50-07

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
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Denise M. Sheehan
Acting
Commissioner

File
SEAD 1, 2
RCRA
closure

September 29, 2005

Mr. Stephen Absolom
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, New Your 14541-5001

Dear Mr. Absolom:

Re: SEDA - Facility EPA I.D. No. NY0213820830
Building 307, Hazardous Waste Storage Facility &
Building 301, PCB Transformer Storage Building
Closure Certification Approval

This letter is to confirm the approval by the Department of the Closure Certification prepared and signed by Thomas Andrews, P.E., Parsons, for Building 307, Hazardous Waste Storage Facility (SEAD-1) and Building 301, PCB Transformer Storage Building (SEAD-2) pursuant to 6NYCRR Part 373. Thomas Andrews is a Professional Engineer registered in New York State. The Closure Certification was attached to the September 28, 2005 letter from Todd Heino, P.E., also of Parsons. The authority to operate these buildings for the management of hazardous waste under Part 373 is hereby terminated. These buildings are now closed under Part 373.

Although these buildings are now considered closed under Part 373, both buildings exhibit some levels of contamination both inside and outside of the buildings, as shown in the Parsons' report dated September 9, 2005 and earlier reports. The contamination is unrelated to their use under Part 373. These buildings and surrounding areas should be restricted to industrial-type usage. In our September 28, 2005 conversation, you stated that these buildings are in the area designated with an industrial land use restriction in the Record of Decision (ROD), and that any future use would be legally limited so as to not allow residential, child care, schools, and similar usage.

Because of the contamination that exists inside and outside of the buildings, we are referring this to the Department's Division of Environmental Remediation for their evaluation. If they determine that anything else is required for these two building and the surrounding areas, they will so advise you.

If you have any questions, please call me at 518-402-8610, or you may e-mail me at: jwdolen@gw.dec.state.ny.us.

Very truly yours,

James W. Dolen, Jr. P.E.
Section Chief

cc (via e-mail):
J. Reidy, USEPA
W. Palomino, USEPA
P. Counterman, DSHM
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File
RCRA Closure
SEAD 1 & 2

PARSONS

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September 9, 2005

Mr. James Dolen, Jr.
New York State Department of Environmental Conservation
Division of Solid and Hazardous Waste
Bureau of Hazardous Waste Regulation, 8th Floor
625 Broadway
Albany, New York 12233-7251

Subject: Response to Comments on the Draft Closure Plan dated September 4, 2003, Building 307, Hazardous Waste Storage Facility and Building 301, PCB Transformer Storage Building, Seneca Army Depot Activity, Romulus, New York NYSDEC Site No.: 8-50-006

Dear Mr. Dolen:

On September 3, 2003, Parsons Engineering Science, Inc. (Parsons) submitted the Draft Closure Report for Building 307, Hazardous Waste Storage Facility (SEAD-1) and Building 301, Transformer Storage Building (SEAD-2) on behalf of the U.S. Army at the Seneca Army Depot Activity in Romulus, New York. On October 2, 2003, the New York State Department of Environmental Conservation (NYSDEC), Division of Solid and Hazardous Materials issued comments on the Draft Closure Report to Mr. Stephen Absolom of the Seneca Army Depot Activity. These comments were received by Parsons in July 2004. In summary, the NYSDEC's comments indicated that:

1 Additional decontamination and confirmational sampling was needed at both buildings to reduce the amount of lead (Pb) left at the sites; and
2 Clarification was needed to explain the exceedances noted in exterior samples for zinc at Building 307 and for organics at Building 301.

The purpose of this letter report is to provide the NYSDEC with additional information requested by the NYSDEC. Additional information and answers to these questions and concerns are provided below.

Repeat Decontamination of SEAD-1 and SEAD-2 buildings

After receiving and reviewing the NYSDEC's comments regarding the Draft RCRA Closure Report, the Army and Parsons held several discussions regarding possible sources of lead contributing to the residual levels of contamination identified in confirmational rinseate samples at the two sites. Both the Army and Parsons found it unusual that the decontamination process had been successful in removing numerous organic and inorganic contaminants from floor surfaces, yet was unsuccessful in effectively removing lead.

Further, based on the historic uses of both facilities, there was no obvious reason why lead, to the exclusion of all other compounds, should be found on the horizontal vertical surfaces.

Based on these discussions, the Army and Parsons decided that the most likely source of the identified residual lead at the two sites was either miscellaneous debris (e.g., soil or windblown dust from the outside) or lead intermixed with building materials and coatings (e.g., paint, epoxy floor coatings, wall tile, etc.) used at the two sites. To address these possibilities, the Army commissioned Parsons to return to the two buildings in September 2004 to conduct visual inspections and to collect building material and coating samples for laboratory analysis of lead content.

Figure 1 shows the interior of Building 307 (SEAD-1) at the time of Parsons' re-inspection in September 2004. As shown, there is a substantive accumulation of dust and debris in the building, presumably entering the building through the structure's inherent passive ventilation system. Building 307 is a corrugated sheet metal building that sits around and above, an independent, monolithic concrete floor and berm structure, which measures approximately 40 feet (ft.) by 50 ft in size. At the base (between the metal side walls and the concrete containment berm) and top (between the metal; side walls and the over hanging, peaked metal roof) of the building, there are openings that allow ambient air to flow through the building. These openings comprise the building's passive ventilation system which prohibited the building up of fumes within the building. Given the amount of windblown debris shown inside of SEAD-1, one possible factor contributing to the elevated lead found at this site is dust and debris from the surrounding area penetrating the building through the passive ventilation system. Based on other work conducted at the Depot under continuing CERCLA investigations and actions, lead is a known contaminant in soil at many sites throughout the Depot. Based on data provided in the original closure report, lead was identified in all surface samples collected at locations immediately exterior to Building 307, ranging in concentrations from 29.5 to 116 mg/Kg (average 64.6 mg/Kg).

Building 301 (SEAD-2) does not have passive ventilation comparable to that shown for Building 307 (SEAD-1), yet rinseate samples collected from this site also contained elevated levels of lead. Rinseate samples for Building 301 (SEAD-2) were collected inside and outside the building, on the loading dock platform. Thus, for six of the prior rinseate sample results, windblown debris and dust could be a contributor to the identified elevated levels of lead. Again, surface soil samples collected from locations surrounding the exterior of this building show the presence of lead at concentrations ranging from 9.5 to 1,570 mg/Kg (average 190.6 mg/Kg). All of the highest lead concentrations found in surface soils are located at the northeast corner of the building. The highest lead value detected in the surface soils was found along the eastern side of Building 301 at the location between the loading dock and the railroad spur line that is located within 3 feet of the building.

Building and Coating Material Samples

The presence of elevated concentrations of lead in the rinseate samples collected within Building 301 (SEAD-2) suggest that another source, such as the presence of lead in building materials or finishes, also contribute to the levels of the lead found in the final rinseate samples reported. To investigate this possibility, Parsons collected building and coating material samples (mostly from Building 301) for analysis of total lead in September 2004. Summary results of these samples were obtained in October 2004 and are summarized in **Table 1**, while the laboratory analysis sheets are provided in **Appendix A**. As is indicated by the review of these data, lead is identified in all material of construction components sampled, with the highest concentration identified (10.5 percent) being found in the paint that is on the inside and outside of the doors at Building 301 (SEAD-2). Also of note is the concentration of lead found in the asphalt sample collected from the east side platform at SEAD-2 (Building 301).

Comparison of Lead Levels to HUD Standards and Evaluation of Alternative Decontamination Strategies

With the determination that lead was present in building and building coating materials at the two sites, Parsons returned to Building 301 (SEAD-2) in April of 2005 to conduct additional experiments to evaluate alternative decontamination procedures that could be used to more effectively remove residual levels of lead identified in the rinseate samples and to obtain data comparing NYSDEC's defined rinseate sample trigger (i.e., NYSDEC's GA groundwater standards) to the US Housing and Urban Development's (HUD's) Residential lead standards for structures and surrounding areas. Alternative decontamination techniques evaluated included HEPA vacuuming surfaces combined with washing surfaces with distilled, deionized (DI) water; HEPA vacuuming combined with washing surfaces with DI water and Ledizolv® solution; and HEPA vacuuming combined with washing surfaces with a DI water and tri-sodium phosphate (TSP) cleaning solutions. HEPA vacuuming and the use of the Ledizolv® or tri-sodium phosphate (TSP) cleaning solutions are HUD recommended techniques for lead abatement and cleaning. These cleaning and comparison experiments were performed at three of the sample grid locations (i.e., grid locations 43, 65 and 90) located at Building 301 (SEAD-2) where the prior post-decontamination, rinseate sampling results had shown the highest residual lead levels.

Upon first arrival at the site, Building 301 was inspected. The east facing entry door could not be opened sufficiently to allow for access, so the north facing roll-up door was used for access into the building. Upon entrance, a ruptured fire extinguisher was discovered in the northwest corner of the building adjacent to the ramp and west wall. Greenish-yellow power was visible along the west wall and floor intersection. The interior floor of the building was littered with dead insects, with most of the dead insects congregated near windows openings. Red dust was also observed at the threshold of the north facing door. Prior to commencing the experimental work, both doors at Building 301 were encased in 6-mil plastic sheeting to minimize the potential spread of lead paint off the surfaces.

A 2 foot by 2 foot (ft) laminated sheet was used to mark the outlines of each of the proposed sampling locations with chalk; as indicated, rinseate grid squares 43, 65, and 90 were selected for wipe sampling (per HUD procedures) and further decontamination experiments, as defined above. Grid locations 43 and 65 are located inside Building 301 and are located on a concrete floor that has been painted with an epoxy-based paint to seal any potential foundation cracks. Grid location 90 is located at the northeast corner of the exterior loading dock, at a place where the concrete dock is covered with deteriorating, coarse, asphalt and gravel covering that was previously applied to smoother concrete surface of the dock to enhance footing and prevent slipping. See the attached figure for approximate location of each of the sample sites.

Prior to re-cleaning, a baseline wipe sample was collected from a centrally located 1 ft by 1 ft square within each of the 2 ft by 2 ft grid cells and placed into a container for subsequent chemical analysis for total lead. Each of the wipe samples was completed using a water moistened piece of cheesecloth, that was moved in a recurrent left to right, down, right to left, and down pattern until all portions of the 1 square foot area had been wetted, once. The wipe sample at grid cell 90 was collected first, followed by samples at grids 43 and 65. Observations made during the collection of initial wipe samples included the presences of grit and grime on the wipe collected from location 90 and the apparent presence of small metal fragments on the asphalt surface of the loading dock, and the presence of insect fragments on the wipe samples collected inside of the building.

Once the preliminary wipe samples were collected and packaged, preliminary, baseline rinseate samples were collected from each of the test grid locations for analysis. Grid sample 65 was collected first, followed by 43 and then 90. Rinseate samples were collected by placing an inert and pre-cleaned spill berm around the centrally located 1 ft by 1 ft surface at each grid site previously wiped, and pouring in approximately 1 to 1.5 liters of distilled water that was allowed to stand for a minimum of 10 minutes. After allowing the water to stand, a peristaltic pump was used to collect rinseate water samples from the sampling locations. The spill berms did not fully contain the distilled water added, but in each case enough was recovered to allow for the analysis of total lead. In all cases the recovered rinseate water was discolored, with the samples from sites 43 and 65 being darker than that collected from location 90.

Once the preliminary baseline rinseate samples were collected and packaged for shipment from each test location, grid 90 was scrubbed with a brush and a Ledizolv® and water solution and the wash solution was allowed to sit uncovered for 10 minutes.

Grid location 43 was then brush scrubbed with a TSP/water solution. Once the scrubbing/wash step was completed, the surface of location 43 was wet vacuumed to clean the surface, and then it was successively washed with DI water and vacuumed cleaned three times prior to being covered with an inverted Rubbermaid® dishpan that was taped to the floor to minimize potential outside sources of contaminants till post-cleaning samples were collected.

A similar washing, vacuuming and covering process was then performed at grid location 65; only in this case, the sequence only used three repetitions of washing with DI water followed by wet vacuuming, and then covering with a dishpan.

Grid location 90 was then wet vacuumed, washed with DI water and vacuumed cleaned three times prior to being covered with a dishpan to minimize outside sources of contaminants till samples were collected.

Field personnel then reentered Building 301, closed all exterior doors (to minimize wind currents and dust) and prepared to collect post-cleaning wipe and rinseate samples from both of the tested grid locations. Post-cleaning wipe samples were collected from the 1 ft by 1 ft area at grid locations 43 and 65 first, using an equivalent protocol to that described above. Once these wipe samples were collected and packaged, post-cleaning rinseate samples were collected, using the previously describe procedure, at each test locations. Once, sampling at both internal grid locations was complete, the exterior door was reopened, and the field personnel performed similar steps at grid location 90 on the loading dock, exterior to the building.

All sampling equipment was then collected and decontaminated, all recovered wash solutions and decontamination wastes were consolidated, collected samples were packaged and shipped to the laboratory for analysis and field personnel left the site.

The results of the recleaning experiments are summarized in **Table 2**, below. Briefly, results from one of the post-cleaning rinseate samples (DI water only) meets the NYSDEC's GA groundwater quality standard set for the decontamination work, one (TSP/water) is minimally higher than the defined standard, and the Ledizolv®/water process fail. The significant result difference noted between the Ledizolv®/water process and the other two cleaning methods is believed to be more associated with the coarseness of the exterior surface compared to that of the epoxy-painted interior floor, which minimizes ones ability to adequately clean all crevices that are present at the site.

All of the post-cleaning wipe samples show residual lead concentrations below HUD's residential Lead Housing Standard of 40 ug/ft^2 (TSCA Section 403) for dust on floors. The results obtained for grid 90 are suspect however, because it is presumed that the wipe sample only represents the concentration of lead present on the top of the asphalt and gravel covering, and does not adequately describe the likely levels of lead present in the crevices between the gravel pieces. Perhaps most important from the review of the results is that it is appears that NYSDEC's defined GA standard for decontamination, is more stringent than HUD's residential use standards for lead.

June 2005 Decontamination of SEAD-1 (Building 307) and SEAD-2 (Building 301)

Parsons field personnel returned to SEADs 1 and 2 at SEDA between June 8 and 11, 2005 to perform additional decontamination and sampling operations for both facilities.

Upon arrival, Building 307 (SEAD-1) was empty of all containers and equipment, but as is shown in **Figure 1**, the floor was covered with dirt and plant matter that had blown into the building through the passive ventilation system. The floor was HEPA vacuumed, and then a polyethylene sheet was installed around the lower portion of the interior walls of the building to prevent windblown dusts from entering via this route. The bottom of the polyethylene sheeting was attached to the interior surface of the integral containment berm wall, at a point above the floor level. No polyethylene barrier was placed between the top of the sidewalls and the roof to prevent dusts from entering at this location.

Once the lower seal was installed, the interior floor of the building was divided into 100 grid cells, each measuring approximately 4ft. by 5 ft. in size. Once the grid was established, the entire floor was systematically rinsed and wet vacuumed to remove dirt and debris that had resettled during the installation of the polyethylene barrier around the lower part of the passive ventilation system. Once the first rinse and wet vacuum sequence was completed, the floor was systematically scrub washed using a stiff-bristle brush, and a detergent (Alconox) and potable water solution. Each grid cell was thoroughly scrubbed first, and then the cell was wet vacuumed to remove excess wash water and debris, before work began at the next grid cell. Each grid cell was then systematically rinsed with potable water, and wet vacuumed a second and third time before the decontamination was considered complete. A copy of the grid cell configuration numbering system used at Building 307 (SEAD-1) is provided as an attachment to this letter report.

A random number generator was then used to select 17 grid cell locations where confirmational rinseate samples would be collected. Each sample was collected in accordance with NYSDEC prescribed procedures, and all samples were sent to a contract analytical laboratory for analysis of total lead concentration.

As was previously noted in April 2005, a ruptured fire extinguisher was present in the northwest corner of Building 301 (SEAD-2), adjacent to the ramp and west wall. Greenish-yellow powder, presumably from the ruptured fire-extinguisher, was visible along the west wall and floor intersection. The interior floor of the building was littered with dead insects, most of which were found congregated at the locations of windows. Red dust, presumed to be lead oxide paint that had weathered and fallen off the doors, was observed in the threshold and surrounding area of the north and east facing doors. Photographs of the interior of Building 301 (SEAD-2) prior to the June 2005 decontamination are provided in **Figures 2** and **3**. A copy of the grid cell configuration numbering system used at Building 301 (SEAD-2) is provided as an attachment to this letter report.

At Building 301 (SEAD-2) the decontamination process used was similar to that defined above, but slightly modified to address building specific issues. First, the two, lead-paint covered entry doors at Building 301 were removed, encased in plastic, and staged at a location away from the building. Both entry points were then covered and sealed with 6-mil polyethylene to prevent windblown debris from entering the building during the ensuing decontamination process. Once the doors were removed, the interior floor and the top surface of the loading dock were HEPA-vacuumed to remove all gross surface

contamination (dusts, powder, and dead insects) that had accumulated at the building. Upon completion of the gross vacuuming, red chips, presumed to be lead-paint chips, were observed adhering to the asphalt and gravel sealer that had been applied to the concrete surface of the loading dock. After additional attempts to vacuum and brush these chips off the asphalt/tar surface of the loading dock failed, it was decided that the sealer would have to be physically removed to eliminate the likely lead paint residue. A photograph of the asphalt/gravel traction covering applied over the loading dock surface is shown as **Figure 4**.

Field personnel removed the asphalt/gravel sealer applied to the loading dock surfaces by heating it with a propane-fired heater and scraping the softened asphalt/gravel mix off the underlying concrete surface using a shovel/spade. The asphalt/gravel mixture removed was collected and placed into a 55-gallon drum for disposal. Approximately 40 percent of the 55-gallon drum was filled with the asphalt/gravel mix at the end of the work; however, a thin coat of asphalt-like material still adhered to many portions of the outer dock following the removal of the traction coat, and this asphalt-like material became tacky in the heat and sunlight. **Figure 5** shows the northeast corner of Building 301's (SEAD-2's) loading dock with the traction covering removed.

Once the majority of the traction coating was removed from the loading dock, the interior floor and loading dock at Building 307 were vacuumed again to remove any residual dusts, and once this step was completed, a 100 cell grid was defined to encompass the entire interior floor and loading dock, as well as areas beyond the bounds of the building. Grid cells located beyond the bounds of the building and the loading dock were ignored in subsequent cleaning and sampling operations. Once the grid was established, the flat surfaces were systematically stiff-bristle brushed washed with a detergent (Alconox) and potable water solution, and the wash solution and dirt were recovered via wet vacuuming. Once all surfaces at Building 301 were scrub washed, each grid cell was systematically rinsed with potable water, and again the rinse solution was recovered via wet-vacuuming. The rinsing and wet vacuuming of each grid cell was then repeated.

Once the second rinse solution was recovered, rinseate sample collection was performed in accordance with NYSDEC's recommended protocols. Grid cells chosen for sampling were selected using a random number generator, and once a grid cell was selected it was marked to ensure that space within the bounds of the grid cell were not walked on until after the confirmation rinseate sample had been collected. Grid cells inside the building were sampled first, and then samples from the loading platform were collected.

Rinseate sample results from the June 2005 repeat decontamination event are summarized in **Tables 3** and **4**. For SEAD-1 (Building 307), review of these data indicate that lead concentrations identified in three out of the 19 rinseate samples collected and analyzed, marginally exceed (ranging from 28.7 to 29.5 ug/L) NYSDEC's defined closure level for lead (25 ug/L). However, the overall average computed from all rinseate samples collected at SEAD-1 is roughly 10.3 ug/L. Based on this result, it is the Army's position that the decontamination for SEAD-1 is complete as the average concentration is less than the defined closure level, a majority of the tested locations are themselves below the levels, and the three noted exceedances are within the analytical precision of acceptable closure levels.

At SEAD-2 (Building 301) review of the rinseate sample confirmational data indicate that lead concentrations identified in five of the 17 samples collected and analyzed exceed NYSDEC's defined closure level of 25 ug/L. The five exceedances range from 30.7 to 519 ug/L, and the overall average computed for the data set is 48.5 ug/L, heavily influenced by a single value. The highest of the values (519 ug/L) was collected from a location immediately adjacent to the site where the northern most lead-paint coated entry door was located, and is presumed to result from trace quantities of abraded paint being present. If this single anomalous value was removed from the dataset, the Building 301 rinseate sample average value would be nearer to 19 ug/L. Two of the other locations are located on the outside loading dock and are possibly affected by windblown debris from the surrounding area, or residual lead building tile or paint flakes that were held by the tacky asphalt during the cleaning process. The remaining two locations are interior to the building and are sandwiched between samples that show that the decontamination inside the building has been successful. Given this information, the Army submits that the decontamination of Building 301 is also complete, and that the residual levels left at the site are consistent with HUD's residential lead standards for dusts.

Zinc concentrations found in exterior soils at Building 307

Available data presented in the Draft Closure Report for Building 307 (SEAD-1) indicates that elevated concentrations of zinc are found in the surface soil samples collected around the exterior of the building. Measured concentrations ranged from a low of 157 parts per million (ppm) to a high of 16,200 ppm. The zinc concentration used as the comparison value at the Seneca Army Depot Activity (SEDA) is 110 mg/Kg (ppm) computed as the 95th percentile value of a site-specific dataset. The maximum concentration in the SEDA-specific background data set was 126 ppm.

Building 307 is an unheated, corrugated sheet metal building that extends beyond and covers a 6-inch thick, monolithic concrete slab floor bounded by a 6-inch tall and wide berm. The monolithic floor and berm measure 40 feet (ft.) by 50 ft. The slab is reinforced with steel bars spaced 12 inches apart. The roof is constructed of corrugated zinc-coated steel with single sheets extending from the ridge to the edge. Zinc-coated corrugated steel sheets cover the sides of the building extending from 1 foot below the 2 by 12 inch headers to 6 inches below the top of the curb. The open spaces between the sidewall corrugated panels, and the building's roof and floor provides passive ventilation in the building.

Building 307 is currently 20 to 25 years old, and with time the corrugate steel panels forming the sidewalls and roof have oxidized, creating a powdery white film that coats the exposed surfaces. All of the exterior surfaces are exposed to the weather, and storm events have washed the powder into the surrounding soil where it is mixed with the native soils, concentrating in cuts located outside the building's footprint where runoff pools, infiltrates and runs away from the building. **Figures 6** and **7** show two sides of the exterior of Building 307 and the whitish coloration present on the adjacent surface soil.

The surface soil samples were collected in approximately 1 to 2 feet beyond the exterior wall of the pole-barn structure, at locations most likely to have been impacted by any spills that might have occurred. Many of the selected sampling locations were at locations along the drip line of the roof. The Army believes that the observed elevated zinc levels found in the soil result from the long-term weather washing of the white zinc oxide powder that has been observed on the outside of the corrugated metal side and roof sheeting that mixes the powder with the adjacent soil.

Organic compound concentrations found in exterior soils surrounding Building 301

Data presented in the Draft Closure Plan indicates that numerous semivolatile organic compounds (SVOCs), predominated by polycyclic aromatic hydrocarbons (PAHs), are present in the soil surrounding the exterior of Building 301 (SEAD-2). There are numerous indications that levels found in the surface soil samples are above the NYSDEC's soil clean-up objective levels identified in the Technical and Administrative Guidance Memorandum (TAGM) # 4046.

Parsons believes that several factors, including vehicular and rail traffic immediately adjacent to building 301, the presence of asphalt paved parking areas and roadways along two sides of the building; the presence of a railroad line and spur along the third side of the building and the use of tar as a roofing material and as a coating for the loading dock all contribute to the observed elevated levels of SVOCs and PAHs found around the building. All of the surface soil samples were taken at location within 1 to 2 feet of the exterior footprint of the building, at location most probably impacted by spills if any occurred. Many of the samples collected from sides where paved parking areas were located were taken at points where broken up asphalt may have been present. Additionally, materials such as lubricants, fuels, oils and greases associated with railroad traffic along the adjacent rail line and spur could also have impacted some of the sample locations. Finally, each of the surface soil samples were collected from locations that may have been impacted by tar coatings applied either to the roof, or to the loading dock, ramp and stairways.

Parsons believes that probable sources of the noted elevated PAH compounds include the asphalt paving materials in the road and parking areas as well as oils, lubricants, and grease droppings from the vehicle and railroad stock used for delivery and pick up of materials at Building 301. Further, emissions from diesel engines used in military vehicles and railroad locomotives could also contribute to the noted elevated concentrations. Finally, the tar substance used for roofing and coating the loading dock and platform are also considered potential sources of the noted elevated PAHs.

Parsons hopes that the information provided in this letter addresses the comments and concerns raised by the NYSDEC in their comment letter for the Draft Closure Report for SEAD-1 (Building 307) and SEAD-2 (Building 301) at the Seneca Army Depot Activity in Romulus, New York. If you have further comments or questions about these matters please contact Mr. Stephen Absolom of the Army or Mr. Todd Heino (617-449-1405) at Parsons at your convenience.

Very Truly Yours

Todd Heino, P.E.
Program Manager

cc: S. Absolom (SEDA)
R. Battaglia (USACE)

Table 1

Lead Content of Building and Coating Material Samples
Seneca Army Depot Activity – SEADs 1 and 2

Sample ID	Location	Description	Lead Concentration
01-5001	SEAD-1, Bldg 307	Paint on Door	194,000 µg/Kg
02-5001	SEAD-2, Bldg 301	East Platform, Asphalt	225,000 µg/Kg
02-5002	SEAD-2, Bldg 301	West Platform, Asphalt	13,400 µg/Kg
02-5003	SEAD-2, Bldg 301	Outside Tile	1,440 µg/Kg
02-5004	SEAD-2, Bldg 301	Concrete Inside Rollup Door	4,580 µg/Kg
02-5005	SEAD-2, Bldg 301	Inside Tile	1,260 µg/Kg
02-5006	SEAD-2, Bldg 301	Paint on Rollup Door	105,000,000 µg/Kg

Table 2

Lead Results from Trial Decontamination Experiments Conducted at Building 301, SEAD-2
April 20, 2005

Sample Location	Trial Decontamination Method	Wipe Sample		HUD Std [1]	Rinseate Sample		GA Std[2]
		Pre-Cleaning (µg/sample-ft^2)	Post-Cleaning (µg/sample-ft^2)	(µg/ft^2)	Pre-Cleaning (µg/L)	Post-Cleaning (µg/L)	(µg/L)
43	TSP/water	1,080	10.5	40	13,200	28.6	25
65	DI Water	1,210	6.41	40	16,100	14.7	25
90	Ledizolv®/Water	2.97	2.45	40	18,700	1,390	25
	Rinseate Blank: reported 3.74 ug/L of Lead. Wastewater Sample: reported 21,900 ug/L of Lead.						

Notes:
1) HUD Standard, dust-lead hazard standards, 40 CFR 745, *Lead; Identification of Dangerous Levels of Lead; Final Rule*, January 5, 2001
2) GA Standard for Lead, New York State Depart. of Environmental Conservation, Ambient Water Quality Standards

Table 3

June 2005 Rinseate Sample Lead Results
Decontamination of Building 307 (SEAD-1)

Sample Date	Sample ID	Grid Location	Units	Concentration [1, 2]
6/11/05	450017	Exterior Ramp	µg/L	2.5 U
6/11/05	450007 lab dup	05	µg/L	7.44 J
6/11/05	450007	05	µg/L	10.8
6/11/05	450007 field dup	05	µg/L	**28.7**
6/11/05	450012	07	µg/L	3 J
6/11/05	450004	14	µg/L	6.4 J
6/11/05	450005	22	µg/L	**29.1**
6/11/05	450006	29	µg/L	19.8
6/11/05	450002	31	µg/L	23.7
6/11/05	450015	43	µg/L	4.1 J
6/11/05	450016	58	µg/L	7 J
6/11/05	450013	60	µg/L	**29.5**
6/11/05	450008	65	µg/L	2.5 U
6/11/05	450014	67	µg/L	2.5 U
6/11/05	450010	74	µg/L	3.1 J
6/11/05	450003	81	µg/L	2.5 U
6/11/05	450009	83	µg/L	4.8 J
6/11/05	450001	87	µg/L	2.5 U
6/11/05	450011	92	µg/L	5.6 J

Average			**µg/L**	**10.29**

Notes:

1.) Bolded and shaded results in cell indicate that value exceeds NYSDEC's GA groundwater standard for Lead (25 µg/L).

2.) J qualifier means value is estimated. U qualifier means lead not detected at or above listed concentration.

Table 4

June 2005 Rinseate Sample Lead Results
Decontamination of Building 301 (SEAD-2)

Sample Date	Sample ID	Grid Location	Units	Concentration [1,2]
6/11/05	35014	22	µg/L	**519**
6/11/05	35002	26	µg/L	11.5
6/11/05	35007	33	µg/L	9 J
6/11/05	35001	34	µg/L	**39.1**
6/11/05	35012	35	µg/L	2.5 U
6/11/05	35005	44	µg/L	14.5
6/11/05	35013	47	µg/L	6.6 J
6/11/05	35015	51	µg/L	**83**
6/11/05	35004	55	µg/L	13.4
6/11/05	35006	58	µg/L	2.5 U
6/11/05	35003	61	µg/L	**58.8**
6/11/05	35011	65	µg/L	**30.7**
6/11/05	35010 – Lab dup	66	µg/L	9.92 J
6/11/05	35010	66	µg/L	8.7 J
6/11/05	35010D – field dup	66	µg/L	2.5 U
6/11/05	35009	79	µg/L	8.6 J
6/11/05	35008	90	µg/L	3.8 J

Average			**µg/L**	**48.48**

Notes:

1.) Bolded and shaded results in cell indicate that value exceeds NYSDEC's GA groundwater standard for Lead (25 µg/L).

2.) J qualifier means value is estimated. U qualifier means lead not detected at or above listed concentration.

Figure 1: Interior of Building 307 (SEAD-1) prior to decontamination monolithic floor and berm, lower passive ventilation area and sheet metal walls.

Figure 2: Interior of Building 301 (SEAD-2) looking north prior to decontamination

Figure 3: Interior of Building 301 (SEAD-2) looking southwest prior to decontamination

Figure 4: Northeast corner of Building 301 (SEAD-2) Loading Dock with Asphalt/Gravel Traction covering

Figure 5: Northeast Corner of Building 301 (SEAD-2) Loading Dock with Asphalt/Gravel Traction covering removed.

Figure 6: Exterior of Building 307 facing south

Figure 7: Southern exterior end of Building 307 (SEAD-1) facing West.

Appendices

Seneca, Region 8

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste Regulation, 8th Floor
625 Broadway, Albany, New York 12233-7251
Phone: (518) 402-8612 • **FAX:** (518) 402-8646
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

FAX TRANSMISSION

To:	Mr. Steven Absolom	**Fax #:**	607-869-1362
Company:	Seneca Army Depot Activity (SEDA)	**Phone #:**	607-869-1309
From:	James W. Dolen, Jr.	**Date:**	October 2, 2003
Pages:	4 including this cover sheet		
Subject:	Draft Closure Report dated September 4, 2003: Building 307, Hazardous Waste Storage Facility & Building 301, PCB Transformer Storage Building		

Message:

The Department has reviewed the above report. Additional decontamination is needed for the inside of both buildings because the lead levels exceeded the standard in most samples. Seneca should ensure that sufficient volumes of liquid under sufficient pressure are used for the decontamination. After that work is done, confirmatory sampling only needs to be done for lead.

For the exterior samples, please explain the exceedances for Building 307 for zinc and for Building 301 for the organics shown in Table 2-4 of the above report.

Also see the comments on the above report from John Petiet and Kent Johnson which are attached.

If you have any questions, please call me at 518-402-8610.

Very truly yours,

James W. Dolen, Jr.
Section Chief

Steve - These are the comments we talked about.
Jim

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Pesticides Management, 9th Floor
625 Broadway, Albany, New York 12233-7254
Phone: (518) 402-8788 - **FAX:** (518) 402-9024
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Jim Dolen, Supervisor, Hazardous Waste Reduction Section, Bureau of Hazardous Waste Regulation

FROM: John Petiet, Chemistry & Laboratory Services Section, Bureau of Pesticides Management

SUBJECT: Closure Data for Buildings 301 and 307 at Seneca Army Depot, Romulus, Seneca County

DATE: September 26, 2003

I have review the lead rinsate data taken to support the "clean closure" for buildings 301 and 307 in the closure report, dated September 2003. Lead is the only analyte that exceeded the closure criteria in the rinsate samples. The rinsate data is of good quality and can be used as presented. The details of my review follow.

Overview

The full data deliverables package on the CD contains 6 PDF files and over 11,443 pages. I have reviewed only the lead rinsate sample data since the values are well above the clean up criteria of the groundwater standard of 25 ppb or the part 703 Groundwater effluent limitations for discharges to Class GA waters value of 50 ppb.

A total of 16 samples from building 301 and 18 samples from building 307 were taken, excluding QC samples. These were analyzed by the lab in three different sample deliverable groups. These groups were labeled SDG 78782, SDG 78834, and SDG 78945.

Lead Rinsate Data

QC data is specific for each SDG and usually one divides the data up that way to discuss it. This is not necessary in this case because there was no QC data out of control for lead in any of the SDGs. Holding time was always met as were initial and continuing calibration percent recoveries, laboratory control sample recoveries, CRDL and interference check samples as well as serial dilution results, matrix spike and duplicate results. Also, there was no blank contamination. I have tabulated the matrix spike and duplicate results below for each SDG. A field sample from the Seneca site was selected as the QC sample and its number is also listed below.

SDG #	Original	Duplicate	%RPD	MS % recovery
78782 sample client ID #15010	125 µg/L	124 µg/L	0.8%	106.6%
78834 sample client ID #25004	78.7 µg/L	77.6 µg/L	1.3%	99.3%
78945 sample client ID # 25009	602 µg/L	614 µg/L	2.0 %	111.6%

The QC limits for the relative percent difference (RPD) between aqueous duplicate samples can be up to 20%. The range for acceptable spike percent recovery ranges from 75-125% of the true value. All of these results were well within QC limits.

I also checked the raw data to see if there were any transcription errors. There are none. The sample results were read directly from the instrument and is the average of three runs of the same sample for analysis. No sample required dilution since the linear range for lead is up to 50000 ppb.

If you have any questions concerning my comments, please see me, contact me via GroupWise or call me at 2-8804.

ecc: K. Johnson

To: Jim Dolen

From: Kent Johnson

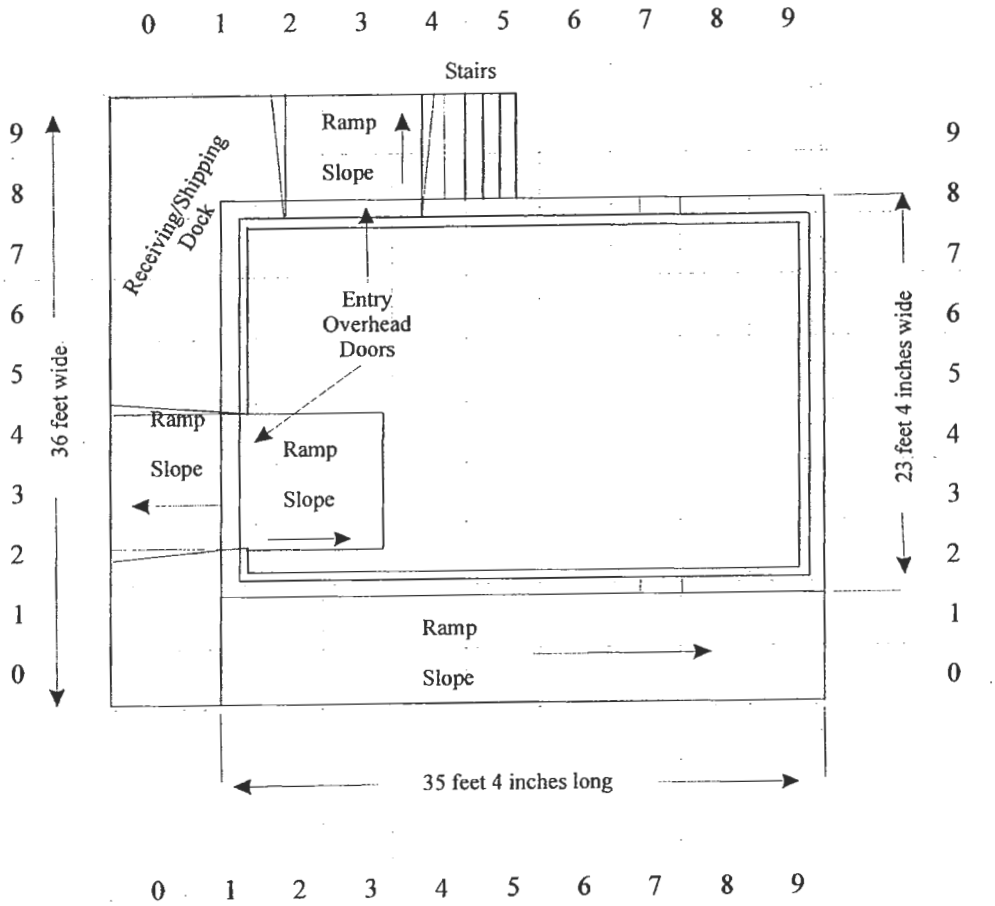
Subject: SEAD Buildings 301 & 307 Closure Report

Date: September 16, 2003

After reviewing the above referenced report I have the following comments:

- The number of values exceeding the action level criteria in the analysis of rinsate samples indicate that additional decontamination of buildings may be necessary. In addition, the comparison of rinsate sample results to hazardous waste disposal criteria (Sections 3.1.1 & 3.2.1) is on appropriate for the disposal of the rinse water and not for a decontamination criteria.
- Review of soil sampling results indicate the presence of soil contaminant concentrations exceeding residential standards, but "considered normal for an industrial area". If SEAD wishes to place a restriction on future use of the buildings as industrial, this should be sufficient.
- Given the age of Building 301, an asbestos survey should be conducted on the building prior to release of the property.

If you have any further questions, please contact me.



Building 301
Proposed Rinsate Sampling Grid

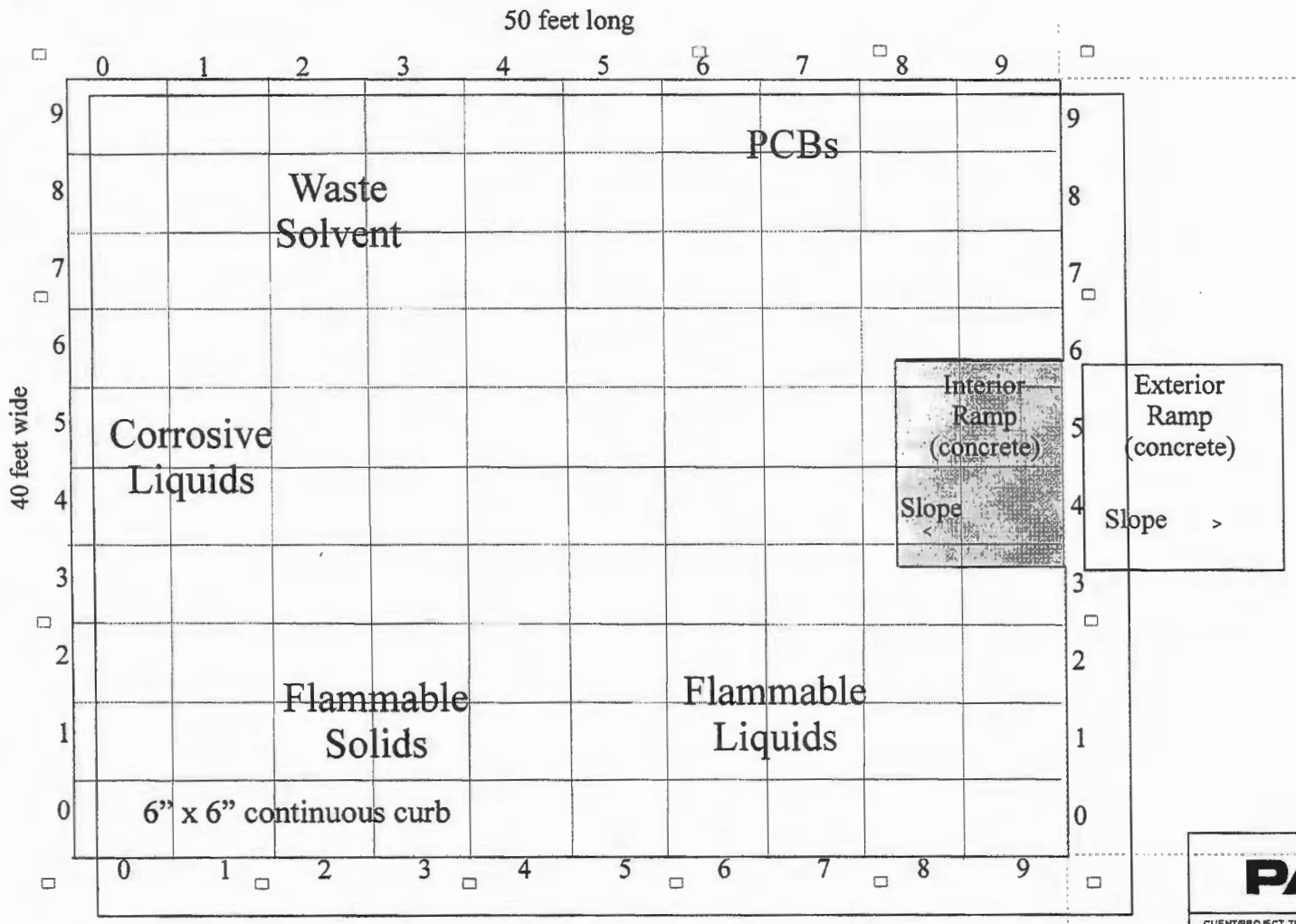
PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

Building 301 PCB Transformer Storage Building
Rinsate Sampling Grid June 2005

SCALE	DATE
	DECEMBER 2002



Building 307
Rinsate Sampling Grid Layout

PARSONS

CLIENT/PROJECT TITLE
SENECA army DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

Building 307
Random Sampling Grid Layout
June 2005

SCALE	DATE
	DECEMBER 2002

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 02-5003
Sample ID: 121462004
Matrix: Soil
Collect Date: 14-SEP-04 12:04
Receive Date: 15-SEP-04
Collector: Client
Moisture: .631%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
3050S/6010 Lead Federal											
Lead		1440	279	491	ug/kg	1	HSC	09/22/04	0936	367357	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526
SW846 3050B	846 3050BS PREP	CQH1	09/21/04	1713	367356

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: Seneca Army Depot

Report Date: September 22, 2004

Client Sample ID: 02-5004
Sample ID: 121462005
Matrix: Soil
Collect Date: 14-SEP-04 12:06
Receive Date: 15-SEP-04
Collector: Client
Moisture: 1.73%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
3050S/6010 Lead Federal											
Lead		4580	288	507	ug/kg	1	HSC	09/22/04	1006	367357	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526
SW846 3050B	846 3050BS PREP	CQH1	09/21/04	1713	367356

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
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Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 02-5005
Sample ID: 121462006
Matrix: Soil
Collect Date: 14-SEP-04 12:08
Receive Date: 15-SEP-04
Collector: Client
Moisture: 6.48%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
3050S/6010 Lead Federal										
Lead		1260	303	534	ug/kg	1	HSC 09/22/04	1012	367357	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526
SW846 3050B	846 3050BS PREP	CQH1	09/21/04	1713	367356

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
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E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
h Sample preparation or preservation holding time exceeded.

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Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: September 22, 2004

Client : Parsons Engineering
100 Summer Street
8th Floor
Boston, Massachusetts
Contact: Mr. Jeff Adams

Workorder: 121462

Parmname				NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP Federal														
Batch 366527														
QC1200704372	121462001	DUP												
Lead					194000		212000	ug/kg	9		(0%-20%)	HSC	09/20/04	22:42
QC1200704376		LCS												
Lead				48400			50500	ug/kg		104	(80%-120%)		09/20/04	22:29
QC1200704371		MB												
Lead							578	ug/kg					09/20/04	22:23
QC1200704374	121462001	MS												
Lead				51500	194000		273000	ug/kg		155*	(75%-125%)		09/20/04	22:47
QC1200704375	121462001	MSD												
Lead				51400	194000		191000	ug/kg	35*	0*	(0%-20%)		09/20/04	22:53
QC1200704373	121462001	SDILT												
Lead					1880		379	ug/L	.772				09/20/04	22:59
Batch 367357														
QC1200706443	121462004	DUP												
Lead					1440		1490	ug/kg	3 ^		(+/-496)	HSC	09/22/04	09:48
QC1200706442		LCS												
Lead				48200			46000	ug/kg		96	(80%-120%)		09/22/04	09:31
QC1200706441		MB												
Lead						J	449	ug/kg					09/22/04	09:25
QC1200706444	121462004	MS												
Lead				49900	1440		47700	ug/kg		93	(75%-125%)		09/22/04	09:54
QC1200706487	121462004	MSD												
Lead				50300	1440		48900	ug/kg	2	94	(0%-20%)		09/22/04	10:00
QC1200706445	121462004	SDILT												
Lead					14.7	J	4.80	ug/L	63.4				09/22/04	09:42

Notes:
The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- U Indicates the target analyte was analyzed for but not detected above the detection limit.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- h Sample preparation or preservation holding time exceeded.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 121462

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 01-5001
Sample ID: 121462001
Matrix: Soil
Collect Date: 14-SEP-04 10:30
Receive Date: 15-SEP-04
Collector: Client
Moisture: 2.83%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
3050S/6010 Lead Federal											
Lead		194000	292	515	ug/kg	1	HSC	09/20/04	2236	366527	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
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X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
h Sample preparation or preservation holding time exceeded.

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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 02-5002
Sample ID: 121462002
Matrix: Soil
Collect Date: 14-SEP-04 12:02
Receive Date: 15-SEP-04
Collector: Client
Moisture: .224%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
3050S/6010 Lead Federal										
Lead		13400	271	477	ug/kg	1	HSC 09/21/04	1424	366527	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
h Sample preparation or preservation holding time exceeded.

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Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 02-5001
Sample ID: 121462003
Matrix: Soil
Collect Date: 14-SEP-04 12:00
Receive Date: 15-SEP-04
Collector: Client
Moisture: 2.32%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
3050S/6010 Lead Federal											
Lead		225000	284	500	ug/kg	1	HSC	09/21/04	1430	366527	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Parsons Engineering
Address : 100 Summer Street
8th Floor
Boston, Massachusetts 02110
Contact: Mr. Jeff Adams
Project: **Seneca Army Depot**

Report Date: September 22, 2004

Client Sample ID: 02-5006
Sample ID: 121462007
Matrix: Soil
Collect Date: 14-SEP-04 12:18
Receive Date: 15-SEP-04
Collector: Client
Moisture: 1.76%

Project: PARS00107
Client ID: PARS001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
3050S/6010 Lead Federal											
Lead		105000000	57000	100000	ug/kg	200	HSC	09/21/04	1453	366527	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	09/19/04	1723	366526

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.
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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

June 28, 2005

Mr. Jeff Adams
Parsons Engineering
150 Federal Street
4th Floor
Boston, Massachusetts 02110

Re: Seneca Army Depot - 301/307 Closure
Work Order: 138543

Dear Mr. Adams:

General Engineering Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on June 14, 2005. This data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4243.

Sincerely,

Cheryl Jones
Project Manager

Purchase Order: 7403157-03000
Enclosures

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CHAIN OF CUSTODY

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Project #: RCRA Closure of 301 and 307
GEL Quote #:
COC Number (1):
PO Number: 7403157-03000

GEL Chain of Custody and Analytical Request

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: **PARSONS** Phone #: 1-671-449-1592

Project/Site Name: Seneca Army Depot Activity Fax #: 1-617-946-9777

Address: 150 Federal Street Boston MA 02110

Collected by: McAllister Send Results To: Jeff Adams 1-617-449-1570

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	6010B/7471A (Pb)	NI									<-- Preservative Type (6)	Comments
138543																				
001 35001	6/11/2005	16:25	N	NA	W			1	X										R301-34-05	
002 35002	6/11/2005	16:30	N	NA	W			1	X										R301-26-05	
003 35003	6/11/2005	19:01	N	NA	W			1	X										R301-61-05	
004 35004	6/11/2005	16:38	N	NA	W			1	X										R301-55-05	
005 35005	6/11/2005	16:44	N	NA	W			1	X										R301-44-05	
006 35006	6/11/2005	17:44	N	NA	W			1	X										R301-58-05	
007 35007	6/11/2005	17:48	N	NA	W			1	X										R301-33-05	
008 35008	6/11/2005	19:05	N	NA	W			1	X										R301-90-05	
009 35009	6/11/2005	17:55	N	NA	W			1	X										R301-79-05	
010 35010	6/11/2005	18:01	N	NA	W			1	X										R301-66-05	

Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards* ***(Summary Results as soon as possible full data package in 21 days)***

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ben McAllister	6/17/05	15:30	Rachael Doyle	6-14-05	905
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 2 of 2
Project #: RCRA Closure of 301 and 307
GEL Quote #:
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Collected by: McAllister Send Results To: Jeff Adams 1-617-449-1570

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	NI	6010B/7471A (Pb)	<-- Preservative Type (6)	Comments
1385437												
010 35010MS (one sample)	6/11/2005	17:51	MS	NA	W			1		X		R301-66-05-MS
35010MSD	6/11/2005	17:51	MSD	NA	W			1		X		R301-66-05-MSD
011 35010D	6/11/2005	17:51	FD	NA	W			1		X		R301-66-05-D
012 35011	6/11/2005	18:01	N	NA	W			1		X		R301-65-05
013 35012	6/11/2005	18:10	N	NA	W			1		X		R301-35-05
014 35013	6/11/2005	18:28	N	NA	W			1		X		R301-47-05
015 35014	6/11/2005	18:30	N	NA	W			1		X		R301-22-05
016 35015	6/11/2005	18:54	N	NA	W			1		X		R301-51-05
017 307IDW	6/11/2005	12:30	N	NA	W			1		X		307IDW
018 Field QC Rinse Blank	6/11/2005	8:00	EB	NA	W			1		X		Rinse Blank

Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards (Summary Results as soon as possible full data package in 21 days)*

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ben McAllister	6/13/05	15:30	Rachael Orr	6-14-05	905
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

COOLER RECEIPT CHECKLIST

SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: PARSON	SDG/ARCOC/Work Order: 138543 138544
Date Received: 6-14-05	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: Rachael Ovzts	

	Sample Receipt Criteria	Conforming	NA	Non-Conforming	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		X		Circle Coolant # ice bags blue ice dry ice none other(describe) 25°
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?			X	Sample ID's, containers affected and observed pH: 307 IDW (in the 35000 group)
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Samples received within holding time?	X			Id's and tests affected:
8	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
9	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
10	Number of containers received match number indicated on COC?	X			Sample ID's affected:
11	COC form is properly signed in relinquished/received sections?	X			
12	Air Bill ,Tracking #'s, & Additional Comments	FedEx 7900 5134 7417 ↓ ↓ 7450			

Radiological Information	Non-RAD	RAD	RADII	
What is the radiological classification of the samples?	X			RSO RAD Receipt # / Comments:
Radioactivity Screening Results (maximum observed CPM)	20			*If > x2 area background is observed on a non-radioactive sample, contact the RSO to investigate.

PM (or PMA) review of Receiving Rad classification: CAJ Initials 6/14/05 Date:

Metals Analysis

Metals Fractional Narrative
Parsons Engineering (PARS)
SDG 138543

Method/Analysis Information

Analytical Batch:	434147
Prep Batch :	434146
Standard Operating Procedures:	GL-MA-E-013 REV# 13, GL-MA-E-006 REV# 9
Analytical Method:	SW846 6010B
Prep Method :	SW846 3005A

Sample Analysis

Sample ID	Client ID
138543001	35001
138543002	35002
138543003	35003
138543004	35004
138543005	35005
138543006	35006
138543007	35007
138543008	35008
138543009	35009
138543010	35010
138543011	35010D
138543012	35011
138543013	35012
138543014	35013
138543015	35014
138543016	35015
138543017	3571DW

138543018	Rinse Blank
1200867828	Method Blank (MB)
1200867829	Laboratory Control Sample (LCS)
1200867833	138543010(35010L) Serial Dilution (SD)
1200867830	138543010(35010D) Sample Duplicate (DUP)
1200867831	138543010(35010S) Matrix Spike (MS)
1200867832	138543010(35010SD) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by General Engineering Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The ICP analysis was performed on a Thermo Jarrell Ash 61E Trace axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium internal standard. Operating conditions for the Trace ICP are set at a power level of 950 watts. The instrument has a peristaltic pump flow rate of 140 RPM (2.0 mL/min sample uptake rate), argon gas flows of 15 L/min and 0.5 L/min for the torch and auxiliary gases, and a pressure setting of 26 PSI for the nebulizer.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
All CRDL standard(s) met the referenced advisory control limits.

ICSA/ICSAB statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
Sample 138543010 (35010) was selected as the quality control (QC) sample for this SDG.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

Matrix Spike Duplicate (MSD) Recovery Statement
The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four time (4X) the spike concentration added. All applicable elements met the acceptance criteria.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is 5X the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations that are 25X the IDL for CVAA, 50X the IDL for ICP, and 100X the IDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the acceptance criteria of less than 10% difference (%D).

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in soil samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG did not require dilutions.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Nonconformance Documentation
Nonconformance reports (NCRs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A NCR was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: _____ **Date:** 4/15/

Sample Data Summary

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543001 **CLIENT ID:** 35001

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	39.1	ug/L			P	2.5	TRACE2	061705–1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543002 **CLIENT ID:** 35002

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	11.5	ug/L			P	2.5	TRACE2	061705-1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543003 **CLIENT ID:** 35003

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	58.8	ug/L			P	2.5	TRACE2	061705–1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543004 **CLIENT ID:** 35004

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	13.4	ug/L			P	2.5	TRACE2	061705–1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543005 **CLIENT ID:** 35005

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	14.5	ug/L			P	2.5	TRACE2	062005

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543006 **CLIENT ID:** 35006

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705-1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543007 **CLIENT ID:** 35007

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	9	ug/L	B		P	2.5	TRACE2	061705-1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543008 **CLIENT ID:** 35008

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	3.8	ug/L	B		P	2.5	TRACE2	061705–1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543009 **CLIENT ID:** 35009

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	8.6	ug/L	B		P	2.5	TRACE2	061705-1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543010 **CLIENT ID:** 35010

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	8.7	ug/L	B		P	2.5	TRACE2	061705–1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543011 **CLIENT ID:** 35010D

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705–1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543012 **CLIENT ID:** 35011

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	30.7	ug/L			P	2.5	TRACE2	061705-1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543013 **CLIENT ID:** 35012

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705-1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543014 **CLIENT ID:** 35013

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	6.6	ug/L	B		P	2.5	TRACE2	061705–1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543015 **CLIENT ID:** 35014

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	519	ug/L			P	2.5	TRACE2	061705–1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543016 **CLIENT ID:** 35015

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	83	ug/L			P	2.5	TRACE2	061705-1

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543017 **CLIENT ID:** 3571DW

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	13500	ug/L			P	2.5	TRACE2	061705-1

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138543 **METHOD TYPE:** SW846

SAMPLE ID: 138543018 **CLIENT ID:** Rinse Blank

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	2.9	ug/L	B		P	2.5	TRACE2	061705–1

Comments:

Quality Control Summary

METALS
–2a–
Initial and Continuing Calibration Verification

SDG No: 138543

Contract: PARS01001 **Lab Code:** GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: TRACE2

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M	Analysis Date/Time	Run Number
ICV01										
	Lead	488.77	ug/L	500	ug/L	97.8	90.0 – 110.0	P	17–JUN–05 11:28	061705–1
	Lead	497.69	ug/L	500	ug/L	99.5	90.0 – 110.0	P	20–JUN–05 11:31	062005–2
CCV01										
	Lead	495.73	ug/L	500	ug/L	99.2	90.0 – 110.0	P	17–JUN–05 12:06	061705–1
	Lead	505.34	ug/L	500	ug/L	101.1	90.0 – 110.0	P	20–JUN–05 12:10	062005–2
CCV02										
	Lead	494.55	ug/L	500	ug/L	98.9	90.0 – 110.0	P	17–JUN–05 13:15	061705–1
	Lead	499.88	ug/L	500	ug/L	100	90.0 – 110.0	P	20–JUN–05 13:17	062005–2
CCV03										
	Lead	518.52	ug/L	500	ug/L	103.7	90.0 – 110.0	P	17–JUN–05 14:22	061705–1
	Lead	499.4	ug/L	500	ug/L	99.9	90.0 – 110.0	P	20–JUN–05 13:49	062005–2
CCV04										
	Lead	509.42	ug/L	500	ug/L	101.9	90.0 – 110.0	P	17–JUN–05 15:27	061705–1
CCV05										
	Lead	525.56	ug/L	500	ug/L	105.1	90.0 – 110.0	P	17–JUN–05 16:39	061705–1
CCV06										
	Lead	507.61	ug/L	500	ug/L	101.5	90.0 – 110.0	P	17–JUN–05 17:20	061705–1
CCV07										
	Lead	504.52	ug/L	500	ug/L	100.9	90.0 – 110.0	P	17–JUN–05 18:31	061705–1
CCV08										
	Lead	539.73	ug/L	500	ug/L	108	90.0 – 110.0	P	17–JUN–05 19:30	061705–1
CCV09										
	Lead	548.05	ug/L	500	ug/L	109.6	90.0 – 110.0	P	17–JUN–05 20:30	061705–1
CCV10										
	Lead	534.99	ug/L	500	ug/L	107	90.0 – 110.0	P	17–JUN–05 21:29	061705–1

METALS
--2b--
CRDL Standard for AA & ICP

SDG No: 138543

Contract: PARS01001 **Lab Code:** GEL

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source Solutions Plus

Instrument ID: TRACE2

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Advisory Limits (%R)	M	Analysis Date/Time	Run Number
PQL01										
	Lead	8.28	ug/L	10	ug/L	82.84	50.0-150.0	P	17-JUN-05 11:41	061705-1
	Lead	10.17	ug/L	10	ug/L	101.66	50.0-150.0	P	20-JUN-05 11:44	062005-2

Metals
–3a–
Initial and Continuing Calibration Blank Summary

SDG No.: 138543

Contract: PARS01001 **Lab Code: GEL**

Sample ID	Analyte	Result	Acceptance ug/L	Conc Qual	MDL	RDL	M	Analysis Date/Time	Run
ICB01									
	Lead	–3.0	+/–10	B	2.5	10.0	P	17–JUN–05 11:35	061705–1
	Lead	2.5	+/–10	U	2.5	10.0	P	20–JUN–05 11:38	062005–2
CCB01									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 12:12	061705–1
	Lead	2.5	+/–10	U	2.5	10.0	P	20–JUN–05 12:15	062005–2
CCB02									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 13:21	061705–1
	Lead	2.5	+/–10	U	2.5	10.0	P	20–JUN–05 13:23	062005–2
CCB03									
	Lead	–3.9	+/–10	B	2.5	10.0	P	17–JUN–05 14:28	061705–1
	Lead	2.5	+/–10	U	2.5	10.0	P	20–JUN–05 13:55	062005–2
CCB04									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 15:33	061705–1
CCB05									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 16:45	061705–1
CCB06									
	Lead	–4.43	+/–10	B	2.5	10.0	P	17–JUN–05 17:26	061705–1
CCB07									
	Lead	–2.94	+/–10	B	2.5	10.0	P	17–JUN–05 18:37	061705–1
CCB08									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 19:36	061705–1
CCB09									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 20:35	061705–1
CCB10									
	Lead	2.5	+/–10	U	2.5	10.0	P	17–JUN–05 21:35	061705–1

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 138543
Contract: PARS01001
Matrix: WATER

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M	MDL	RDL
1200867828	Lead	2.5	ug/L	+/-10.0	U	P	2.5	10

METALS
–4–
Interference Check Sample

SDG No: 138543

Contract: PARS01001 **Lab Code:** GEL

ICS: O2Si

Instrument: TRACE2

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01	Lead	2.16	ug/L					17–JUN–05 11:47	061705–1
ICSAB01	Lead	462.41	ug/L	500	ug/L	92.5	80.0 – 120.0	17–JUN–05 11:52	061705–1

METALS
–4–
Interference Check Sample

SDG No: 138543

Contract: PARS01001 **Lab Code:** GEL

ICS: O2Si

Instrument: TRACE2

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01	Lead	2.81	ug/L					20-JUN-05 11:50	062005-2
ICSAB01	Lead	489.48	ug/L	500	ug/L	97.9	80.0 - 120.0	20-JUN-05 11:56	062005-2

METALS
–5a–

Matrix Spike Summary

SDG NO. 138543 **Client ID** 35010S

Contract: PARS01001 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 138543010 **Spike ID:** 1200867831

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Lead	ug/L	75–125	573		8.66	B	500	113		P

METALS
–5a–

Matrix Spike Duplicate Summary

SDG NO.	138543	**Client ID**	35010SD
Contract:	PARS01001	**Level:**	Low
Matrix:	WATER	**% Solids:**	
Sample ID:	138543010	**Spike ID:**	1200867832

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Lead	ug/L	75–125	578		8.66	B	500	114		P

Metals
–6–
Duplicate Sample Summary

SDG No.: 138543

Contract: PARS01001 **Lab Code:** GEL

Matrix: LIQUID **Level:** Low **Client ID:** 35010D

Sample ID: 138543010 **Duplicate ID:** 1200867830 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Lead	ug/L	+/–10	8.66	B	9.92	B	13.6		P

Metals
-6-
Duplicate Sample Summary

SDG No.: 138543

Contract: PARS01001 **Lab Code:** GEL

Matrix: LIQUID **Level:** Low **Client ID:** 35010SD

Sample ID: 1200867831 **Duplicate ID:** 1200867832 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Lead	ug/L	+/-20	573		578		.996		P

METALS
–7–
Laboratory Control Sample Summary

SDG NO. 138543

Contract: PARS01001

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M
1200867829								
	Lead	ug/L	500	558		112	80–120	P

METALS
--9--
Serial Dilution Sample Summary

SDG NO. 138543 **Client ID** 35010L

Contract: PARS01001

Matrix: LIQUID **Level:** Low

Sample ID: 138543010 **Serial Dilution ID:** 1200867833

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M
Lead	8.66	B	12.5	U	100			P

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 138543 **Method Type:** P

Contract: PARS01001 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	434146						
138543001	35001	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543002	35002	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543003	35003	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543004	35004	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543005	35005	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543006	35006	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543007	35007	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543008	35008	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543009	35009	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543010	35010	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543011	35010D	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543012	35011	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543013	35012	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543014	35013	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543015	35014	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543016	35015	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543017	3571DW	SAMPLE	WATER	16-JUN-05	50mL	50mL	
138543018	Rinse Blank	SAMPLE	WATER	16-JUN-05	50mL	50mL	

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

June 28, 2005

Mr. Jeff Adams
Parsons Engineering
150 Federal Street
4th Floor
Boston, Massachusetts 02110

Re: Seneca Army Depot - 301/307 Closure
Work Order: 138544

Dear Mr. Adams:

General Engineering Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on June 14, 2005. This data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4243.

Sincerely,

Cheryl Jones
Project Manager

Purchase Order: 7403157-03000
Enclosures

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CHAIN OF CUSTODY

Page: 1 of 3
Project #: RCRA Closure of 301 and 307
GEL Quote #:
COC Number (1):
PO Number: 7403157-03000

GEL Chain of Custody and Analytical Request

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: **PARSONS** Phone #: 1-671-449-1592

Project/Site Name: Seneca Army Depot Activity Fax #: 1-617-946-9777

Address: 150 Federal Street Boston MA 02110

Collected by: McAllister Send Results To: Jeff Adams 1-617-449-1570

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (1385447)	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	NI	6010B/7471A (Pb)	<-- Preservative Type (6)	Comments
001 450001	6/11/2005	8:00	N	NA	W			1	X			R307-87-05
002 450002	6/11/2005	8:23	N	NA	W			1	X			R307-31-05
003 450003	6/11/2005	8:35	N	NA	W			1	X			R307-81-05
004 450004	6/11/2005	8:45	N	NA	W			1	X			R307-14-05
005 450005	6/11/2005	9:05	N	NA	W			1	X			R307-22-05
006 450006	6/11/2005	8:57	N	NA	W			1	X			R307-29-05
007 450007	6/11/2005	9:17	N	NA	W			1	X			R307-5-05
007 450007MS (one sample)	6/11/2005	9:17	MS	NA	W			1	X			R307-5-05-MS
450007MSD	6/11/2005	9:17	MSD	NA	W			1	X			R307-5-05-MSD
008 450007D	6/11/2005	9:17	D	NA	W			1	X			R307-5-05-D

Comments: Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards (Summary Results as soon as possible full data package in 21 days)*

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ben McAllister	6/10/05	15:30	Rachael Goss	6-14-05	905
2						
3						

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only

Custody Seal Intact? *YES* *NO*

Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 2 of 3
Project #: RCRA Closure of 301 and 307
GEL Quote #:
COC Number [1]:
PO Number: 7403157-03000

GEL Chain of Custody and Analytical Request

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: **PARSONS** Phone #: 1-671-449-1592

Project/Site Name: Seneca Army Depot Activity Fax #: 1-617-946-9777

Address: 150 Federal Street Boston MA 02110

Collected by: McAllister Send Results To: Jeff Adams 1-617-449-1570

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID 138544?	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	NI	6010B/7471A (Pb)	<-- Preservative Type (6)	Comments
009 450008	6/11/2005	9:26	N	NA	W			1	X			R307-65-05
010 450009	6/11/2005	9:47	N	NA	W			1	X			R307-83-05
011 450010	6/11/2005	10:10	N	NA	W			1	X			R307-74-05
012 450011	6/11/2005	10:20	N	NA	W			1	X			R307-92-05
013 450012	6/11/2005	10:27	N	NA	W			1	X			R307-7-05
014 450013	6/11/2005	10:30	N	NA	W			1	X			R307-60-05
015 450014	6/11/2005	10:37	N	NA	W			1	X			R307-67-05
016 450015	6/11/2005	10:42	N	NA	W			1	X			R307-43-05
017 450016	6/11/2005	10:59	N	NA	W			1	X			R307-58-05
018 450017	6/11/2005	11:10	N	NA	W			1	X			R307-ext-05

Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards (Summary Results as soon as possible full data package in 21 days)*

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ben McAllister	6/13/05	15:30	Rachael Brooks	6.14.05	905
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: ____ *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 3 of 3
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Address: 150 Federal Street Boston MA 02110

Collected by: McAllister Send Results To: Jeff Adams 1-617-449-1570

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	NI	6010B/7471A (Pb)									<-- Preservative Type (6)	Comments
138544% Field QC																				
IDW307	6/11/2005	12:30	N	NA	W			1	X										IDW307	Note: extra sample is required for sample specific QC
Blank																				
Blank																				
Blank																				
Blank																				
Blank																				
Blank																				
Blank																				
Blank																				
Blank																				

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards (Summary Results as soon as possible full data package in 21 days)*

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Bev McAllister	6/13/05	1538	Rachael Dow	6/14/05	905
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

COOLER RECEIPT CHECKLIST

SAMPLE RECEIPT & REVIEW FORM

GENERAL ENGINEERING LABORATORIES, LLC

PM use only

Client: PARSON	SDG/ARCOC/Work Order: 138543 F38544
Date Received: 6-14-05	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: Rachael Ovzts	

	Sample Receipt Criteria	Conforming	NA	Non-Conforming	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		X		Circle Coolant # ice bags blue ice dry ice none other(describe 25 c.
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?			X	Sample ID's, containers affected and observed pH: 307 IDW (in the 35000 group)
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Samples received within holding time?	X			Id's and tests affected:
8	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
9	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
10	Number of containers received match number indicated on COC?	X			Sample ID's affected:
11	COC form is properly signed in relinquished/received sections?	X			
12	Air Bill ,Tracking #'s, & Additional Comments	FedEx 7900 5134 7417 ↓ ↓ 7450			

Radiological Information	Non-RAD	RAD	RADII	
What is the radiological classification of the samples?	X			RSO RAD Receipt #
				Comments:
Radioactivity Screening Results (maximum observed CPM)	20			*If > x2 area background is observed on a non-radioactive sample, contact the RSO to investigate.
PM (or PMA) review of Receiving Rad classification: CAJ Initials 6/14/05 Date:				

6

INORGANIC ANALYSIS

Metals Fractional Narrative
Parsons Engineering (PARS)
SDG 138544

Method/Analysis Information

Analytical Batch:	434149
Prep Batch :	434148
Standard Operating Procedures:	GL-MA-E-013 REV# 13, GL-MA-E-006 REV# 9
Analytical Method:	SW846 6010B
Prep Method :	SW846 3005A

Sample Analysis

Sample ID	Client ID
138544001	450001
138544002	450002
138544003	450003
138544004	450004
138544005	450005
138544006	450006
138544007	450007
138544008	450007D
138544009	450008
138544010	450009
138544011	450010
138544012	450011
138544013	450012
138544014	450013
138544015	450014
138544016	450015
138544017	450016

138544018	450017
138544019	IDW307
1200867834	Method Blank (MB)
1200867835	Laboratory Control Sample (LCS)
1200867839	138544007(450007L) Serial Dilution (SD)
1200867836	138544007(450007D) Sample Duplicate (DUP)
1200867837	138544007(450007S) Matrix Spike (MS)
1200867838	138544007(450007SD) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by General Engineering Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The ICP analysis was performed on a Thermo Jarrell Ash 61E Trace axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium internal standard. Operating conditions for the Trace ICP are set at a power level of 950 watts. The instrument has a peristaltic pump flow rate of 140 RPM (2.0 mL/min sample uptake rate), argon gas flows of 15 L/min and 0.5 L/min for the torch and auxiliary gases, and a pressure setting of 26 PSI for the nebulizer.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
All CRDL standard(s) met the referenced advisory control limits.

ICSA/ICSAB statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
Sample 138544007 (450007) was selected as the quality control (QC) sample for this SDG.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

Matrix Spike Duplicate (MSD) Recovery Statement
The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four time (4X) the spike concentration added. All applicable elements met the acceptance criteria.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is 5X the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations that are 25X the IDL for CVAA, 50X the IDL for ICP, and 100X the IDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the acceptance criteria of less than 10% difference (%D).

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in soil samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG did not require dilutions.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Nonconformance Documentation
Nonconformance reports (NCRs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A NCR was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: _____ **Date:** 4/13/11

SAMPLE DATA SUMMARY

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544001 **CLIENT ID:** 450001

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544002 **CLIENT ID:** 450002

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	23.7	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544003 **CLIENT ID:** 450003

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544004 **CLIENT ID:** 450004

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	6.4	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544005 **CLIENT ID:** 450005

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	29.1	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544006 **CLIENT ID:** 450006

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	19.8	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544007 **CLIENT ID:** 450007

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	10.8	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544008 **CLIENT ID:** 450007D

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	28.7	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544009 **CLIENT ID:** 450008

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544010 **CLIENT ID:** 450009

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	4.8	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544011 **CLIENT ID:** 450010

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	3.1	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544012 **CLIENT ID:** 450011

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	5.6	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544013 **CLIENT ID:** 450012

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	3	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544014 **CLIENT ID:** 450013

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	29.5	ug/L			P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544015 **CLIENT ID:** 450014

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544016 **CLIENT ID:** 450015

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	4.1	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544017 **CLIENT ID:** 450016

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	7	ug/L	B		P	2.5	TRACE2	061705

Comments:

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544018 **CLIENT ID:** 450017

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14-JUN-05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439-92-1	Lead	2.5	ug/L	U		P	2.5	TRACE2	061705

Comments:

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 138544 **METHOD TYPE:** SW846

SAMPLE ID: 138544019 **CLIENT ID:** IDW307

CONTRACT: PARS01001

MATRIX: W **DATE RECEIVED** 14–JUN–05 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M	MDL	Instrument ID	Analytical Run
7439–92–1	Lead	215	ug/L			P	2.5	TRACE2	061705

Comments: