			0	1	1	6020
Selenium	UG/L	0	0%	10	GA	0	0	1	6.1 U
Silver	UG/L	0	0%	50	GA	0	0	1	1 U
Sodium	UG/L	37800	100%	20000	GA	1	1	1	37800
Thallium	UG/L	0	0%	2	MCL	0	0	1	6.4 U
Vanadium	UG/L	0	0%			0	0	1	0.78 U
Zinc	UG/L	600	100%	5000	SEC	0	1	1	600

Note(s):

U = compound was not detected

B = the result is below reporting limit but above method detection limit

Shading indicates concentration above action level

 GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998) MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001) SEC = Secondary Drinking Water Regulations - Drinking Water Standards and Health Advisory (EPA 82-B-00-001)

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Response to USEPA Comments dated 021208 Draft Construction Completion Report for SEAD-16 and SEAD-17 Seneca Army Depot Romulus, New York

Comments Dated: July 10, 2008 (email)

Date of Comment Response: September 09, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: The Army's response to EPA Comment 3 is inadequate. Based on the issues identified in EPA's previous Comment 3 (i.e., concerns over potential low bias in the metals results as well as in the precision and representativeness of the metal results) and the data validation in Appendix H, concerns remain over how accurately the results document that the Record of Decision (ROD) dictated remedial goals have been achieved with the desired certainty. While, the Data Validation Memorandum provides an overview of the data validation, the level of detail is insufficient to ensure the data were properly validated and assessed. Please provide a complete electronic copy of the data package(s) received from the laboratory used by the Army in addition to the information included in Appendix H. Alternatively, please revise the Report to provide a validation memorandum which presents the actual values for each of the QC exceedances observed, a table of all results including those that were rejected and subsequently reanalyzed (e.g., the initial analysis of 16EXPR-G5-01 and 16EXPR-G5-02), a discussion on the differences between the EPA method and the facility's procedures, and a thorough assessment of the impact of the observed QC exceedances on the data.

Response 1: All data collected by Parsons have been validated by chemists according to the EPA Region 2 SOPs (on-line resources available at <u>http://www.epa.gov/region02/qa/documents.htm</u>). The qualifiers were added according to the Region 2 SOPs. The detailed data validation results and discussions including QC exceedance details are presented in Appendix H of the CCR. More specifically:

- Noncompliance matrix spike results are presented in Table H-3.
- LCS exceedance results are presented in Table H-4.
- Noncompliance blank results are presented in Table H-5.
- Duplicate analysis (including field duplicate and laboratory duplicate) %RPD exceedance results are presented in Table H-7.
- Calibration noncompliance results are presented in Table H-8.
- CRDL standard check noncompliance results are listed in Table H-9.
- Serial dilution noncompliance results are summarized in Table H-10.
- Percentage of solids noncompliance results are presented in Table H-11.

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All the affected results (also shown in the above tables) were qualified in accordance with the Region 2 SOPs and Table H-2 summarizes all non-usable results due to the QC exceedances. Although QC non-compliances were observed for the project, the data have all been validated accordingly and non-usable results were not used for project management decision. In other words, all the results used in the CCR for the project management decision are usable according to the Region 2 SOPs, although some are considered "estimated" values. Further, there is no indication of consistent low bias based on the review of the QC data.

In summary, it is the Army's position that there is no evidence the data produced for the project are biased low and the rationales are summarized below:

- The laboratory used for this project (Test American Laboratories, Inc., Amherst, NY) is a certified laboratory for New York State's Contract Laboratory Program, Analytical Services Protocol (administered by NYSDOH).
- The QC data that support the sample results do not suggest that there is a biased low trend.
- The data have been validated in accordance with the EPA Region 2 SOPs.

Although the results for soil confirmation samples reported by the Army's laboratory were generally lower than the EPA split sample results, relative percent difference (RPD) values computed for these paired analyses, exclusive of the results reported by the two laboratories for 16EXPR-F9-02, were less than 120%, which is Region 2's limit for judging whether the duplicate pair data reported by a single laboratory are usable or not. Therefore, with the exception of the results for the questionable sample 16EXPR-F9-02, the noted differences between split sample results obtained would not result in rejection of any of the data. The Army further believes that it is necessary to remind the EPA commenter that the 120% threshold is for duplicate samples that are handled in the same manner and sent to one laboratory for analysis via identical methods; there is no threshold guidance value defined for RPD for interlaboratory comparisons. As such, achieving agreement within the single laboratory duplicate pair RPD threshold value (120%) is a very conservative demonstration of the data acceptability as there are differences between the split pairs regarding analytical operations due to the different laboratories used.

Ultimately, soil associated with questionable sample 16EXPR-F9-02 was excavated and disposed off-site in accordance with the agreement made between the EPA and the Army due to the noted data variation, which called for the larger of the split sample results to be used as the basis of the decision, so the failure of this single sample is no longer of importance. Subsequent to the excavation of soil at location 16EXPR-F9-02, three new samples (a floor sample/duplicate pair, 16EXFL-F9-01/16EXFL-F9-02, 13.5 mg/Kg/10.1 mg/Kg; perimeter sample 16EXPR-F9-03, 8.3 mg/Kg) were collected from the area and analyzed for lead. As is shown above, all lead results surrounding the former location of questionable sample 16EXPR-F9-02 are below the defined cleanup goal for lead.

Further, it is important to note that while the Army's data have been validated, we have not received information from the EPA that indicates that their data were validated beyond the level that is normally done in the laboratory. Without this independent verification of the EPA laboratory results, Parsons and

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the Army believe that it is inappropriate to use the split sample results produced by the EPA lab to criticize the results provided by the Army's laboratory. Parsons and the Army were unable to evaluate the differences between the split sample results because we were not provided the detailed report of the EPA split sample results.

The Army would be glad to submit the original hardcopy data package for your review if requested.

Comment 2: The Army's response to EPA Comment 4 is inadequate. The comment response indicates that the standing water removed from the basement of Building S-311 was pumped into the on-site water truck and used for dust control of soils within the excavation areas at SEAD-16. The analytical results obtained from the analysis of the basement water indicate that it contained concentrations of metals above Maximum Contaminant Levels (MCLs). The described use of the pumped out water was not an EPA authorized use; please revise the Report to indicate this. Once a material considered a waste is removed from its original location, current RCRA regulations require that it be managed as a waste. If reuse/recycling options are to be considered, analytical results need to be available to support the option.

Response 2: The EPA's original comment on the Draft SEAD-16 and SEAD-17 Construction Completion Report is presented below.

"Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix I. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document."

The revision to Section 3.4.2 provided the location where the analytical results for the water were presented within the Draft Final Construction Completion Report (Appendix J) and the response included a comparison to New York State GA Groundwater standards, which indicates that several metals in the standing water were observed at concentrations in excess of GA groundwater standards.

Language incorporated into the Draft Final Completion Report indicating this will be modified to read as follows (Reference last paragraph of Section 3.4.2 of Completion Report):

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

As is indicated in the proposed revised text for the Construction Completion Report, the soil upon which the Building 311 water was used for dust suppression was subsequently excavated and removed from the

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site. The water was not allowed to pond or puddle on the site, and controls were in place to prevent the water from running onto other areas of the greater site.

Confirmatory soil sample results for samples collected from beneath the areas where soils were sprayed and then excavated indicate that there were no exceedances of cleanup goals, so it is not likely that metals entrained or dissolved in the water impacted the underlying soils. Groundwater sampling data collected from SEAD-16 after the completion of the removal action, further suggests that the groundwater underlying the site has not been impacted as a result of this water's use as groundwater concentrations are generally lower now than previously reported during the RI.

As Section 3.4.2 is currently written, there is no claim or representation that the EPA approved of the use of the water for dust suppression. Comment 3: The Army's response to EPA Comment 8 is inadequate. The Army has indicated that when EPA split sample data and the Army's split sample data were compared, it was agreed that the higher of the two values would be used to determine when the ROD required remedial levels had been obtained. However, when Army duplicate data was compared, the two values were averaged, and an EPA citation that is found in the Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, USEPA, 2004 is used as reference for this approach. This stance is inconsistent and unsubstantiated, as EPA guidance for liquid media is not transferable to solids, and National Pollutant Discharge Elimination System (NPDES) data is intended to be averaged over a typical 24-hour discharge period, which is not similar to the remedial conditions at Seneca. Further, the stated Report objectives indicate that data will be compared to the ROD clean-up levels to determine if the remedy is complete, without any reference to averaging the data. Revise the Report so that whenever two data points are available to define site conditions, the higher of the two values is used. If this impacts the determination that the remedial action is complete, revise the Report to indicate where additional excavation and sampling is warranted. It may be necessary to present the results and associated sampling points visually to clearly make this assessment.

Response 3: As has been discussed with all parties (i.e., EPA, NYSDEC, NYSDOH) repeatedly during the course of the CERCLA-related activities at the Seneca Army Depot, it is the Army position that decisions relative to completion of work are based on site-wide assessments and determinations, and not on the basis of individual sample results. This has been, and will continue to be, the Army's process and basis of action, and it is our belief that this approach and process is reasonable and appropriate, and compliant with the requirements of CERCLA.

The lead in soil cleanup goal for SEAD-17 was 1250 mg/Kg. Sixty-four soil samples were collected, characterized, and qualified as appropriate during the confirmation sampling, and these samples were used as the basis of the Army's decisions made at SEAD-17. These samples were collected from 62 locations, with sample/duplicate pairs being collected at two locations. After reflecting on the EPA's comment, the Army believes that there are four alternative ways that the available data could have been evaluated and presented. These are summarized below:

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- 1. All 64 data points used;
- 2. Data from all 62 locations considered, with the maximum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach specified in the EPA's comment);
- 3. Data from all 62 locations considered, with the minimum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations;
- 4. Data from all 62 locations considered, with the average result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach used by the Army).

Description	Minimum Lead Concentration Detected at SEAD-17 (mg/Kg)	Maximum Lead Concentration Detected at SEAD-17 (mg/Kg)	Average Lead Concentration Detected at SEAD-17 (mg/Kg)	95 th UCL Concentration of Lead Detected at SEAD-17 (mg/Kg)
Approach 1: 64 samples collected, all data points considered	4.8	1540	350.5	643.7
Approach 2: 62 data points (use MAXIMUM value for sample/duplicate pairs) EPA approach	4.8	1540	350	648.9
Approach 3: 62 data points (use MINIMUM value for sample/duplicate pairs) EPA approach	4.8	1120	336.5	611.9
Approach 4: 62 data points (use AVERAGE value for sample/duplicate pairs) Army approach	4.8	1121	343.2	627.5

Summary results for each of these alternative approaches are presented below:

Regardless of the data analysis and assessment approach that was used for the identified dataset, it is the Army's contention that the lead cleanup goal has been achieved on a site-wide basis. In each case, the 95th UCL value for lead in soil is roughly half of the cleanup goal specified. Under two approaches, the maximum value reported exceeds the cleanup goal. Examination of the full confirmatory soil data set for SEAD-17 shows that the highest value is 1,540 "J" mg/Kg, and the next highest value is 1,120 mg/Kg. The presence of this lone value above the cleanup goal suggests that there is no wide-spread problem at the site, and in fact, the duplicate associated with the sample value of concern further supports this belief, as the value of lead reported for it was 702 "J" mg/Kg. Both of the reported values reported for this

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location are equally likely to be correct, and as such, the best one can do within reason is to presume that the real level of lead lies somewhere in the middle (e.g., at the average concentration). In the Army's opinion, the degree of variation shown at this one location is more suggestive of soil heterogeneity rather than an indication of a possible wide-spread contaminated zone at the site. Simply put, data from the other sixty-one locations does not support this fear, as they are all lower than the cleanup goal.

The EPA's approach (see Approach 2 above) which uses only the maximum value from sample/duplicate pairs skews the assessment of what is presented on a site-wide and a location-by-location basis. Approach 3 also skews the site-wide and location-by-location assessment of the data, but in this case to the opposite pole. Approach 1 gives more credence to the results found at two locations than to the other 60 locations that are within the site's dataset, and as such, one could argue that this approach also skews the analysis. The approach selected by the Army gives equal weight to all sample locations within the dataset, and in our opinion, produces a fair representation of what is present on a site-wide basis. Under the Army's approach, results from each individual location (i.e., 62 locations) in the SEAD-17 area affected were compared to the cleanup value, and data from all of the locations were found to be lower than the goal.

As is currently documented in the Construction Completion Report, the lead cleanup goal was achieved in accordance with common practices that have been used by the Army throughout all investigative and remedial actions at the Depot since the late 1990s, which includes averaging the results of sample/duplicate pairs in data presentations. Parsons and the Army adopted the practice of averaging the results of samples and sample duplicates and have reported and analyzed data presented to the agency in this manner since that time. This is referenced in several of the reports that have been issued to the EPA since that time. The EPA has not previously commented on this approach in any of this other work. This procedure is also consistent with the Army and EPA's approach that has been used at other Army installations as is documented in the EPA Superfund Record of Decision for Fort Devens Operable Unit (Refer footnotes 03 to Tables 13 _ 15 and of ROD found at http://www.epa.gov/superfund/sites/rods/fulltext/r0196119.pdf).

Finally, the Army believes that it is appropriate to note that the lead in soil cleanup value established for SEAD-17 (i.e., 1250 mg/Kg) is itself an average, based on the range defined (750 – 1750 mg/Kg) in the document "*Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*" (USEPA, December 1996) for an acceptable residual risk under an industrial use scenario