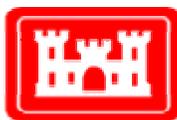


FINAL

Remedial Action Report

Site CW-4

U. S. Army Installation Fort Monmouth
Fort Monmouth, New Jersey



Directorate of Public Works



September 9, 2005

Versar INC.

4700 South McClintock Drive, Suite 150
Tempe, Arizona 85282

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United States Army
Fort Monmouth, New Jersey

Remedial Action Report

Metal Contamination at Site CW-4

Fort Monmouth, New Jersey

September 9, 2005

PREPARED BY:



**4700 SOUTH MCCLINTOCK DRIVE, SUITE 150
TEMPE, AZ 85282**

September 9, 2005

VERSAR PROJECT NO. 4435.034

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EXECUTIVE SUMMARY

This Remedial Action Report (RAR) presents a compilation, prepared by Versar, Inc. (Versar), of the results of the remedial action efforts conducted by the United States (U.S.) Army Garrison Fort Monmouth – Directorate of Public Works (DPW) at Site CW-4, the Indoor Pistol Range. Site CW-4 is associated with a one story wood structure used as a small arms firing range, referred to as Building 2537 and located in the Charles Wood area of U.S. Army Fort Monmouth. The objective of the remedial action was to remove all potentially impacted soil resulting from past operations at the site. Versar has developed this RAR based on the activities performed and the results of the remedial action.

Site CW-4 was initially identified as a site containing known or suspected waste materials within the Charles Wood Area and was investigated as part of Site Investigation (SI) activities conducted by Roy F. Weston, Inc. (Weston) in 1994 and 1995. As a result of the findings of the SI Report (Weston, 1995), the DPW prepared a Decision Document describing a selected remedial alternative for Site CW-4. The selected remedial alternative involved the removal of spent rounds, casings and lead impacted soil; thereby eliminating the identified contaminant of concern. DPW then coordinated with the State of New Jersey Department of Environmental Protection (NJDEP) regarding implementation of the selected remedial alternative.

TECOM-Vinnell Services (TVS) was contracted by DPW to implement further soil investigation efforts at CW-4 Site in support of the planned remedial alternative and then to implement the remedial action. Five individual rounds of soil sampling activities were conducted to delineate and confirm the area exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC) for lead (400 mg/Kg). A total of 127 soil samples were collected between November 14, 1996 and June 4, 1997 and analyzed for total lead. Samples revealing total lead concentrations above 400 mg/Kg were delineated and the area was designated for excavation. Approximately 53 cubic yards of soil were excavated. Post excavation soil sampling was conducted to confirm the effectiveness of the soil removal. A final post excavation soil sample was collected following the excavation activities. This sample confirmed concentrations of lead below the NJDEP RDCSCC. No groundwater was encountered during excavation activities; therefore, no groundwater sampling was conducted. Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone and sand.

The soil was transported and disposed of at the Chemical Waste Management Facility located in Model City, New York. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory.

No further action is proposed in regard to Site CW-4.

1.0 INTRODUCTION

Versar has been contracted by the U.S. Army Garrison, Fort Monmouth DPW, Fort Monmouth, New Jersey to prepare an RAR for the lead contaminated soils at Site CW-4 located in the Charles Wood Area of Fort Monmouth. This report addresses the remedial activities performed at this site as of January 2001.

1.1 Objectives

The objective of this RAR is to present the site remedial action process performed at Site CW-4. The purpose of the remedial action was to excavate and dispose of the shallow soils impacted by lead in the vicinity of the pistol range area. A Decision Document was prepared and submitted by the Fort Monmouth DPW, which contains a description of the site and a summary of the risks and remedial alternatives. This document is provided in **Appendix A**. The remedial actions were conducted in accordance with NJDEP Technical Requirements for Site Remediation, N.J.A.C. 7:26E, et al.

The remedial action encompassed the following:

- Excavating “hot spot” areas identified through grid sampling conducted from November 14, 1996 through October 1999.
- Characterizing soils for off-site disposal.
- Comparing the results of the sampling program with the NJDEP RDCSCC.
- Disposal of contaminated soil (conducted by Fort Monmouth).

1.2 Report Organization

This report is organized to minimize repetition. **Section 2.0** provides background information and a general description of Site CW-4 located in the Charles Wood Area. **Section 3.0** describes and summarizes the characterization and delineation of contaminants, sampling procedures and remedial activities conducted at the site. **Section 4.0** provides a summary of the remedial action effectiveness, soil disposal and cost summary.

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING

The following sections describe the site background and environmental setting of the area surrounding Fort Monmouth and the CW-4 site. Included is a description of the site location, background, site conditions and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Brook, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WWI) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

The Charles Wood Area is composed of approximately 511 acres and is located 1 mile west of the Main Post. The Charles Wood Area is bounded by Tinton Avenue to the north, residential development and Pine Brook Road to the south, and the Garden State Parkway to the west. The Charles Wood Area is used primarily for research and development (R&D), and testing, and provides the greatest number of housing units available on-post.

Site CW-4 is located in the Charles Wood Area and encompasses the former small arms firing range and the surrounding ground surface. The range is a one story wood structure (Building 2537) built in 1945. The small arms were fired into a metal baffle that deflected the rounds into a sand pit. The sand was then sifted and spent rounds and shell casings were disposed of off-site. In addition, the firing range was ventilated using a filtered blower. Site CW-4 encompasses approximately 32,000 square feet (0.7 acre). A site map is provided in **Figure 2**.

2.2 Site Background

Suspected hazardous waste sites at Fort Monmouth were initially identified in a report prepared by the U.S Army Toxic and Hazardous Materials Agency (USATHAMA) entitled: "Installation Assessment of Fort Monmouth Report 171", dated May 1980. This report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). Weston then conducted a background investigation on these sites and on eight additional sites, identified by Fort Monmouth and the NJDEP. Weston's Report (Weston, 1993) recommended additional

investigations at 22 of the sites and NJDEP approved the recommendations on 20 April 1995. Weston performed additional field investigation activities at the 22 sites, including Site CW-4, between November 1994 and November 1995. The additional field investigation activities included surface geophysical investigations, sediment and surface-water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitoring well installation and sampling, and tidal monitoring. The results of these investigation activities were presented in the Weston Report entitled: “Final, Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report”, December 1995.

The recommendations of the Weston Site Investigation (SI) Report for Site CW-4 were as follows: the results of soil sampling performed indicated that only lead was detected at the spent round disposal area at a concentration exceeding the respective NJDEP RDCSCC of 400 milligrams per kilogram (mg/kg). The section from the SI report which discusses the site investigation activities at Site CW-4 is provided in **Appendix B**.

The DPW prepared a Decision Document describing the selected remedial alternative for Site CW-4 and further investigations were then conducted in support of the planned remedial action. The planned remedial alternative encompassed removing the affected soil and collecting confirmatory samples at the base of the excavation. The further investigation activities were conducted in 1996 and 1997 and the remedial action was completed in June 1999, with further sampling conducted in October 1999. The indoor firing range is currently inactive and Building 2537 has been demolished.

2.3 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Site CW-4. Included is a description of the regional geology of the area surrounding Fort Monmouth, as well as descriptions of the local geology and hydrogeology of the Main Post Area.

2.3.1 Regional and Local Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. Site CW-4 is located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 3**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet (ft) per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown and Navesink Formations). The individual thickness for these units varies greatly (i.e., from several ft to several hundred ft). The Coastal Plain deposits thicken to the southeast from the Fall Line (i.e., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 ft in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 ft per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard, 1969). Groundwater occurs beneath the site at a depth of approximately 1 to 2 ft below ground surface (bgs).

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 ft per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown, fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is brown silt in Monmouth County (Jablonski, 1968).

2.3.2 Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank and Tinton Sands) is dominated by calcium, magnesium and iron. The sediments in the area of Fort Monmouth were deposited in fluvia-deltaic to nearshore environments.

The water table aquifer in the Main Post area is identified as part of the “composite confining units,” or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan

Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation.

Well records indicate that wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm). Water in these upper hydrogeologic units is typically encountered at shallow depths below ground surface (2 to 9 ft bgs). However, domestic wells are generally screened deeper in these upper hydrogeologic units. The shallow water table conditions in the Tinton and Red Bank Sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Water in this water table aquifer will flow east toward the Atlantic Ocean. Local topography will tend to deflect the flow toward local depressions.

As stated in the SI Report (Weston, 1995), N.J.A.C. 7:9-6, *Groundwater Quality Standards*, establishes groundwater criteria for different classes of groundwater. Class II-A, which is defined as all groundwater that is not classified as one of the other special classes, is the class for groundwater at Fort Monmouth. The primary designated use for Class II-A ground water is potable water; secondary uses include agricultural and industrial water.

Shallow groundwater is locally influenced within the Main Post Area by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries)
- Topography
- Nature of the fill material within the Main Post Area
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. The groundwater flow in the vicinity of Site CW-4 has been determined to be south towards Wampum Brook.

2.3.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey, (**Figure 4**) the following nine soil types are found in the Charles Wood Area.

At Atsion Sand
EvB Evesboro Sand, 2 to 5% slopes
FrB Freehold Sandy Loam, 2 to 5% slopes
FUB Freehold Sandy Loam – urban land complex, 0 to 10% slopes
HnA Holmdel Sandy Loam, 0 to 2% slopes
HUA Holmdel Sandy Loam – urban land complex, 0 to 5% slopes

- PT Pits, Sands and Gravel
- Sn Shrewsbury Sandy Loam
- UD Udorthents – urban land complex, 0 to 3% slopes

A brief description of each of the identified soils types is provided below.

The Atsion sand is a nearly level, poorly drained, soil found in depressional areas and on broad flats. The uppermost two inches are matted, partly decomposed organic material and roots with six inches of black sand below. The subsurface layer is a 14-inch thick grayish brown sand. The subsoil is dark reddish brown loamy sand, 18-inches thick, with approximately 10 inches of mottled brown sand in the lower layer. The substratum is mottled yellowish-brown fine sand to a depth of at least 60 inches. Permeability is moderately rapid or rapid in the subsoil and in the substratum. The available water capacity is low. Between November and June the seasonal high water table ranges from the surface to 1 ft (Jablonski and Baumley, 1989).

Evesboro soils are excessively drained soils that developed in acid, sandy, coastal plain sediments located on the uplands. These soils have a 4-inch surface layer where the upper 2 inches are matted decomposed organic matter with 2 inches of grayish-brown sand in the lower layer. The subsurface layer is 5 inches of yellowish-brown sand. The subsoil and substratum are yellowish-brown sand. Permeability is rapid in the subsoil and substratum. The available water capacity is low. The seasonal high water table is at a depth of more than 6 ft. Runoff is slow. At Charles Wood, the Evesboro soils are represented by the Evesboro sand, with 2 to 5% slopes (EvB) (Jablonski and Baumley, 1989).

Freehold soils are well-drained soils that formed in acid loamy coastal plain sediments that by volume are 1 to 10% glauconite and are found on uplands. The surface layer is 9-inches thick, dark yellowish brown sandy loam. The subsoil is 26 inches thick. The upper 16 inches of the subsoil are dark brown sandy loam and sandy clay loam with some glauconite. The lower 10 inches are brown sandy loam with glauconite. The substratum is yellowish brown loamy sand with much glauconite to a depth of 70 inches. Permeability is moderate in the subsoil and moderate to moderately rapid in the substratum. Surface runoff is medium. The available water capacity is high. Freehold soils are classified as nonhydric (Jablonski and Baumley, 1989).

Holmdel soils are level, moderately well drained to somewhat poorly drained soils found in depressions and on low divides. The surface layer is a 12-inch thick dark grayish brown sandy loam. The subsoil has two layers: the upper is a yellowish brown sandy loam, 12-inches thick, and the lower layer is mottled yellowish brown sandy clay loam to a depth of 38 inches. The substratum is mottled, yellowish brown and light olive brown sand and sandy loam to a depth of at least 60 inches. Permeability is moderate in the subsoil and substratum, and the available water capacity is high. The seasonal high water table ranges from 1.5 to 4 ft between December and May. Runoff is slow. Two Holmdel soils are found at the Charles Wood Area: the Holmdel sandy loam, 0 to 2% slopes and

the Holmdel sandy loam – urban land complex, with 0 to 5% slopes (HUA) (Jablonski and Baumley, 1989).

Soils classified as the Pits, Sand and Gravel have been excavated for sand and graves. These areas are sand with varying amounts of gravel. The properties of these soils vary from place to place (Jablonski and Baumley, 1989).

The Shrewsbury sandy loam is a level poorly drained soil found in depressions along drainage ways and on broad flats. The first inch is a dark reddish-brown, matted, partly decomposed organic material and roots with 8 inches of black sandy loam below. The subsurface layer is a 4-inch thick dark gray sandy loam. The subsoil has a 9-inch thick mottled grayish brown sandy clay loam and 9 inches of mottled olive gray sandy clay loam. The substratum is mottled dark greenish gray loamy sand. Permeability is moderate in the subsoil and moderately rapid in the substratum. The available water capacity is high. The seasonal high water table is between the surface and a depth of 1 ft from October to June. Runoff is slow and water ponds on the surface (Jablonski and Baumley, 1989).

Udorthent soils have been altered by excavating or filling (Jablonski and Baumley, 1989). In filled areas, these soils consist of loamy material that is more than 20 inches thick. Filled areas include flood plains, tidal marshes and areas with moderately well-drained to very poorly-drained soils. Some Udorthent soils contain concrete, asphalt, metal or glass.

The soils in the vicinity of Site CW-4 are classified as Holmdel Sandy Loam (HUA) which is an urban land complex with 0 to 5% slopes.

2.3.4 Topography and Surface Drainage

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. The land surface at the Main Post is relatively flat and ranges in elevation from 4 ft above mean sea level (amsl) in the east at Oceanport Creek to 32 ft amsl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft amsl in elevation.

At Charles Wood the land surface slopes from 72 ft amsl in the southwest, to 20 ft amsl at the eastern end of the golf course. In general, the southwestern corner of Charles Wood is gently rolling and has the greatest relief.

The Charles Wood area is drained principally by two unnamed tributaries of Wampum Brook; one tributary flows eastward through the center of the camp, and the other flows along the southern boundary. East of Charles Wood, Wampum Brook is joined by several other unnamed tributaries before it becomes Wampum Lake. Wampum Lake discharges into Mill Creek, which flows through the Main Post. Some runoff from the northwest part of the golf course flows into Lafetra Creek, which is located north of Tinton Avenue.

At Charles Wood, several wetland areas were identified on the FWS National Wetland Inventory Long Branch quadrangle map. The lake on the golf course is classified as palustrine open water/unknown bottom. Several areas along the unnamed tributaries to Wampum Brook are classified palustrine forested wetland, broad-leaved deciduous.

Site CW-4 is located up-gradient of Wampum Brook. The USGS topographic map (**Figure 1**) shows that the land surface of the site is relatively flat at an elevation of approximately 40 ft amsl. Surface water runoff from Site CW-4 is likely to flow southward towards Wampum Brook.

3.0 REMEDIAL ACTION ACTIVITIES

The details and results of remedial activities including the soil delineation sampling, soil excavation and contaminated soil through disposal that occurred at Site CW-4 are described in the following sections.

3.1 Delineation Sampling

Based on the results of the SI, DPW contracted TVS to conduct further soil investigation activities to confirm the extent of lead impacted soil in support of the planned remedial alternative. Five individual rounds of soil sampling activities were conducted between November 14, 1996 and June 4, 1997 to identify and delineate areas of lead impacted soil. A soil boring location map is provided in **Figure 5**. The five rounds of sampling performed are summarized below.

At Site CW-4, the contaminant of concern proposed for remedial action is lead and the media of concern is soil. The applicable remediation standard is the New Jersey RDCSCC for lead in soil: 400 milligrams per kilogram (mg/Kg). The Decision Document letter prepared by Fort Monmouth (**Appendix A**) and submitted to the NJDEP identified the proposed remediation standard of 400 mg/kg for lead in soils.

3.1.1 Sampling Process

On November 14, 1996, 25 soil samples were collected from five boring locations. The sampled area was located approximately 40 ft from the northeast side of Building 2537. Samples were collected at depths ranging from 6-inches to 4.3 ft bgs. Based on the identified lead concentrations, additional sampling was required for further delineation of the lead contamination.

On December 4, 1996, 14 additional borings were advanced and two samples were collected from each location. Lead levels exceeding the NJDEP RDCSCC were found within the 0-6" depth interval. Further delineation of the lead impacted soil was conducted between December 19 and 23, 1996. A total of 48 samples were collected from 24 sampling points. Sample locations were advanced in a radial pattern extending out from the initial sampled area. Results continued to indicate lead concentrations exceeding the RDCSCC within the 0 to 6-inch depth interval.

A fourth sampling round, conducted on May 19, 1997, consisted of 16 samples from eight boring locations. Only three of the 16 samples were found to contain lead concentrations exceeding the RDCSCC.

On June 4, 1997, final delineation activities were conducted. Ten samples were collected from five sample locations. None of these samples were found to contain concentrations of lead exceeding 400 mg/kg. **Figure 6** depicts the sample locations and sampling results.

3.1.2 Delineation Results

A total of 127 soil samples were collected between November 14, 1996 and June 4, 1997 to confirm the extent of lead impacted soil in support of the planned remedial alternative. All samples were analyzed for Total Lead. A summary of sample results is provided in **Tables 1** through **Table 8**. The analytical data package is provided in **Appendix C**. The full data package, including Quality Control procedures, is on file at Fort Monmouth.

Soil sampling activities were conducted on November 14, 1996 to delineate the lead impacted area exceeding the New Jersey RDCSCC of 400 mg/kg. A total of 25 samples were collected of which nine samples were found to contain concentrations of lead exceeding the cleanup standards. Sample location 2537-A consisted of five samples, A1 through A5, collected at 6-inch intervals from a depth of 0 to 4.3 ft. Analytical results indicated lead concentrations in A1 through A5 to be 451,000 mg/kg, 20,600 mg/kg, 9,400 mg/kg, 3,970 mg/kg and 6,760 mg/kg, respectively. Samples 2537 B1, C1, D1 and E1, collected at the 0 to 6-inch depth interval, were found to contain lead at concentrations of 2,710 mg/kg, 2,350 mg/kg, 151,000 mg/kg, and 20,030 mg/kg, respectively. A summary of the analytical results from the 14 November 1996 sampling is provided in **Table 1**.

On December 4, 1996, 28 additional samples were collected. Five of these samples were found to contain lead concentrations exceeding the NJDEP RDCSCC. Samples 2537-H1, I1, L1, O1 and P1, collected at the 0 to 6-inch interval, indicated lead concentrations of 7,992 mg/kg, 520.4 mg/kg, 533.5 mg/kg, 499.5 mg/kg, and 499 mg/kg, respectively. A data summary table is provided in **Table 2**.

The third sampling event, conducted between December 19 and 23, 1996, indicated concentrations of lead exceeding the soil cleanup criteria in 11 of the 48 samples. Ten of these 11 samples were collected from the 0 to 6-inch depth interval. Sample 2537 LL2, with a lead concentration of 767 mg/kg, was collected at the 12 to 16-inch depth interval. Lead levels exceeding the NJDEP RDCSCC were detected in samples 2537-T1 (584.2 mg/kg), U1 (959 mg/kg), Z1 (32,870 mg/kg), AA1 (28,930 mg/kg), EE1 (16,540 mg/kg), II1 (24,920 mg/kg), JJ1 (6,127 mg/kg), KK1 (1,845 mg/kg), LL1 (2,888 mg/kg) and QQ1 (1,663 mg/kg). A data summary table is provided in **Table 3**.

On May 19, 1997, the fourth sampling event was conducted. A total of 16 samples were collected, three of which were found to exceed the cleanup criteria for lead in soil. Samples 2537-RR1, SS1 and UU1, collected at the 0 to 6-inch depth interval, were found to contain lead at concentrations of 74,390 mg/kg, 463.1 mg/kg and 1,364 mg/kg, respectively. A data summary table is provided in **Table 4**.

Based on these results, a final round of sampling was conducted to complete the delineation of lead impacted soil. On June 4, 1997, 10 samples were collected from 0 to 6-inch and 12 to 16 inch depths. None of the samples were found to contain concentrations of lead exceeding the NJDEP RDCSCC for lead in soil. A data summary of analytical results is provided in **Table 5**.

3.2 Excavation Activities

Based on the analytical results from the soil investigation efforts, TVS initiated excavation activities on June 19, 1997. The excavation extended horizontally approximately 30 square ft and vertically to a depth of 1 foot bgs; the vertical extent of the excavation activities was determined during the assessment phase of this ongoing investigation. Based on the lead concentrations detected in sample 2537-A (up to a depth of 4 ft bgs), additional excavation activities were conducted around the 2537-A area, measuring a 5-foot radius to a depth of 10 ft. **Figure 6** depicts the limits of the excavation area. Groundwater was not encountered in any of the excavation areas. In addition, DPW intended to excavate the bare patch of soil until spent rounds and shell casings were no longer visible. Soils determined to contain lead concentrations exceeding the NJDEP RDCSCC (400 mg/kg) were excavated, stockpiled and sampled. Approximately 53 cubic yards of lead impacted soil was excavated and placed in seven stockpiles. The stockpiled contaminated soils were placed on and covered by tarps at the completion of the excavation activities. Composite samples from the seven soil stockpiles were collected and submitted for Toxicity Characteristic Leaching Procedure (TCLP) lead analysis for the purpose of waste characterization and disposal (see **Table 6**).

Following the excavation activities, in August 1999, TVS collected one post-excitation sample and one duplicate sample from the deep (and most contaminated) excavation area of 2537-A. Sample A-6 and its duplicate, which were collected at the 10 to 10.5 ft interval, were analyzed for total lead (see **Table 6**). The lead post-excitation sampling results were compared to the NJDEP RDCSCC for lead (400 mg/kg). Neither the post-excitation sample nor its duplicate detected lead concentrations above 400 mg/kg.

The pre-excitation samples from excavation areas LL1 and LL2 (12" – 16") were both in exceedence of the NJDEP RDCSCC of 400 mg/kg; however, the LL excavation was only completed to a depth of 12" and the LL excavation area was not sampled post-excitation, possibly calling into question the completeness of the remediation in that area of the excavation. However, averaging the sampling results in the LL excavation area with the remaining soils nullifies the exceedences.

On October 28, 1999, DPW conducted additional soil investigation activities around three of the ventilation units associated with Building 2537. The ventilation units exhaust air from within the building. Six borings were installed around each of three ventilation units for a total of 18 boring locations. Two samples were collected from each boring location for a total of 36 samples (refer to **Figure 5** for sample locations). Soil samples were collected from two depth intervals (0 – 6" and 12" – 18") and submitted for total lead analysis. Analytical results indicated lead concentrations ranging from non-detect to 296.3 mg/kg, below the NJDEP RDCSCC for lead of 400 mg/kg. The analytical data from this additional investigation is summarized in **Table 8**.

During all site investigation/remedial activities, hazards at the work site, which may have posed a threat to the Health and Safety of personnel, were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard, were monitored by a qualified

individual utilizing air-monitoring devices. A copy of the Health and Safety Plan is provided in **Appendix D**.

Upon receiving analytical results and confirming completeness of the excavation activities, the excavation was backfilled to grade with certified clean crushed stone and sand. **Appendix E** contains receipts from the source of the backfill material.

Soil analyses for the samples, collected at Site CW-4 by TVS, were done at the US Army's Fort Monmouth Environmental Laboratory, a New Jersey certified laboratory (Certification No. 13461). Review of the analytical data report packages provided by the laboratory indicated that analytical data was of good quality and was reliable. The data reports indicated that the appropriate analytical methods were used, holding times were met and duplicate and blank analyses showed good reproducibility. The method detection limits achieved by the laboratory, for the various analytes were below the regulatory limits.

3.3 Schedule of Site Activities

A schedule of site activities regarding the SI, additional soil investigations and remedial action activities at Site CW-4 is provided below.

- 21 December 1994 – Weston initiated SI activities.
- 14 November 1996 - Initial soil sampling activities were conducted.
- 4 December 1996 - additional soil samples were collected
- 19 – 23 December 1996 - third soil sampling event was conducted.
- 19 May 1997 - fourth soil sampling event was conducted.
- 4 June 1997 – final soil sampling event conducted.
- 19 June 1997 - TVS initiated excavation activities.
- 24 June 1997 – backfilling activities initiated.
- June 1997- Site restoration efforts completed.
- 1 July 1997 - stockpiled soil was loaded and transported off-site for disposal at the CWM Chemical Services facility, located in Model City, New York.
- 8 August 1997 - DPW submitted an unmanifested waste report to the NJDEP.

4.0 FINDINGS/REMEDIAL ACTIONS

The findings of the remedial activities, as well as the details of the waste disposal activities performed at Site CW-4, are summarized in the following sections.

4.1 Remedial Action Effectiveness

TVS was retained by the U.S. Army DPW to implement additional soil investigation and remedial activities of Site CW-4, the former Indoor Pistol Range at the Charles Wood Aarea of Fort Monmouth. The objective of the investigation/remedial activities was to remove all lead impacted soil resulting from the past operation of the site.

The findings of the SI Report and the 127 soil samples collected at Site CW-4 between November 14, 1996 and June 4, 1997 and analyzed for Total Lead provided sufficient delineation to support the excavation of and determine the vertical extent of the excavation of contaminated soils. The post excavation soil samples (sample A-6 and its duplicate) collected from the most contaminated area of Site CW-4 and associated with Building 2537 contained concentrations of Lead below the NJDEP RDCSCC. The pre-excavation samples from the LL excavation area were in exceedence of the NJDEP RDCSCC; however, averaging the sampling results in the LL excavation area with the remaining soils nullifies the exceedences.

Fort Monmouth is a Federal facility and as such, no deed exists. No further action is proposed in regard to Site CW-4 and the Master Plan for Fort Monmouth will be modified to identify Site CW-4 and the remedial actions conducted. No restrictions are proposed regarding future use of this site.

4.2 Soil Disposal

A total of approximately 53 cubic yards of material was excavated during the remedial activities. All soil characterization and disposal was handled directly by the DPW. A composite soil sample was collected from each of the seven stockpiles and submitted for TCLP Lead analysis. A summary of the analytical results for the waste characterization sampling is provided in **Table 8**. Results indicated one of the seven samples, Soil Pile A, exceeded the maximum TCLP level for lead (5 mg/kg) at a concentration of 19.87 mg/kg. In order to obtain a higher level of waste treatment technology and reduce the Army's long-term liability, DPW opted to send all the stockpiled soils to a permitted hazardous waste treatment, storage, disposal facility (TSDF).

On July 1, 1997, the stockpiled soil was loaded onto four dump trailers and transported off-site for disposal at the CWM Chemical Services facility, located in Model City, New York. The soil from Soil Pile A, found to exceed the 5 mg/kg for TCPL Lead, was transported under a State of New York New York hazardous waste manifest. The additional soils, transported in the other three trailers, had been characterized as solid waste and were transported under standard non-hazardous waste manifests.

At the CWM facility, site personnel collected one sample from each trailer and combined the samples into one composite sample. The sample was submitted for TCLP lead analysis. Results indicated a concentration of 6.43 mg/kg for TCLP Lead. Based on the analytical results, the facility required all the soil to be disposed of under a hazardous waste manifest. DPW contracted Advanced Environmental Technology Services (AETS) to provide for disposal of the soil and arranged to have the appropriate hazardous waste manifests generated. The CWM facility was required to submit an unmanifested waste report for each of the three trailers to the New York Department of Environmental Conservation (NYDEC). In addition, the DPW had a requirement to submit an unmanifested waste report to the NJDEP. This was submitted on August 8, 1997. Copies of the hazardous waste manifests and unmanifested waste reports are included in **Appendix F.**

5.0 REFERENCES

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TABLES

Table 1
Analytical Data Summary - Lead in Soil
November 1996 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
2213.1	2537 A-1	0-6"	11/14/96	451,000	0.922
2213.2	2537 A-2	12-16"	11/14/96	20,600	1.115
2213.3	2537 A-3	24-28"	11/14/96	9,400	1.155
2213.4	2537 A-4	36-40"	11/14/96	3,970	1.339
2213.5	2537 A-5	48-52"	11/14/96	6,760	0.722
2213.6	2537 B-1	0-6"	11/14/96	2,710	1.269
2213.7	2537 B-2	12-16"	11/14/96	125.9	1.143
2213.8	2537 B-3	24-28"	11/14/96	6.86	0.982
2213.9	2537 B-4	36-40"	11/14/96	3.75	1.253
2213.10	2537 B-5	48-52"	11/14/96	ND	1.177
2213.11	2537 C-1	0-6"	11/14/96	2,350	1.192
2213.12	2537 C-2	12-16"	11/14/96	15.96	1.138
2213.13	2537 C-3	24-28"	11/14/96	9.01	1.056
2213.14	2537 C-4	36-40"	11/14/96	19.51	1.257
2213.15	2537 C-5	48-52"	11/14/96	ND	1.164
2213.16	2537 D-1	0-6"	11/14/96	151,000	1.025
2213.17	2537 D-2	12-16"	11/14/96	43.46	1.061
2213.18	2537 D-3	24-28"	11/14/96	ND	1.123
2213.19	2537 D-4	36-40"	11/14/96	ND	1.193
2213.20	2537 D-5	48-52"	11/14/96	ND	1.119
2213.21	2537 E-1	0-6"	11/14/96	20,030	1.250
2213.22	2537 E-2	12-16"	11/14/96	181.3	1.015
2213.23	2537 E-3	24-28"	11/14/96	16.1	1.151
2213.24	2537 E-4	36-40"	11/14/96	ND	1.147
2213.25	2537 E-5	48-52"	11/14/96	ND	1.167

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #'s: 2213.1-25, 11/18/96.

NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

Table 2
Analytical Data Summary - Lead in Soil
December 4, 1996 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
2236.1	2537 F1	0-6"	12/4/1996	44.1	1.24
2236.2	2537 F2	12-16"	12/4/1996	2.18	1.09
2236.3	2537 G1	0-6"	12/4/1996	176.9	1.12
2236.4	2537 G2	12-16"	12/4/1996	8.91	0.99
2236.5	2537 H1	0-6"	12/4/1996	7,992	1.20
2236.6	2537 H2	12-16"	12/4/1996	5.04	1.12
2236.7	2537 I1	0-6"	12/4/1996	520.4	1.18
2236.8	2537 I2	12-16"	12/4/1996	5.13	1.14
2236.9	2537 J1	0-6"	12/4/1996	244.9	1.15
2236.10	2537 J2	12-16"	12/4/1996	ND	1.05
2236.11	2537 K1	0-6"	12/4/1996	148.2	1.21
2236.12	2537 K2	12-16"	12/4/1996	23.01	1.18
2236.13	2537 L1	0-6"	12/4/1996	533.5	1.14
2236.14	2537 L2	12-16"	12/4/1996	7.67	1.18
2236.15	2537 M1	0-6"	12/4/1996	176.8	1.36
2236.16	2537 M2	12-16"	12/4/1996	35.7	1.19
2236.17	2537 N1	0-6"	12/4/1996	87.75	1.17
2236.18	2537 N2	12-16"	12/4/1996	ND	1.04
2236.19	2537 O1	0-6"	12/4/1996	499.5	1.13
2236.20	2537 O2	12-16"	12/4/1996	67.83	1.14
2236.21	2537 P1	0-6"	12/4/1996	499.0	1.17
2236.22	2537 P2	12-16"	12/4/1996	47.01	1.19
2236.23	2537 Q1	0-6"	12/4/1996	88.27	1.27
2236.24	2537 Q2	12-16"	12/4/1996	ND	1.17
2236.25	2537 R1	0-6"	12/4/1996	199.6	1.22
2236.26	2537 R2	12-16"	12/4/1996	ND	1.13
2236.27	2537 S1	0-6"	12/4/1996	98.0	1.12
2236.28	2537 S2	12-16"	12/4/1996	ND	1.09
2236.29	Field Dup.	-	12/4/1996	ND	1.03

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #'s: 2236.1-29, 12/06/96.

NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

Table 3
Analytical Data Summary - Lead in Soil
December 19-23, 1996 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
2252.1	2537 T1	0-6"	12/19/96	584.2	1.15
2252.2	2537 T2	12-16"	12/19/96	67.62	0.98
2252.3	2537 U1	0-6"	12/19/96	959.0	1.08
2252.4	2537 U2	12-16"	12/19/96	143.0	0.79
2252.5	2537 V1	0-6"	12/19/96	365.0	1.04
2252.6	2537 V2	12-16"	12/19/96	225.2	1.05
2252.7	2537 W1	0-6"	12/19/96	147.2	1.09
2252.8	2537 W2	12-16"	12/19/96	7.480	1.15
2252.9	2537 X1	0-6"	12/19/96	20.54	1.37
2252.10	2537 X2	12-16"	12/19/96	18.36	1.08
2252.11	2537 Y1	0-6"	12/19/96	121.6	1.28
2252.12	2537 Y2	12-16"	12/19/96	13.44	0.96
2252.13	Field Duplicate	-	12/19/96	8.190	1.17
2253.1	2537 Z1	0-6"	12/20/1996	32,870	1.37
2253.2	2537 Z2	12-16"	12/20/1996	3.890	1.11
2253.3	2537 AA1	0-6"	12/20/1996	28,930	1.22
2253.4	2537 AA2	12-16"	12/20/1996	ND	1.07
2253.5	2537 BB1	0-6"	12/20/1996	142.5	1.25
2253.6	2537 BB2	12-16"	12/20/1996	14.13	1.13
2253.7	2537 CC1	0-6"	12/20/1996	132.9	1.43
2253.8	2537 CC2	12-16"	12/20/1996	ND	1.05
2253.9	2537 DD1	0-6"	12/20/1996	317.6	1.36
2253.10	2537 DD2	12-16"	12/20/1996	ND	1.15
2253.11	2537 EE1	0-6"	12/20/1996	16,540	1.19
2253.12	2537 EE2	12-16"	12/20/1996	ND	1.04
2253.13	2537 FF1	0-6"	12/20/1996	333.2	1.36
2253.14	2537 FF2	12-16"	12/20/1996	ND	1.09
2253.15	2537 GG1	0-6"	12/20/1996	120.6	1.16
2253.16	2537 GG2	12-16"	12/20/1996	25.50	1.00
2253.17	2537 HH1	0-6"	12/20/1996	309.6	1.29
2253.18	2537 HH2	12-16"	12/20/1996	4.680	1.04
2253.19	Field Duplicate	-	12/20/1996	4.480	1.12
2254.1	2537 II1	0-6"	12/23/96	24,920	1.30
2254.2	2537 II2	12-16"	12/23/96	29.84	1.17
2254.3	2537 JJ1	0-6"	12/23/96	6,127	1.33
2254.4	2537 JJ2	12-16"	12/23/96	21.60	1.08
2254.5	2537 KK1	0-6"	12/23/96	1,845	1.27
2254.6	2537 KK2	12-16"	12/23/96	1.270	1.18
2254.7	2537 LL1	0-6"	12/23/96	2,888	1.17
2254.8	2537 LL2	12-16"	12/23/96	767.0	1.18
2254.9	2537 MM1	0-6"	12/23/96	174.3	1.19
2254.10	2537 MM2	12-16"	12/23/96	16.09	1.11
2254.11	2537 NN1	0-6"	12/23/96	141.2	1.32
2254.12	2537 NN2	12-16"	12/23/96	67.28	1.15
2254.13	2537 OO1	0-6"	12/23/96	70.00	1.12
2254.14	2537 OO2	12-16"	12/23/96	19.89	1.17
2254.15	2537 PP1	0-6"	12/23/96	80.69	0.99
2254.16	2537 PP2	12-16"	12/23/96	ND	1.10
2254.17	2537 QQ1	0-6"	12/23/96	1,663	1.18
2254.18	2537 QQ2	12-16"	12/23/96	134.6	1.06
2254.19	Field Duplicate	-	12/23/96	142.0	1.02

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #'s: 2252.1-13, 12/31/96; 2253.1-19, 1/03/97, and 2254.1-19, 1/10/97.

NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

Table 4
Analytical Data Summary - Lead in Soil
May 19, 1997 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
2568.01	2537 RR1	0-6"	5/19/1997	74,390	9.83
2568.02	2537 RR2	12-16"	5/19/1997	273.5	10.98
2568.03	2537 SS1	0-6"	5/19/1997	463.1	9.68
2568.04	2537 SS2	12-16"	5/19/1997	179.2	9.61
2568.05	2537 TT1	0-6"	5/19/1997	297.6	8.80
2568.06	2537 TT2	12-16"	5/19/1997	279.2	10.15
2568.07	2537 UU1	0-6"	5/19/1997	1,364	1.03
2568.08	2537 UU2	12-16"	5/19/1997	109.4	1.05
2568.09	2537 VV1	0-6"	5/19/1997	20.62	1.11
2568.10	2537 VV2	12-16"	5/19/1997	19.54	1.09
2568.11	2537 WW1	0-6"	5/19/1997	41.21	1.33
2568.12	2537 WW2	12-16"	5/19/1997	23.69	1.08
2568.13	2537 XX1	0-6"	5/19/1997	98.07	1.25
2568.14	2537 XX2	12-16"	5/19/1997	28.36	1.03
2568.15	2537 YY1	0-6"	5/19/1997	245.6	1.23
2568.16	2537 YY2	12-16"	5/19/1997	16.32	1.13

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #: 2568.01-.16, 5/23/97.

NOTES:

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

Table 5
Analytical Data Summary - Lead in Soil
June 4, 1997 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
2635.01	2537 ZZ1	0-6"	6/4/1997	154.9	2.77
2635.02	2537 ZZ2	12-16"	6/4/1997	5.960	2.98
2635.03	2537 AAA	0-6"	6/4/1997	81.67	3.08
2635.04	2537 BBB	0-6"	6/4/1997	48.92	3.01
2635.05	2537 CCC	0-6"	6/4/1997	71.44	3.17
2635.06	2537 DDD1	0-6"	6/4/1997	315.3	2.75
2635.07	2537 DDD2	12-16"	6/4/1997	60.46	3.02
2635.08	2537 EEE	0-6"	6/4/1997	43.85	2.14
2635.09	2537 FFF	0-6"	6/4/1997	6.100	3.05
2635.10	2537 GGG	0-6"	6/4/1997	115.4	2.96

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #: 2635.01-.10, 6/11/97.

NOTES:

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

Table 6
Post-Excavation Sample - Lead in Soil
August 10, 1999 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
4700.01	A-6	10-10.5'	8/10/1999	ND	14.39
4700.02	Dup	10-10.5'	8/10/1999	ND	13.65

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #: 4700.01-.02, 8/10/99.

NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg)

Table 7
Analytical Data Summary - Lead in Soil
Soil Stockpile Sampling
June 23, 1997 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Date of Collection	TCLP Lead Result (mg/L)	MDL (mg/L)
2726.01	Soil Pile A	6/23/1997	19.87	0.02
2726.02	Soil Pile B	6/23/1997	ND	0.02
2726.03	Soil Pile C	6/23/1997	ND	0.02
2726.04	Soil Pile D	6/23/1997	2.94	0.02
2726.05	Soil Pile E	6/23/1997	4.56	0.02
2726.06	Soil Pile F	6/23/1997	3.96	0.02
2726.07	Soil Pile G	6/23/1997	0.65	0.02
2726.08	Field Dup.	6/23/1997	1.81	0.02

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #: 2726.01-.08, 6/26/97.

NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of maximum TCLP criteria for Lead (>5 mg/L)

Table 8
Analytical Data Summary - Lead in Soil
October 28, 1999 Sampling Event
Site CW-4
Fort Monmouth, New Jersey

Laboratory Sample ID#	Field Sample Location	Depth	Date of Collection	Result (mg/Kg)	MDL (mg/Kg)
4891.01	2537 PR 01	0-6"	10/28/1999	74.47	10.34
4891.02	2537 PR 01	12-18"	10/28/1999	33.62	11.21
4891.03	2537 PR 02	0-6"	10/28/1999	63.98	8.42
4891.04	2537 PR 02	12-18"	10/28/1999	79.65	11.38
4891.05	2537 PR 03	0-6"	10/28/1999	27.38	11.41
4891.06	2537 PR 03	12-18"	10/28/1999	46.61	11.65
4891.07	2537 PR 04	0-6"	10/28/1999	103.8	11.54
4891.08	2537 PR 04	12-18"	10/28/1999	ND	11.75
4891.09	2537 PR 05	0-6"	10/28/1999	59.53	12.4
4891.10	2537 PR 05	12-18"	10/28/1999	ND	11.45
4891.11	2537 PR 06	0-6"	10/28/1999	113.4	12.06
4891.12	2537 PR 06	12-18"	10/28/1999	ND	12.02
4891.13	2537 PR 07	0-6"	10/28/1999	42.90	10.21
4891.14	2537 PR 07	12-18"	10/28/1999	56.97	11.87
4891.15	2537 PR 08	0-6"	10/28/1999	ND	11.73
4891.16	2537 PR 08	12-18"	10/28/1999	78.66	13.11
4891.17	2537 PR 09	0-6"	10/28/1999	52.33	11.38
4891.18	2537 PR 09	12-18"	10/28/1999	296.3	10.74
4891.19	2537 PR 10	0-6"	10/28/1999	57.83	11.57
4891.20	2537 PR 10	12-18"	10/28/1999	ND	11.82
4891.21	2537 PR 11	0-6"	10/28/1999	22.12	12.29
4891.22	2537 PR 11	12-18"	10/28/1999	14.35	11.96
4891.23	2537 PR 12	0-6"	10/28/1999	32.16	11.49
4891.24	2537 PR 12	12-18"	10/28/1999	ND	12.59
4891.25	2537 PR 13	0-6"	10/28/1999	18.01	12.87
4891.26	2537 PR 13	12-18"	10/28/1999	ND	10.46
4891.27	2537 PR 14	0-6"	10/28/1999	20.45	12.78
4891.28	2537 PR 14	12-18"	10/28/1999	58.39	12.69
4891.29	2537 PR 15	0-6"	10/28/1999	ND	12.78
4891.30	2537 PR 15	12-18"	10/28/1999	ND	11.75
4891.31	2537 PR 16	0-6"	10/28/1999	21.9	10.95
4891.32	2537 PR 16	12-18"	10/28/1999	ND	10.98
4891.33	2537 PR 17	0-6"	10/28/1999	16.01	11.44
4891.34	2537 PR 17	12-18"	10/28/1999	ND	10.05
4891.35	2537 PR 18	0-6"	10/28/1999	ND	10.05
4891.36	2537 PR 18	12-18"	10/28/1999	ND	9.84
4891.37	2537 DUP	0-6"	10/28/1999	32.99	11.78
4891.38	2537 DUP	12-18"	10/28/1999	ND	11.84

Source: U.S. Army Fort Monmouth Environmental Laboratory; LabID #: 4891.01-.38, 10/29/99

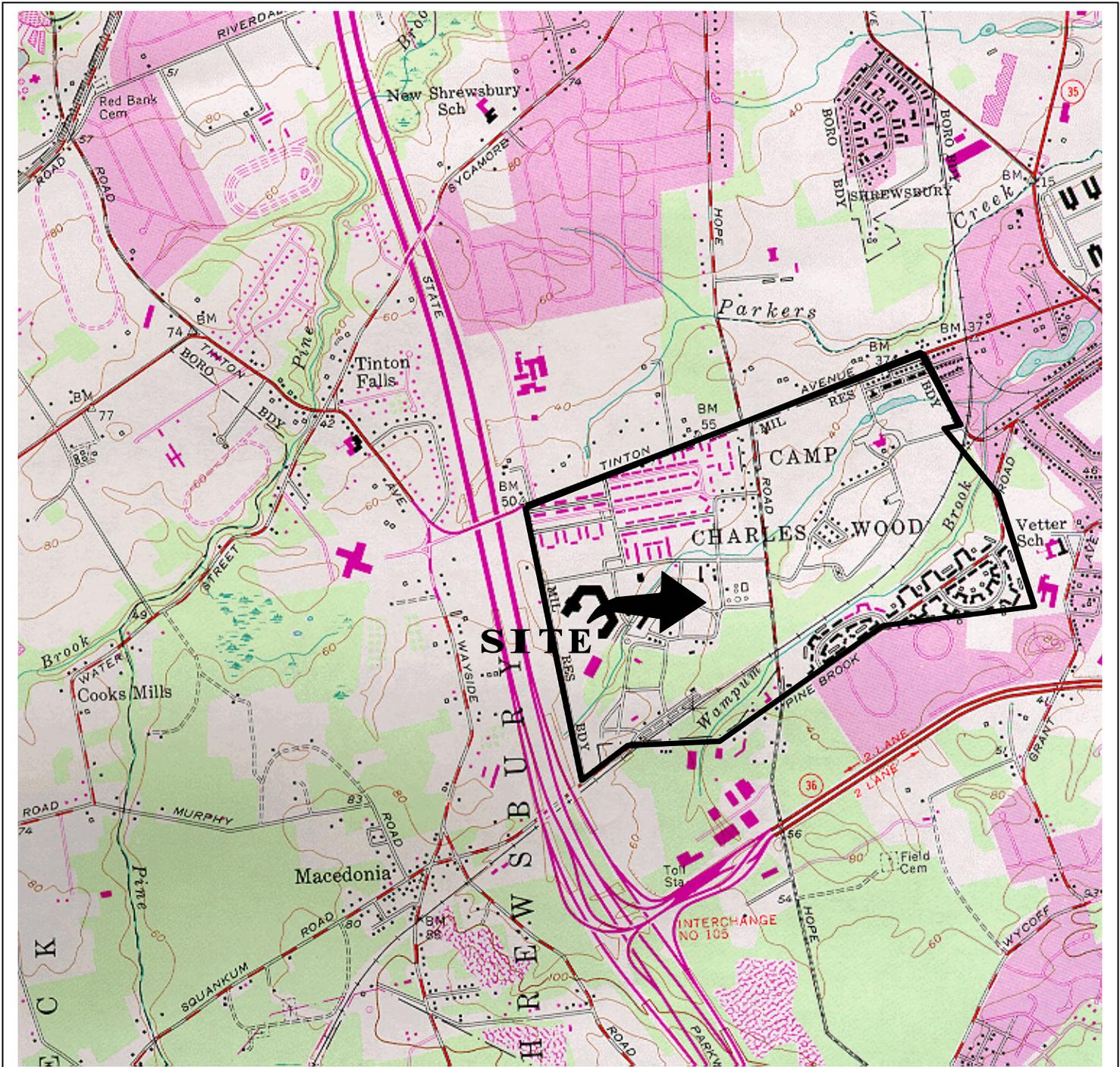
NOTES:

ND = Not Detected

MDL = Method Detection Limit

Bold/Shaded = Exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria for Lead (>400 mg/Kg).

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

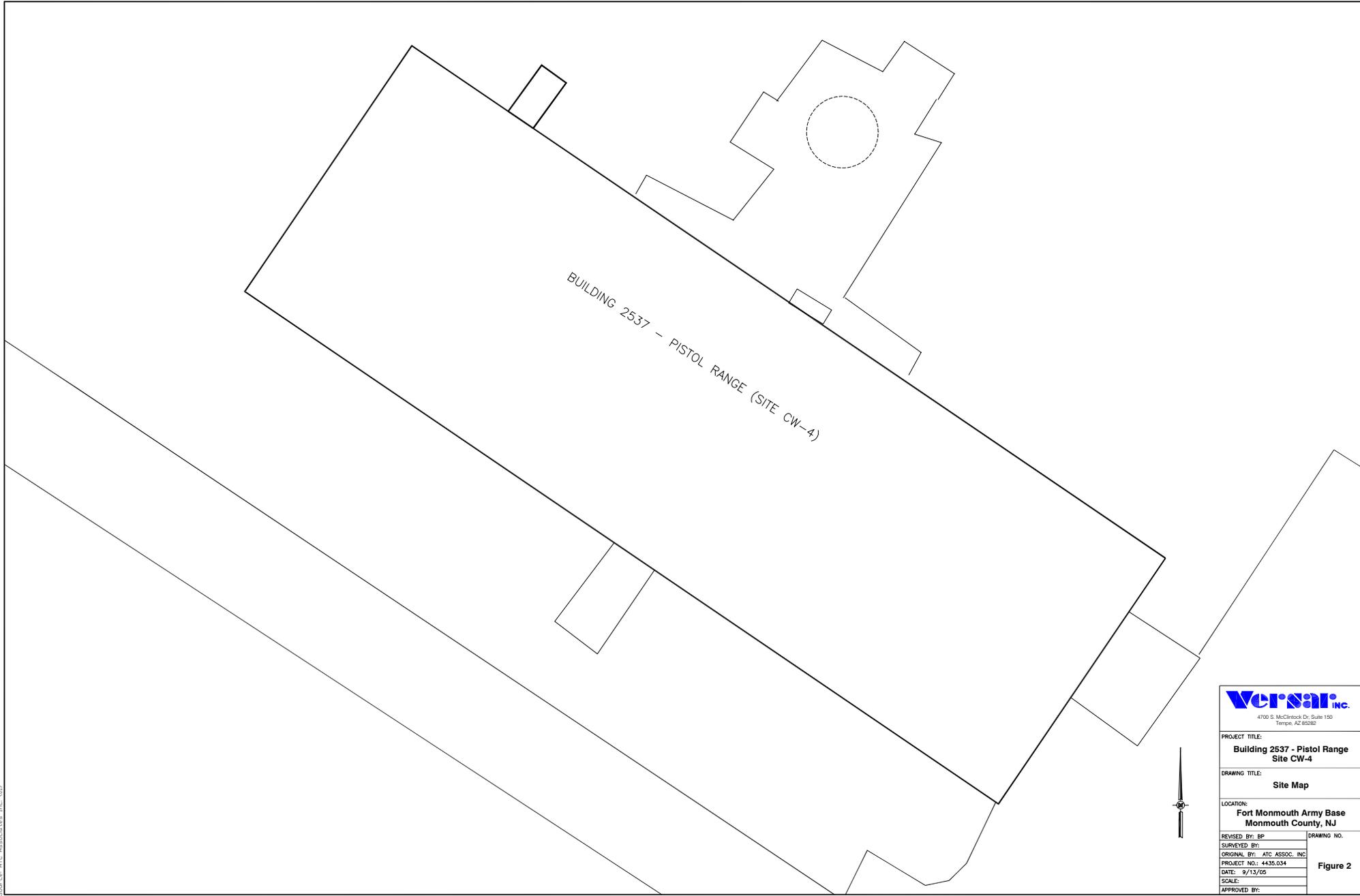


NEW JERSEY
QUADRANGLE LOCATION

Figure 1
Site Location Map
Site CW-4
Fort Monmouth, New Jersey

Versar INC. 201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

Mapped, edited and published by the Geological Survey



Source: ATC Associates, Inc. (03)



PROJECT TITLE:
**Building 2537 - Pistol Range
 Site CW-4**

DRAWING TITLE:
Site Map

LOCATION:
**Fort Monmouth Army Base
 Monmouth County, NJ**

REVISED BY: BP	DRAWING NO.:
SURVEYED BY:	
ORIGINAL BY: ATC ASSOC. INC	
PROJECT NO.: 4435.034	
DATE: 5/13/05	
SCALE:	
APPROVED BY:	

Figure 2

Geologic Map of New Jersey

SEDIMENTARY ROCKS

CENOZOIC

- Holocene: sand
- Tertiary: sand, silt, clay

MESOZOIC

- Cretaceous: sand, silt, clay
- Jurassic: siltstone, shale, sandstone
- Triassic: siltstone, shale, sandstone

PALEOZOIC

- Devonian: conglomerate, sandstone, shale, limestone
- Silurian: conglomerate, sandstone, shale, limestone
- Ordovician: shale, limestone
- Cambrian: limestone, sandstone

IGNEOUS AND METAMORPHIC ROCKS

MESOZOIC

- Jurassic: basalt
- Jurassic: diabase

PRECAMBRIAN

- marble
- gneiss, granite

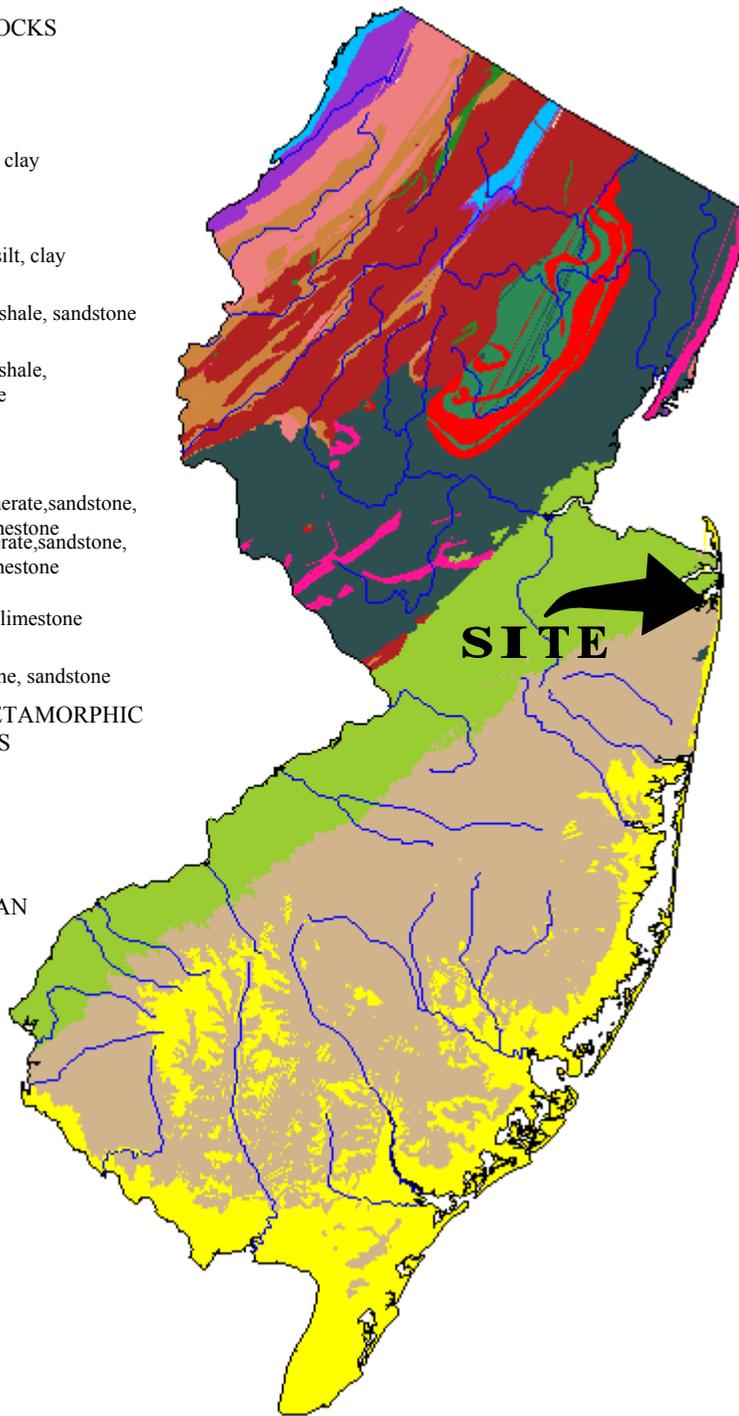
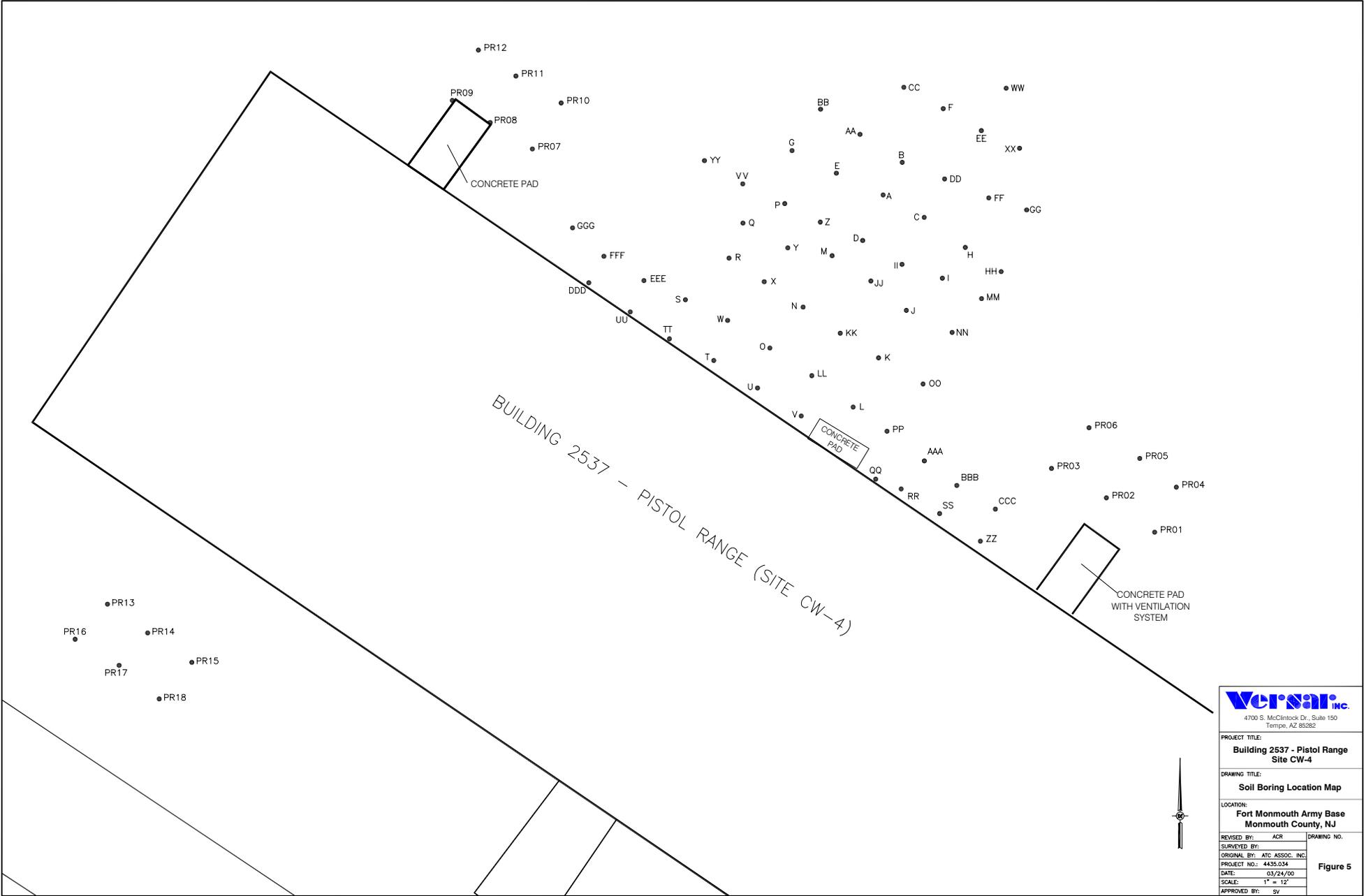
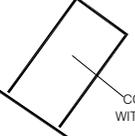
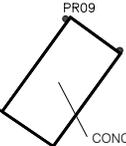


Figure 3
Geologic Map of New Jersey
Site CW-4
Fort Monmouth, New Jersey

Versar INC. 201 Gibraltar Road, Suite 100
 Horsham, PA 19044
 (215) 957-0955

BUILDING 2537 - PISTOL RANGE (SITE CW-4)



4700 S. McClintock Dr., Suite 150
Tempe, AZ 85282

PROJECT TITLE:
**Building 2537 - Pistol Range
Site CW-4**

DRAWING TITLE:
Soil Boring Location Map

LOCATION:
**Fort Monmouth Army Base
Monmouth County, NJ**

REVISED BY:	ACR	DRAWING NO.
SURVEYED BY:		
ORIGINAL BY:	ATC ASSOC. INC.	
PROJECT NO.:	4435.034	
DATE:	03/24/00	
SCALE:	1" = 12'	
APPROVED BY:	SV	

Figure 5

Source: ATC Associates, Inc. (03)



Versar inc.
4700 S. McClintock Dr., Suite 150
Tempe, AZ 85282

PROJECT TITLE:	
Building 2537 - Pistol Range Site CW-4	
DRAWING TITLE:	
Soil Excavation Limits and Lead Analytical Data Map	
LOCATION:	
Fort Monmouth Army Base Monmouth County, NJ	
REVISED BY:	ACR
SURVEYED BY:	
ORIGINAL BY:	ATC ASSOC. INC.
PROJECT NO.:	4425.014
DATE:	03/24/00
SCALE:	1" = 12'
APPROVED BY:	SV

Figure 6

APPENDICES

APPENDIX A

Ft. Monmouth – DPW Decision Document Letter

DECISION DOCUMENT

1. PURPOSE OF REMEDIAL ACTION

This decision document describes the remedial alternative for the CW-4 (Indoor Small Arms Range) Site located in the Charles Wood area of Fort Monmouth. The selected remedial alternative was chosen in accordance with the following regulatory requirements: CERCLA as amended by SARA, the NCP, RCRA, N.J.A.C. 7:26D (Cleanup Standards for Contaminated Sites), N.J.A.C. 7:26E (Technical Requirements for Site Remediation) and AR 200-1, as applicable.

An indoor small arms range is located at the CW-4 site. The range is a one story wood structure (Bldg. 2537) which was built in 1945. Spent rounds and shell casings are visible at the surface of a bare patch of soil approximately 5 feet in diameter northeast of the building. The area of contamination is located within 10 feet of a side entrance to the facility. Environmental sampling has confirmed the presence of lead in soil at the CW-4 site. Lead levels are above New Jersey Department of Environmental Protection (NJDEP) Direct Contact Soil Cleanup Criteria. Sampling has also confirmed that the lead is migrating vertically in the soil column. The Youth Activity Center (Bldg. 2566) is located approximately 250 feet from the area of concern. The selected remedial alternative involves removing the spent rounds, casings and contaminated soil from the site whereby eliminating the contaminants of concern.

This decision document was developed by the Directorate of Public Works Environmental Office, Fort Monmouth. All documentation has been submitted and approved by the NJDEP.

2. SUMMARY OF SITE RISK

The CW-4 Site is located in an unsecure area and is accessible to the public. As previously mentioned, the area of contamination is within 250 feet of the Youth Activity Center. Laboratory analysis has quantified lead levels at 1440 mg/kg at a depth of 6 feet. Groundwater is estimated to be at the 10 to 12 feet interval. Elevated levels of the referenced contaminant has been documented to cause adverse effects on living organisms. The effects of lead on small children have also been well documented.

3. SUMMARY OF REMEDIAL ALTERNATIVES

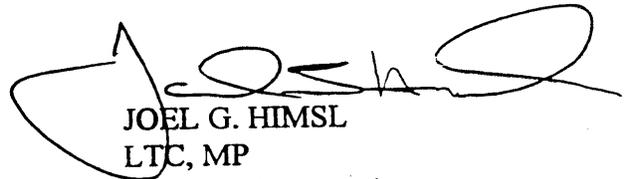
Approximately 17 cubic yards (26 tons) of contaminated soil shall be excavated and disposed of offsite. Excavation has been determined to be the most cost effective approach for eliminating the contaminant of concern at the site. The NJDEP Direct Contact Soil Cleanup Criteria for lead is 400 mg/kg. Following soil removal, the site shall be resampled and the data submitted to NJDEP. A no further action letter from the NJDEP shall be requested for the site.

4. PUBLIC/COMMUNITY INVOLVEMENT

At the present time, the Directorate of Public Works Environmental Office is working with the NJDEP and the U.S. Environmental Protection Agency Region II. Information relating to the site investigation and the planned remedial action has not been released to the general public.

5. DECLARATION

Because this remedy will not result in hazardous substances remaining on-site above levels that allow for unlimited use and unrestricted exposure, the five-year review will not apply to this action.



JOEL G. HIMSL
LTC, MP
Garrison Commander

APPENDIX B

Site CW-4 Section in the Weston (1995) Site Investigation Report

4.3.6 Range (Small Arms) (CW-4)

4.3.6.1 Site Location

The small arms firing range is a one-story building (Building T-2537) located in the central portion of the Charles Wood area (Figure 4.3-11). The approximate area of site CW-4 is 32,000 ft² (0.7 acre). The range is used for indoor firing of small arms. The small arms are fired into a metal baffle that deflects the rounds down into a sand pit. Currently, the sand is sifted and spent rounds and shell-casings are disposed of off-site. The firing range area is ventilated by a blower through a filter. The filter currently used is a Flanders Filters Model No. 0-00J-C-11-00-CL-12-00-GGF. It has an efficiency of 95%, based on a di-octyl-phthalate (DOP) test. A manufacturer's representative stated that he believes this filter would be close to 100% efficient in removing the likely particulates generated in a firing range.

Spent rounds are visible at the surface of a bare patch of soil about 3 ft in diameter northeast of the building. A pile of sand is on the northwest side of the building.

4.3.6.2 Site History

Interviews with facility personnel indicate that the interior of the building is cleaned periodically. The building is currently in use.

4.3.6.3 Sampling Effort

The CW-4 site is presented in Figure 4.3-11. The facility personnel intend to excavate the soil at the bare patch until spent rounds and shell casings are no longer visible. Because contaminated soil had not been excavated prior to the field effort, one soil boring was installed in place of two of the three surface soil samples proposed in the CDAP. The soil boring was drilled near the debris pile to a depth of 8 ft bgs, where saturation was noted at approximately 6.1 ft bgs. The lithology consisted of an orange-brown sand with trace silt. The soil sample from soil boring SB-01 was collected at a depth of 4 to 6 ft bgs and analyzed for TCL +30 parameters, TAL metals, and TPHs. One surface soil sample was collected from the bottom of

the sand pile (sample SS-01) using a scoop to dig 6 inches below the bottom of the pile in one location. No firing debris was observed. Surface soil boring SS-01 was analyzed for TAL metals only.

4.3.6.4 Soil Sampling Results

Two soil samples were collected, one sample (SB-01) from the 2- to 6-ft bgs sampling interval in the soil boring at the debris pile, and one sample (SS-01) from the 0 to 0.5-ft bgs interval from the sand pile in the rear of the building. The samples were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.3-7 compares the detected compound concentrations with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations. In addition, the results were also compared with the impact to groundwater SCC because no monitor wells were installed at this site.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected in site soil.

TPHs

Petroleum hydrocarbons were not detected in site soil.

Pesticides/PCBs

Pesticides/PCBs were not detected in site soil.

Table 4.3-7
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soils from Site CW-4

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/21/94 (4-6 ft bgs)	SS01-A01 11/30/95 (0-0.5 ft bgs)
METALS (mg/kg)					
Aluminum	3.9	NLE	15700	5030	687
Arsenic	0.35	20	31.6	1.5	7.8
Antimony	0.3	14	ND	ND	2.5
Barium	0.17	700	26	2.7	17.7
Beryllium	0.1	1	1.7	0.47	0.76
Calcium	2.2	NLE	653	302	699
Chromium	1.6	500	128	63.5	58.3
Cobalt	0.71	NLE	4.5	ND	0.62
Copper	2.2	600	7.27 ¹	379	3.2
Iron	0.58	NLE	45500	11500	19700
Lead	0.4	400 ²	15.1 ¹	1440	8.9
Magnesium	9.6	NLE	3960	1320	1450
Manganese	0.18	NLE	120 ¹	8.8	26.2
Nickel	1.4	250	8.3	1.5	2.3
Potassium	(12.3-25.8)	NLE	10600	3490	2720
Silver	0.54	110	0.26 ¹	ND	0.76
Selenium	0.3	63	0.85	ND	0.33
Sodium	3.8	NLE	50000	ND	16
Vanadium	0.53	370	59.6	20.6	37.3
Zinc	0.41	1500	55.6	42.6	24.6

Compound exceeding NJDEP soil cleanup criteria are noted by bold numbers.

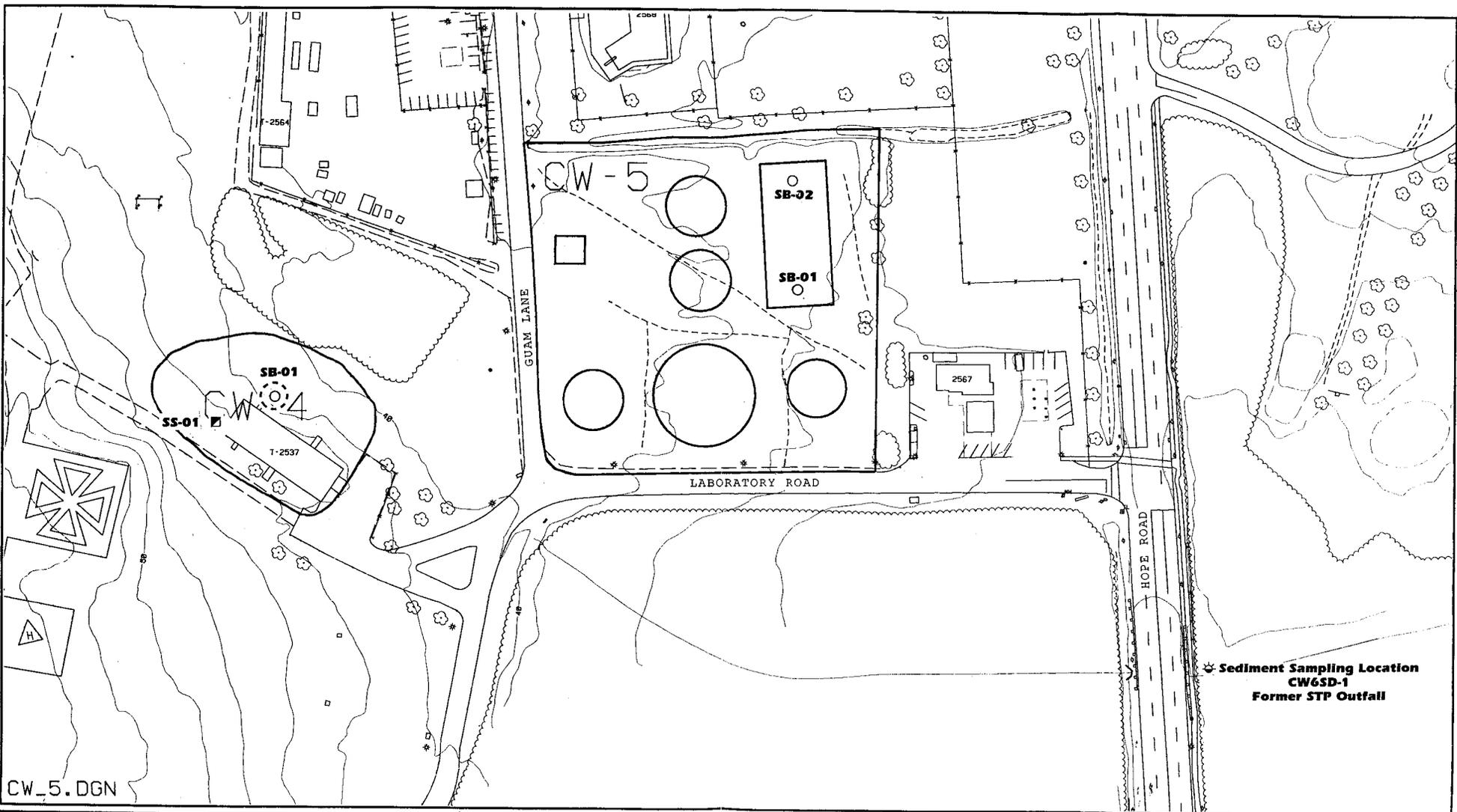
ND - Indicates that the compound was not detected at or below the quantification limits

NLE - No Level Established

Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

¹ Monmouth County maximum background concentrations.

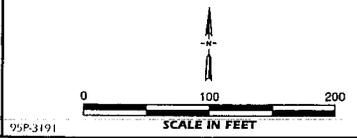
² NJDEP criteria are referenced in Site Remediation News, Winter 1995.



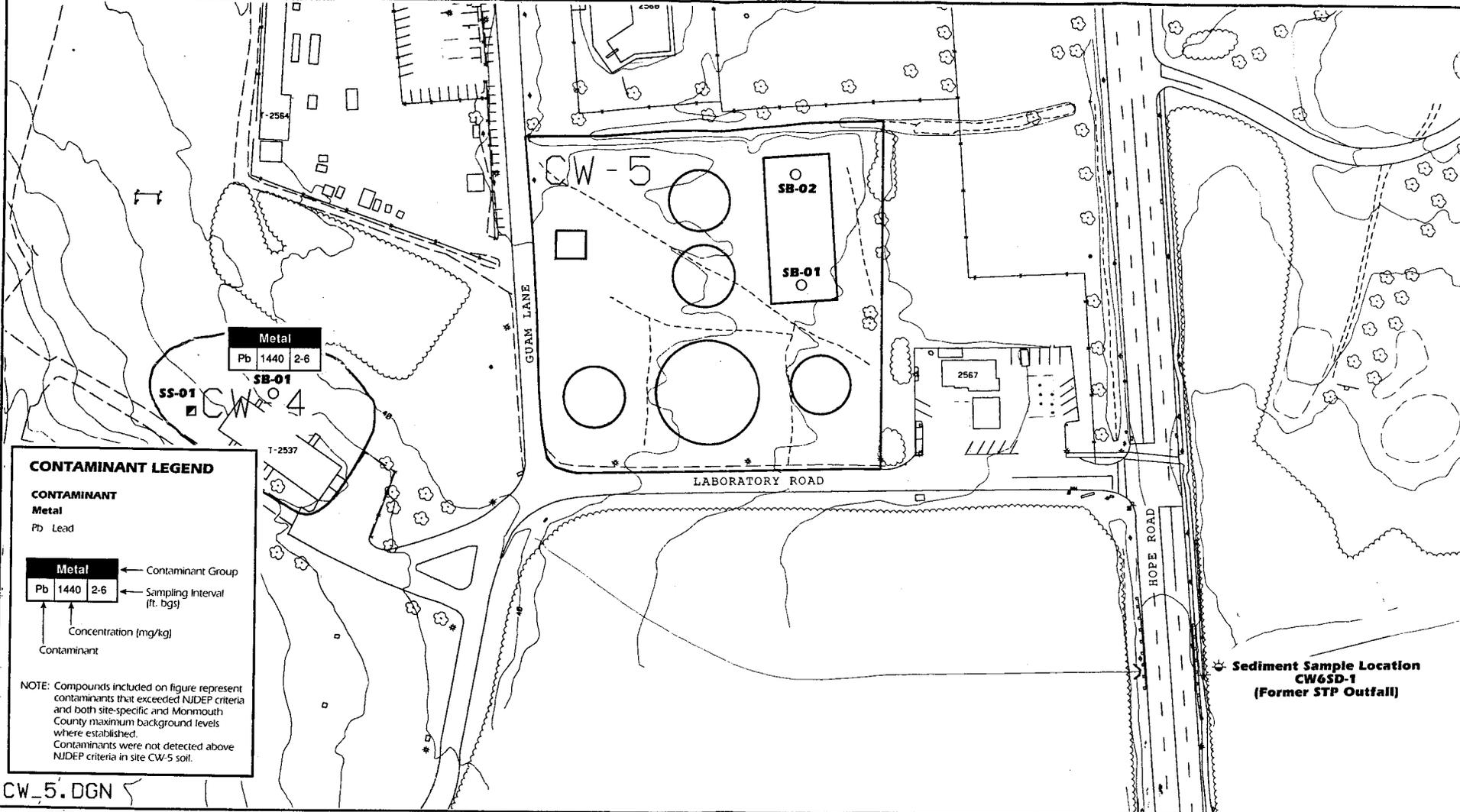
CW_5.DGN

LEGEND

- | | | | |
|------------------------------------|-------------------------|----------------|------------------------|
| ○ Soil Boring Location | — Road (paved) | ☁ Wooded Area | ▭ Site |
| ■ Surface Soil Sampling Location | ⋯ Road/Trails (unpaved) | 🌳 Tree/Bush | ⋯ Brook/Creek |
| ⊙ Proposed Area of Soil Excavation | *** Fence | ⚡ Light Pole | ⋯ Base Boundary |
| | 🏠 Building | ⚡ Utility Pole | 🌿 Marshy Area |
| | | | ⋯ Approximate Boundary |

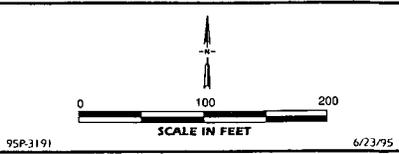


Fort Monmouth, Main Post
FIGURE 4.3-11
SMALL ARMS RANGE (CW-4) AND
FORMER SANITARY TREATMENT PLANT (CW-5)
SAMPLING LOCATIONS



CW_5.DGN

LEGEND	○ Soil Boring Location	— Road (paved)	☁ Wooded Area	□ Site
	■ Surface Soil Sampling Location	⋯ Road/Trails (unpaved)	🌳 Tree/Bush	~ Brook/Creek
		*** Fence	⚡ Light Pole	- - - Base Boundary
		🏠 Building	⚡ Utility Pole	⊘ Marshy Area
				- - - Approximate Boundary



Fort Monmouth, Charles Wood

FIGURE 4.3-12
SMALL ARMS RANGE (CW-4) AND
FORMER SANITARY TREATMENT PLANT (CW-5)
DISTRIBUTION OF CONTAMINANTS IN SITE SOILS

APPENDIX C

Analytical Data Package

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
 Fort Monmouth Environmental Laboratory
 ENVIRONMENTAL DIVISION
 Fort Monmouth, New Jersey
 PROJECT: Pistol Range

CW 4/Bldg. 2537

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
2537 A-1 0-6"	2213.01	Soil	14-Nov-96 09:50	11/14/96
2537 A-2 12-16"	2213.02	Soil	14-Nov-96 10:00	11/14/96
2537 A-3 24-28"	2213.03	Soil	14-Nov-96 10:10	11/14/96
2537 A-4 36-40"	2213.04	Soil	14-Nov-96 10:20	11/14/96
2537 A-5 48-52"	2213.05	Soil	14-Nov-96 10:30	11/14/96
2537 B-1 0-6"	2213.06	Soil	14-Nov-96 11:10	11/14/96
2537 B-2 12-16"	2213.07	Soil	14-Nov-96 11:20	11/14/96
2537 B-3 24-28"	2213.08	Soil	14-Nov-96 11:30	11/14/96
2537 B-4 36-40"	2213.09	Soil	14-Nov-96 11:40	11/14/96
2537 B-5 48-52"	2213.10	Soil	14-Nov-96 11:50	11/14/96
2537 C-1 0-6"	2213.11	Soil	14-Nov-96 13:10	11/14/96
2537 C-2 12-16"	2213.12	Soil	14-Nov-96 13:20	11/14/96
2537 C-3 24-28"	2213.13	Soil	14-Nov-96 13:30	11/14/96
2537 C-4 36-40"	2213.14	Soil	14-Nov-96 13:40	11/14/96
2537 C-5 48-52"	2213.15	Soil	14-Nov-96 13:50	11/14/96
2537 D-1 0-6"	2213.16	Soil	14-Nov-96 14:00	11/14/96
2537 D-2 12-16"	2213.17	Soil	14-Nov-96 14:10	11/14/96
2537 D-3 24-28"	2213.18	Soil	14-Nov-96 14:20	11/14/96
2537 D-4 36-40"	2213.19	Soil	14-Nov-96 14:30	11/14/96
2537 D-5 48-52"	2213.20	Soil	14-Nov-96 14:40	11/14/96
2537 E-1 0-6"	2213.21	Soil	14-Nov-96 14:50	11/14/96
2537 E-2 12-16"	2213.22	Soil	14-Nov-96 15:00	11/14/96
2537 E-3 24-28"	2213.23	Soil	14-Nov-96 15:10	11/14/96
2537 E-4 36-40"	2213.24	Soil	14-Nov-96 15:20	11/14/96
2537 E-5 48-52"	2213.25	Soil	14-Nov-96 15:30	11/14/96
2537 F1 0-6"	2236.01	Soil	04-Dec-96 10:15	12/04/96
2537 F2 12-16"	2236.02	Soil	04-Dec-96 10:25	12/04/96
2537 G1 0-6"	2236.03	Soil	04-Dec-96 10:35	12/04/96
2537 G2 12-16"	2236.04	Soil	04-Dec-96 10:45	12/04/96
2537 H1 0-6"	2236.05	Soil	04-Dec-96 10:55	12/04/96
2537 H2 12-16"	2236.06	Soil	04-Dec-96 11:05	12/04/96

SAMPLE LOCATION AND IDENTIFICATION

2537 I1 0-6"	2236.07	Soil	04-Dec-96 11:15	12/04/96
2537 I2 12-16"	2236.08	Soil	04-Dec-96 11:25	12/04/96
2537 J1 0-6"	2236.09	Soil	04-Dec-96 11:35	12/04/96
2537 J2 12-16"	2236.10	Soil	04-Dec-96 11:45	12/04/96
2537 K1 0-6"	2236.11	Soil	04-Dec-96 11:55	12/04/96
2537 K2 12-16"	2236.12	Soil	04-Dec-96 13:20	12/04/96
2537 L1 0-6"	2236.13	Soil	04-Dec-96 13:30	12/04/96
2537 L2 12-16"	2236.14	Soil	04-Dec-96 13:40	12/04/96
2537 M1 0-6"	2236.15	Soil	04-Dec-96 13:50	12/04/96
2537 M2 12-16"	2236.16	Soil	04-Dec-96 14:00	12/04/96
2537 N1 0-6"	2236.17	Soil	04-Dec-96 14:10	12/04/96
2537 N2 12-16"	2236.18	Soil	04-Dec-96 14:20	12/04/96
2537 O1 0-6"	2236.19	Soil	04-Dec-96 14:30	12/04/96
2537 O2 12-16"	2236.20	Soil	04-Dec-96 14:40	12/04/96
2537 P1 0-6"	2236.21	Soil	04-Dec-96 14:50	12/04/96
2537 P2 12-16"	2236.22	Soil	04-Dec-96 15:00	12/04/96
2537 Q1 0-6"	2236.23	Soil	04-Dec-96 15:10	12/04/96
2537 Q2 12-16"	2236.24	Soil	04-Dec-96 15:20	12/04/96
2537 R1 0-6"	2236.25	Soil	04-Dec-96 15:30	12/04/96
2537 R2 12-16"	2236.26	Soil	04-Dec-96 15:40	12/04/96
2537 S1 0-6"	2236.27	Soil	04-Dec-96 15:50	12/04/96
2537 S2 12-16"	2236.28	Soil	04-Dec-96 16:00	12/04/96
Field Dup.	2236.29	Soil	04-Dec-96	12/04/96
2537 T1 0-6"	2252.01	Soil	19-Dec-96 13:15	12/19/96
2537 T2 12-16"	2252.02	Soil	19-Dec-96 13:25	12/19/96
2537 U1 0-6"	2252.03	Soil	19-Dec-96 13:35	12/19/96
2537 U2 12-16"	2252.04	Soil	19-Dec-96 13:45	12/19/96
2537 V1 0-6"	2252.05	Soil	19-Dec-96 13:55	12/19/96
2537 V2 12-16"	2252.06	Soil	19-Dec-96 14:05	12/19/96
2537 W1 0-6"	2252.07	Soil	19-Dec-96 14:15	12/19/96
2537 W2 12-16"	2252.08	Soil	19-Dec-96 14:25	12/19/96
2537 X1 0-6"	2252.09	Soil	19-Dec-96 14:35	12/19/96
2537 X2 12-16"	2252.10	Soil	19-Dec-96 14:45	12/19/96
2537 Y1 0-6"	2252.11	Soil	19-Dec-96 14:55	12/19/96
2537 Y2 12-16"	2252.12	Soil	19-Dec-96 15:05	12/19/96
Field Dup.	2252.13	Soil	19-Dec-96	12/19/96
2537 Z1 0-6"	2253.01	Soil	20-Dec-96 10:05	12/20/96
2537 Z2 12-16"	2253.02	Soil	20-Dec-96 10:20	12/20/96
2537 AA1 0-6"	2253.03	Soil	20-Dec-96 10:35	12/20/96
2537 AA2 12-16"	2253.04	Soil	20-Dec-96 10:50	12/20/96
2537 BB1 0-6"	2253.05	Soil	20-Dec-96 11:10	12/20/96
2537 BB2 12-16"	2253.06	Soil	20-Dec-96 11:25	12/20/96
2537 CC1 0-6"	2253.07	Soil	20-Dec-96 13:05	12/20/96
2537 CC2 12-16"	2253.08	Soil	20-Dec-96 13:15	12/20/96
2537 DD1 0-6"	2253.09	Soil	20-Dec-96 13:25	12/20/96
2537 DD2 12-16"	2253.10	Soil	20-Dec-96 13:35	12/20/96
2537 EE1 0-6"	2253.11	Soil	20-Dec-96 13:45	12/20/96
2537 EE2 12-16"	2253.12	Soil	20-Dec-96 13:55	12/20/96
2537 FF1 0-6"	2253.13	Soil	20-Dec-96 14:05	12/20/96
2537 FF2 12-16"	2253.14	Soil	20-Dec-96 14:15	12/20/96
2537 GG1 0-6"	2253.15	Soil	20-Dec-96 14:25	12/20/96
2537 GG2 12-16"	2253.16	Soil	20-Dec-96 14:35	12/20/96
2537 HH1 0-6"	2253.17	Soil	20-Dec-96 14:45	12/20/96

SAMPLE LOCATION AND IDENTIFICATION

2537 HH2 12-16"	2253.18	Soil	20-Dec-96 14:55	12/20/96
Field Dup.	2253.19	Soil	20-Dec-96	12/20/96
2537 III 0-6"	2254.01	Soil	23-Dec-96 10:30	12/23/96
2537 II2 12-16"	2254.02	Soil	23-Dec-96 10:40	12/23/96
2537 JJ1 0-6"	2254.03	Soil	23-Dec-96 10:50	12/23/96
2537 JJ2 12-16"	2254.04	Soil	23-Dec-96 11:00	12/23/96
2537 KK1 0-6"	2254.05	Soil	23-Dec-96 11:10	12/23/96
2537 KK2 12-16"	2254.06	Soil	23-Dec-96 11:20	12/23/96
2537 LL1 0-6"	2254.07	Soil	23-Dec-96 11:30	12/23/96
2537 LL2 12-16"	2254.08	Soil	23-Dec-96 11:40	12/23/96
2537 MM1 0-6"	2254.09	Soil	23-Dec-96 11:50	12/23/96
2537 MM2 12-16"	2254.10	Soil	23-Dec-96 13:15	12/23/96
2537 NN1 0-6"	2254.11	Soil	23-Dec-96 13:25	12/23/96
2537 NN2 12-16"	2254.12	Soil	23-Dec-96 13:35	12/23/96
2537 OO1 0-6"	2254.13	Soil	23-Dec-96 13:45	12/23/96
2537 OO2 12-16"	2254.14	Soil	23-Dec-96 14:00	12/23/96
2537 PP1 0-6"	2254.15	Soil	23-Dec-96 14:10	12/23/96
2537 PP2 12-16"	2254.16	Soil	23-Dec-96 14:20	12/23/96
2537 QQ1 0-6"	2254.17	Soil	23-Dec-96 14:30	12/23/96
2537 QQ2 12-16"	2254.18	Soil	23-Dec-96 14:40	12/23/96
Field Dup.	2254.19	Soil	23-Dec-96	12/23/96
2537 RR1 0-6"	2568.01	Soil	19-May-97 13:55	05/19/97
2537 RR2 12-16"	2568.02	Soil	19-May-97 14:00	05/19/97
2537 SS1 0-6"	2568.03	Soil	19-May-97 14:10	05/19/97
2537 SS2 12-16"	2568.04	Soil	19-May-97 14:15	05/19/97
2537 TT1 0-6"	2568.05	Soil	19-May-97 14:20	05/19/97
2537 TT2 12-16"	2568.06	Soil	19-May-97 14:25	05/19/97
2537 UU1 0-6"	2568.07	Soil	19-May-97 14:35	05/19/97
2537 UU2 12-16"	2568.08	Soil	19-May-97 14:40	05/19/97
2537 VV1 0-6"	2568.09	Soil	19-May-97 14:50	05/19/97
2537 VV2 12-16"	2568.10	Soil	19-May-97 14:55	05/19/97
2537 WW1 0-6"	2568.11	Soil	19-May-97 15:05	05/19/97
2537 WW2 12-16"	2568.12	Soil	19-May-97 15:10	05/19/97
2537 XX1 0-6"	2568.13	Soil	19-May-97 15:20	05/19/97
2537 XX2 12-16"	2568.14	Soil	19-May-97 15:25	05/19/97
2537 YY1 0-6"	2568.15	Soil	19-May-97 15:35	05/19/97
2537 YY2 12-16"	2568.16	Soil	19-May-97 15:40	05/19/97
2537 ZZ1 0-6"	2635.01	Soil	04-Jun-97 14:40	06/04/97
2537 ZZ2 12-16"	2635.02	Soil	04-Jun-97 14:45	06/04/97
2537 AAA 0-6"	2635.03	Soil	04-Jun-97 14:50	06/04/97
2537 BBB 0-6"	2635.04	Soil	04-Jun-97 14:55	06/04/97
2537 CCC 0-6"	2635.05	Soil	04-Jun-97 15:00	06/04/97
2537 DDD1 0-6"	2635.06	Soil	04-Jun-97 15:05	06/04/97
2537 DDD2 12-16"	2635.07	Soil	04-Jun-97 15:10	06/04/97
2537 EEE 0-6"	2635.08	Soil	04-Jun-97 15:15	06/04/97
2537 FFF 0-6"	2635.09	Soil	04-Jun-97 15:20	06/04/97
2537 GGG 0-6"	2635.10	Soil	04-Jun-97 15:25	06/04/97
Soil Pile A	2726.01	Soil	23-Jun-97 10:35	06/23/97
Soil Pile B	2726.02	Soil	23-Jun-97 10:40	06/23/97
Soil Pile C	2726.03	Soil	23-Jun-97 10:45	06/23/97
Soil Pile D	2726.04	Soil	23-Jun-97 10:50	06/23/97
Soil Pile E	2726.05	Soil	23-Jun-97 10:55	06/23/97
Soil Pile F	2726.06	Soil	23-Jun-97 11:00	06/23/97

CHAIN OF CUSTODY

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: 138 147

Project #:		Sampler: Ray Logwist		Date / Time	Analysis Parameters	Start:
Customer: U.S. Army DPW, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: Bldg 2537		11/14/96 0800		Finish:
Phone:		Customer Sample Location/ID Number		Sample Matrix	# of Bottles	Preservation Method
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	
2213	11/14/96 950	Bldg 2537 A1 0-6	Soil	1	AS Yes with 2537 (1995)	
12	1000	A2 12-16				
13	1010	A3 21-28				
14	1020	A4 36-40				
15	1030	A5 48-52				
16	1110	B1 0-6				
17	1120	B2 12-16				
18	1130	B3 21-28				
19	1140	B4 36-40				
20	1150	B5 48-52				
11	1310	C1 0-6				
Relinquished By (signature)		Date / Time	Received By (signature)	Shipped By:		
Relinquished By (signature)		Date / Time	Received for Lab by (signature)	Date / Time		

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: 138147

Project #:		Sampler:		Date / Time		Analysis Parameters		Start:	
Customer: U.S. Army DPW, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: Bldg 173		11/14/93 2:30				Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Remarks	
Lab Sample ID Number	Date/Time							Preservation Method	
2213	11/14/93	Bldg 173 (12-16)		S1		1		nb	
	3:30	S3 (14-28)							
	3:45	S4 (56-40)							
	3:50	S5 (48 SA)							
		S6 (0-6)							
		S7 (12-16)							
		S8 (44-28)							
		S9 (56-40)							
		S10 (48 SA)							
		S11 (0-6)							
		S12 (12-16)							
		S13 (44-28)							
		S14 (56-40)							
		S15 (48 SA)							
		S16 (0-6)							
		S17 (12-16)							
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:	
		11/14/93 16:15							
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

SAI-ENV COC form 01 Page ----- of ----- Pages Rev. A Date: 02 Apr 93

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PO # 960777

Project #:		Sampler: <u>Ray Fogwist</u>		Date / Time: <u>12/4/96 0800</u>		Analysis Parameters:		Start:	
Customer: U.S. Army DPW, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: <u>Bldg 2537</u>						Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Remarks	
Lab Sample ID Number	Date/Time								
2236-01	12/4/96 1015	Bldg 2537 F1 0-6	Soil	1		X			
12	1025	F2 12-16							
13	1035	G1 0-6							
14	1045	G2 12-16							
15	1055	H1 0-6							
16	1105	H2 12-16							
17	1115	I1 0-6							
18	1125	I2 12-16							
19	1135	J1 0-6							
110	1145	J2 12-16							
111	1155	K1 0-6							
Relinquished By (signature): <u>Ray C. Fogwist</u>		Date / Time: <u>12/4/96 1615</u>		Received By (signature): <u>[Signature]</u>		Date / Time: <u>12/5/96</u>		Shipped By:	
Relinquished By (signature):		Date / Time:		Received for Lab by (signature):		Date / Time:			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

SRI-ENV COC form 01 Page 1 of 3 Pages Rev. A Date: 02 Apr 93

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: 960777

Project #:		Sampler:		Date / Time		Analysis Parameters		Start:	
Customer: U.S. Army DPW, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: Bldg 5531		12/4/96 0800				Finish:	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	Preservation Method			
1326	12/4/96	Bldg 5537	Soil	1					
1330	12-16	L1							
1340	12-16	L2							
1350	12-16	M1							
1400	12-16	M2							
1410	12-16	M1							
1420	12-16	M2							
1430	12-16	V1							
1440	12-16	V2							
1450	12-16	P1							
1500	12-16	P2							
Relinquished By (signature) <i>MEC [Signature]</i>		Date / Time 12/4/96 1615		Received By (signature) <i>[Signature]</i>		Date / Time 12/4/96 0800		Shipped By:	
Relinquished By (signature)		Date / Time		Received for Lab by (signature):		Date / Time			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

Environmental Laboratory

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: 96 0777

Project #:		Sampler: <i>Ry Rogus</i>		Date / Time: 12/4/96 0800		Analysis Parameters:		Start:	
Customer: U.S. Army DPW, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: <i>Bldg 2537</i>		Date / Time: 12/4/96 0800		Analysis Parameters:		Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks				
2236-23	4/4/96	Bldg 2537 Q1 06	Soil	1					
124	1520	Q2	12-16	1					
125	1530	R1 06		1					
126	1540	R2 12-16		1					
127	1550	S1 06		1					
128	1600	S2 12-16		1					
129		Field Dup		1					
Relinquished By (signature): <i>Ry Rogus</i>		Date / Time: 12/4/96 1615		Received By (signature): <i>[Signature]</i>		Shipped By:			
Relinquished By (signature):		Date / Time:		Received for Lab by (signature):		Date / Time:			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #:

Project #:		Sampler: <i>Ray Poykist</i>		Date / Time: 12/19/96 1000		Analysis Parameters		Start:	
Customer: U.S. Army DPN, SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703		Site Name: <i>Bldg 2537</i>		Date / Time: 12/19/96 1000		Analysis Parameters		Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Remarks	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	Preservation Method			
2257	12/19/96 1315	Bldg 2537 T1(0-6)	Soil	1	X				
12	1325	T2(2-0)							
13	1335	U1(0-6)							
14	1345	U2(7-16)							
15	1355	V1(0-6)							
16	1405	V2(276)							
17	1415	W1(0-6)							
18	1425	W2(276)							
19	1435	X1(0-6)							
10	1445	X2(2-16)							
11	1455	Y(0-6)							
Relinquished By (signature): <i>Ray Poykist</i>		Date / Time: 12/19/96 1355		Received By (signature): <i>S. Hubbard</i>		Date / Time:		Shipped By:	
Relinquished By (signature):		Date / Time:		Received for Lab by (signature):		Date / Time:			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody form.

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

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NJDEP Certification #13461

Chain of Custody Record

Page 1 of 2

Customer:		Project No:		Analysis Parameters		Remarks / Preservation Method
(DERA) (OMA) (Other):						
Sampler's Signature: <i>REC</i>		Sample Type		Analysis Parameters		
Lab Sample I.D.	Sample Location	Date	Time			
7-53	Bldg 2537	12-24-16	1005	Soil		Rec'd (Early) 0-6 12-16
14	Z 2		1020			
13	AA4		1035			0-6
14	AA2		1050			12-16
15	BB1		1110			0-6
16	BB2		1125			12-16
17	CC1		1305			0-6
18	CC2		1315			12-16
19	DD1		1325			0-6
110	DD2		1335			12-16
11	EE1		1345			0-6
12	EE2		1355			12-16
13	FF1		1405			0-6
14	FF2		1415			12-16
Relinquished by (signature): <i>REC</i>		Received by (signature): <i>Joseph J. Hubbard</i>		Relinquished by (signature):		Date/Time:
Date/Time: 12/16/15 1515		Date/Time:		Date/Time:		Received by (signature):
Relinquished by (signature):		Received by (signature):		Relinquished by (signature):		Date/Time:
Date/Time:		Date/Time:		Date/Time:		Received by (signature):
Relinquished by (signature):		Received for laboratory by (signature):		Relinquished by (signature):		Date/Time:
Date/Time:		Date/Time:		Date/Time:		Remarks:

Monmouth Environmental Testing Laboratory

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NUDEP Certification #13461

Chain of Custody Record

Page 2 of 2

Customer:		Project No.			Analysis Parameters		Remarks / Preservation Method
(DERA) (OMA) (Other:)		Sample Location	Date	Time	Sample Type		
Sampler's Signature:							
2753	115	Bldg 2537 GG1	12-20-16	1425	Soil		Perth Inches 06
	116	GG2		1435			12-16
	117	HH1		1445			0-6
	118	HH2		1455			12-16
	119	Field Dup					
Relinquished by (signature):		Date/Time:	Received by (signature):		Relinquished by (signature):		Date/Time:
[Signature]		12/20/16 15:45	[Signature]				
Relinquished by (signature):		Date/Time:	Received by (signature):		Relinquished by (signature):		Date/Time:
Relinquished by (signature):		Date/Time:	Received for laboratory by (signature):		Relinquished by (signature):		Date/Time:
			[Signature]				



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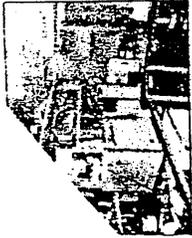
NJDEP Certification #13461

Chain of Custody Record

Page 1 of 2

Customer:		Project No:		Analysis Parameters		Remarks / Preservation Method
(DERA) (OMA) (Other):		Date	Time	Sample Type		
Sampler's Signature: <i>[Signature]</i>						
Lab Sample I.D.	Sample Location	Date	Time	Sample Type		
2254 .1	Bldg 2537 II	12/23/96	1030	Sa. /		NA Depth <i>[Handwritten]</i> (12-16)
.2			1040			0-6
13			1050			12-16
.4			1100			0-6
15			1110			12-16
16			1120			0-6
17			1130			12-16
18			1140			0-6
19			1150			12-16
110			1315			0-6
111			1325			12-16
112			1335			0-6
113			1345			12-16
114			1400			0-6
Relinquished by (signature): <i>[Signature]</i>		Received by (signature): <i>[Signature]</i>		Relinquished by (signature):		Date/Time: Received by (signature):
Date/Time: 12/23/96 1510		Date/Time: 12/23/96 1510		Date/Time:		Date/Time: Received by (signature):
Relinquished by (signature):		Received by (signature):		Relinquished by (signature):		Date/Time: Received by (signature):
Date/Time:		Date/Time:		Date/Time:		Date/Time: Received by (signature):
Relinquished by (signature):		Received for laboratory by (signature):		Date/Time: Remarks:		Date/Time: Received by (signature):

Date Rec.



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NUDEP Certification #13461

Chain of Custody Record

Page 2 of 2

Customer:		Project No:		Analysis Parameters		Remarks / Preservation Method
(DERA) (OMA) (Other):		Date	Time			
Sampler's Signature: <i>Reginald S. Appleby 2.</i>		96-0777				
Lab Sample I.D.	Sample Location	Date	Time	Sample Type		
1154	Bldg 2532 PP	12/23/16	1410	Soil	Pb	NA
116	PP		1416		X	06 12-16
117	QQ		1430			06
118	QQ		1440			12-16
119	2012 duplicate					
Relinquished by (signature): <i>Reginald S. Appleby</i>		Received by (signature): <i>[Signature]</i>		Relinquished by (signature):		Date/Time:
Relinquished by (signature):		Received by (signature):		Relinquished by (signature):		Date/Time:
Relinquished by (signature):		Received for laboratory by (signature):		Date/Time:		Remarks:



Fort Monmouth Environmental Testing Laboratory

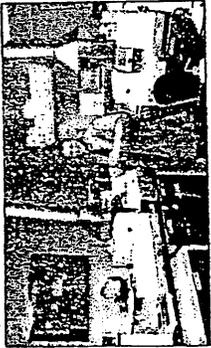
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NJDEP Certification #13461

Chain of Custody Record

Customer: <u>I. Fallon</u>		Project No:		Analysis Parameters		Comments:
Phone #: _____		Location: <u>614 2537</u>				
XADRA () OMA () Other: <u>See Signis</u>		T-3				
Lab Sample ID.	Sample Location	Date	Time	Sample Type	# bottles	Remarks/Preservation Method
2568-01	614 2537	5/19/97	13:55	Soil	1	Lead: 0.16 12-16
-02	AP2		1400			0.6
-03	SS1		1410			0.16
-04	SS2		1415			0.6
-05	TT1		1420			0.6
-06	TT2		1425			0.16
-07	444		1435			0.6
-08	442		1440			0.16
-09	VV1		1450			0.6
-10	VV2		1455			0.16
-11	VV3		1505			0.6
-12	VV4		1516			0.16
-13	XX1		1530			0.6
-14	XX2		1535			0.16
Relinquished by (signature): <u>[Signature]</u>		Date/Time: <u>5/19/97 1415</u>		Relinquished by (signature):		Date/Time:
Relinquished by (signature):		Date/Time:		Received by (signature):		Date/Time:
Report Type: <input type="checkbox"/> Full, <input type="checkbox"/> Reduced, <input checked="" type="checkbox"/> Standard, <input type="checkbox"/> Screen / non-certified		Turnaround time: <input type="checkbox"/> Standard 4 wks, <input checked="" type="checkbox"/> Rush <u>7</u> Days, <input type="checkbox"/> ASAP Verbal _____ Hrs.		Remarks:		



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 NJDEP Certification #13461

Chain of Custody Record

Customer: Joe Fallon		Project No:		Analysis Parameters		Comments:	
Phone #: X2 6223		Location: Bldg 1537					
(V)DERA ()OMA ()Other:		Sample Name / Company: Ray Robbins / TVS		Sample #		Remarks / Preservation Method	
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles		
2635 01	Bldg 1537 22' 0-6	6/4/97	1440	AQ	1	X	
02	22' 12-16		1445				
03	AAA 0-6		1450				
04	BBB 0-6		1455				
05	CCC 0-6		1500				
06	DDD 0-6		1505				
07	DDD 12-16		1510				
08	EEE 0-6		1515				
09	FFF 0-6		1520				
10	GGG 0-6		1525				
Relinquished by (signature): Joe Fallon		Date/Time: 6/4/97 1550	Received by (signature): [Signature]		Date/Time: 6-4-97	Received by (signature):	
Relinquished by (signature):		Date/Time:	Received by (signature):		Date/Time:	Received by (signature):	
Report Type: <input type="radio"/> Full, <input type="radio"/> Reduced, <input checked="" type="radio"/> Standard, <input type="radio"/> Screen / non-certified		Turnaround time: <input checked="" type="radio"/> Standard 4 wks, <input type="radio"/> Rush Days, <input type="radio"/> ASAP Verbal Hrs.		Remarks:			

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Fort Monmouth Environmental Testing Laboratory

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Chain of Custody Record

NJDEP Certification #13461

Customer: <u>2-A1111</u>		Project No:		Analysis Parameters		Comments:	
Phone #: <u>761-1111</u>		Location: <u>Soil Pile 5537</u>					
SAMPLERS () OMA () Other:		Sample Name / Company: <u>Ray P. G. ... / TMS</u>					
Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles		
2726-01	Soil Pile A	6/12/11	1335	Soil	1		
2726-02	B		1010				
2726-03	C		1015				
2726-04	D		1030				
2726-05	E		1055				
2726-06	F		1100				
2726-07	G		1105				
2726-08	Field Dug						

Relinquished by (signature):	Date/Time: <u>6/13/11 1140</u>	Received by (signature): <u>Ray P. G. ...</u>	Date/Time:
Relinquished by (signature):	Date/Time:	Received by (signature):	Date/Time:

Report Type: Full, Reduced, Standard, Screen / non-certified
Turnaround time: Standard 4 wks, Rush Days, ASAP Verbal Hrs.

Fort Monmouth Environmental Testing Laboratory

Chain of Custody Record

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
 Tel (732) 532-4359 Fax (732) 532-6263 EMail: appleby@mail.monmouth.army.mil
 NJDEP Certification #13461

Customer: J. P. Hill		Project No:		Analysis Parameters		Comments:	
Phone #: 20223		Location: Bldg 2537					
ADERA () OMA () Other:		Sample #		Date/Time:		Received by (signature):	
Samplers Name / Company: Co. 2 Mulmarch, T/Vs		Type					
Sample Location		Time		Date/Time:		Relinquished by (signature):	
Lab Sample I.D.		Date					
15 2537 PR 08 0-6"		10/28/99 1047		Date/Time:		Received by (signature):	
16 " " 12-18"		1050					
17 2537 PR 09 0-6"		1053		Date/Time:		Relinquished by (signature):	
18 " " 12-18"		1056					
19 2537 PR 10 0-6"		1059		Date/Time:		Received by (signature):	
20 " " 12-18"		1101					
21 2537 PR 11 0-6"		1104		Date/Time:		Relinquished by (signature):	
22 " " 12-18"		1107					
23 2537 PR 12 0-6"		1110		Date/Time:		Received by (signature):	
24 " " 12-18"		1113					
25 2537 PR 13 0-6"		1348		Date/Time:		Relinquished by (signature):	
26 " " 12-18"		1352					
27 2537 PR 14 0-6"		1355		Date/Time:		Received by (signature):	
28 " " 12-18"		1357					
Relinquished by (signature): <i>Co. 2 Mulmarch</i>		Date/Time: 10/28/99 1440		Relinquished by (signature): <i>J. P. Hill</i>		Date/Time:	
Relinquished by (signature):		Date/Time:		Relinquished by (signature):		Date/Time:	
Report Type: <input type="radio"/> Full, <input type="radio"/> Reduced, <input type="radio"/> Standard, <input type="radio"/> Screen / non-certified		Turnaround time: <input type="radio"/> Standard 3 wks, <input checked="" type="radio"/> Rush <input type="radio"/> Days, <input type="radio"/> ASAP Verbal _____ Hrs.		Remarks:		Remarks:	

Fort Monmouth Environmental Testing Laboratory

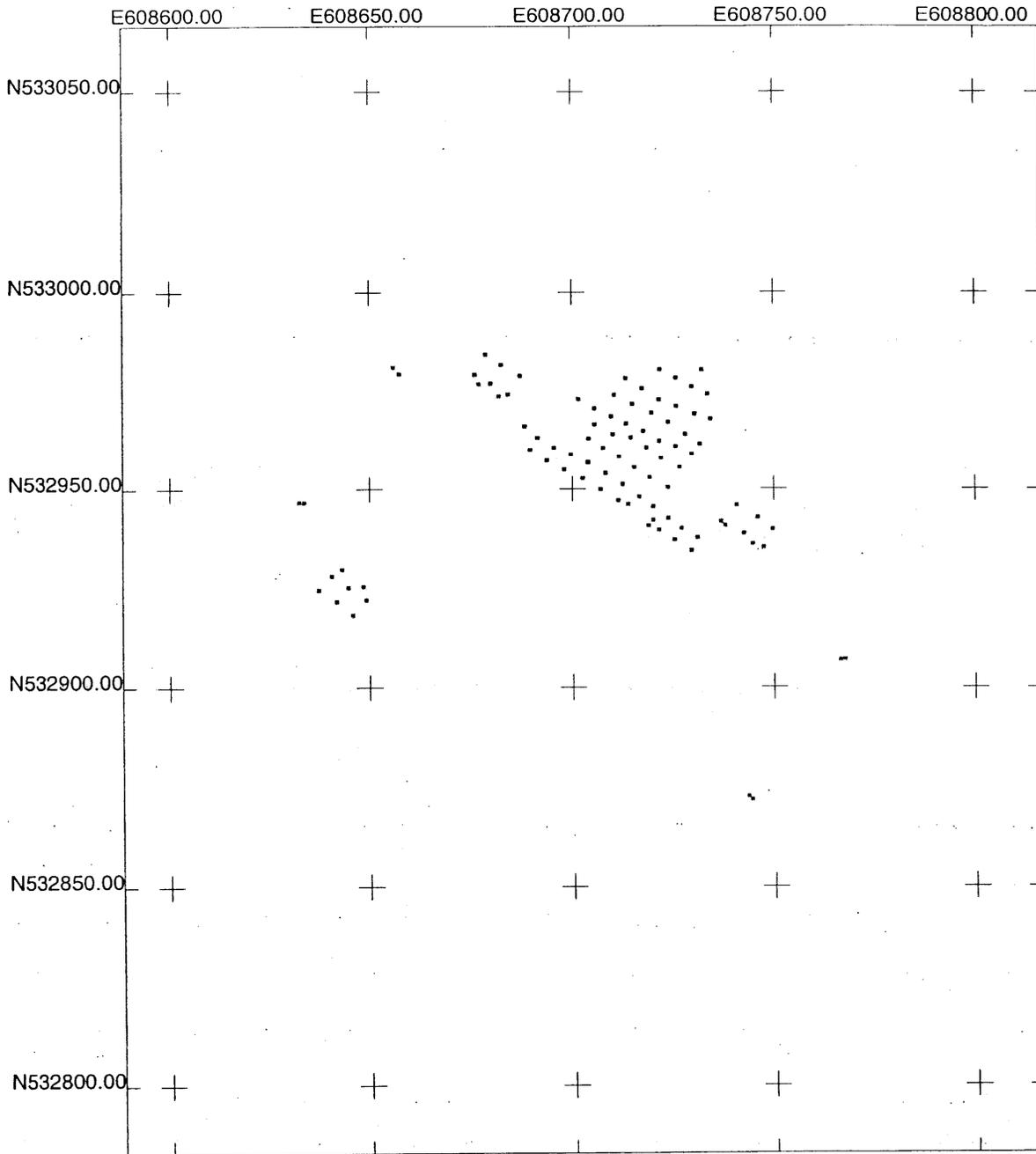
Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
 Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
 NJDEP Certification #13461

Chain of Custody Record

Customer: <u>Taylor</u>		Project No:		Analysis Parameters		Comments:
Phone #: <u>201-223</u>	Location: <u>Rt 2537</u>	Sample #	Type			
XPERA (I)OMA (Other):		Sample Name / Company: <u>Cory McCormack, TUS</u>				Remarks / Preservation Method
Lab Sample I.D.	Sample Location	Date	Time			
<u>29</u>	<u>2537 PR15 0-6"</u>	<u>10/28/99</u>	<u>1400</u>	<input checked="" type="checkbox"/>	<u>Soil</u>	
<u>30</u>	<u>" " 12-18"</u>		<u>1402</u>	<input checked="" type="checkbox"/>		
<u>31</u>	<u>2537 PR16 0-6"</u>		<u>1405</u>	<input checked="" type="checkbox"/>		
<u>32</u>	<u>" " 12-18"</u>		<u>1407</u>	<input checked="" type="checkbox"/>		<u>Top 0-3"</u>
<u>33</u>	<u>2537 PR17 0-6"</u>		<u>1410</u>	<input checked="" type="checkbox"/>		<u>was disturbed</u>
<u>34</u>	<u>" " 12-18"</u>		<u>1412</u>	<input checked="" type="checkbox"/>		<u>by previous</u>
<u>35</u>	<u>* 2537 PR18 0-6"</u>		<u>1415</u>	<input checked="" type="checkbox"/>		<u>construction.</u>
<u>36</u>	<u>" " 12-18"</u>		<u>1418</u>	<input checked="" type="checkbox"/>		<u>pts 16, 17, 18.</u>
<u>37</u>	<u>2537 DUP 0-6"</u>		<u>-</u>	<input checked="" type="checkbox"/>		
<u>38</u>	<u>" " 12-18"</u>		<u>-</u>	<input checked="" type="checkbox"/>		
Relinquished by (signature): <u>Cory McCormack</u>		Date/Time: <u>10/28/99 1440</u>		Relinquished by (signature):		Received by (signature):
Relinquished by (signature):		Date/Time:		Relinquished by (signature):		Received by (signature):

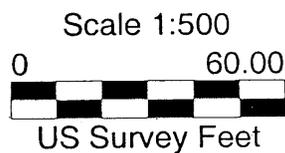
Report Type: Full, Reduced, Standard, Screen / non-certified
 Turnaround time: Standard 3 wks, Rush 2 Days, ASAP Verbal Hrs.
 Remarks:
 Date 3 of 3
 Conc vts 10/4/99

GPS MAPS



Bldg. 2537 Pistol Range GPS Location Map

US State Plane 1983
 New Jersey (NY East) 2900
 NAD 1983 (Conus)



r061417a.cor
 2/3/2000
 Pathfinder Office
 **Trimble**

BLDG. 2537 PISTOL RANGE BLOWERS GPS POSITION & COORDINATES

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
1	532935.236	608747.358
2	532938.751	608742.437
3	532941.763	608736.84
4	532939.83	608749.576
5	532942.765	608745.852
6	532945.905	608740.677
7	532974.444	608683.908
8	532977.154	608679.598
9	532979.413	608675.739
10	532979.127	608686.852
11	532981.889	608682.24
12	532984.542	608678.415
13	532928.098	608640.446
14	532925.153	608644.544
15	532922.146	608649.044
16	532924.525	608637.135
17	532921.854	608641.62
18	532918.423	608645.71

REFERENCE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
CRNR PAD ORANGE BLWR	532940.752	608737.913
CRNR PAD ORANGE BLWR	532936.133	608744.596
CRNR NRTH SD DR STP	532942.204	608720.084
CRNR NRTH SD DR STP	532946.25	608713.734
CRNR GREY BLWR 1	532973.944	608681.656
CRNR GREY BLWR 1	532977.084	608676.885
BLDG CRNR	532906.958	608766.383
BLDG CRNR	532872.701	608743.236
BLDG CRNR	532981.284	608655.971
BLDG CRNR	532946.808	608632.281
CRNR GREY BLWR 2	532929.762	608643.042
CRNR GREY BLWR 2	532925.461	608648.214

BLDG. 2537 PISTOL RANGE BLOWERS GPS POSITIONS & COORDINATES

US STATE PLANE 1927 NEW JERSEY 2900 NADCON (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
1	533187.302	2163010.672
2	533190.807	2163005.745
3	533193.81	2163000.141
4	533191.9	2163012.881
5	533194.829	2163009.152
6	533197.96	2163003.971
7	533226.394	2162947.143
8	533229.097	2162942.828
9	533231.349	2162938.965
10	533231.084	2162950.078
11	533233.837	2162945.462
12	533236.483	2162941.631
15	533174.026	2162912.375
14	533177.025	2162907.869
13	533179.963	2162903.765
16	533176.383	2162900.46
17	533173.721	2162904.95
18	533170.297	2162909.047

REFERENCE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
CRNR PAD ORANGE BLWR	533192.8	2163001.216
CRNR PAD ORANGE BLWR	533188.193	2163007.908
CRNR NRTH SD DR STP	533194.219	2162983.383
CRNR NRTH SD DR STP	533198.254	2162977.025
CRNR GREY BLWR 1	533225.89	2162944.892
CRNR GREY BLWR 1	533229.021	2162940.115
BLDG CRNR	533159.057	2163029.752
BLDG CRNR	533124.753	2163006.667
BLDG CRNR	533233.183	2162919.191
BLDG CRNR	533198.659	2162895.564
CRNR GREY BLWR 2	533181.632	2162906.357
CRNR GREY BLWR 2	533177.34	2162911.538

BLDG. 2537 PISTOL RANGE GPS LOCATION MAAF

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
A	532969.697	608719.71
AA	532975.882	608717.356
AAA	532942.563	608723.861
B	532973.015	608721.665
BB	532978.452	608713.336
BBB	532940.051	608727.171
C	532967.4	608723.895
CC	532980.674	608721.841
CCC	532937.63	608731.106
D	532965.055	608717.61
DD	532971.314	608725.987
DDD	532960.369	608689.299
E	532971.924	608714.94
EE	532976.238	608729.744
EEE	532961.005	608695.275
F	532978.487	608725.858
FF	532969.374	608730.488
FFF	532963.493	608691.188
G	532974.232	608710.417
GG	532968.14	608734.357
GGG	532966.395	608687.993
H	532964.327	608728.084
HH	532961.853	608731.743
I	532961.19	608725.738
II	532962.612	608721.624
J	532957.918	608722.055
JJ	532960.918	608718.44
K	532953.08	608719.208
KK	532955.601	608715.301
L	532948.065	608716.606
LL	532951.274	608712.393
M	532963.508	608714.485
MM	532959.101	608729.732
N	532958.274	608711.514
NN	532955.661	608726.72

POSITION / DESC.Y COORD. (NORTHING)X COORD. (EASTING)

O	532954.103	608708.116
OO	532950.406	608723.747
P	532968.832	608709.664
PP	532945.593	608720.056
Q	532966.85	608705.392
QQ	532940.712	608718.896
R	532963.281	608703.963
RR	532939.704	608721.493
S	532959.043	608699.502
SS	532937.187	608725.411
T	532952.841	608702.384
TT	532955.061	608697.864
U	532950.027	608706.85
UU	532957.391	608693.528
V	532947.168	608711.305
VV	532970.852	608705.378
W	532956.927	608703.805
WW	532980.556	608732.288
X	532960.867	608707.553
XX	532974.428	608733.647
Y	532964.319	608709.966
YY	532973.227	608701.47
Z	532966.942	608713.287
ZZ	532934.359	608729.568

**TOTAL
LEAD**

CASE NARRATIVE

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2213.1-25
 Sample Received: 11/14/96
 Analysis Start: 11/15/96
 Analysis Completed: 11/18/96

Site: Ft. Monmouth
 Building 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: E.P.A SW-846, Method 3051

mg/kg = ppm

TEST PARAMETER: Lead

Laboratory ID#	Sample Location	Result (mg/Kg)	MDL (mg/Kg)
✓ 2213.1	2537 A-1 0-6"	451000	0.922
✓ 2213.2	2537 A-2 12-16"	20600	1.115
✓ 2213.3	2537 A-3 24-28"	9400	1.155
✓ 2213.4	2537 A-4 36-40"	3970	1.339
✓ 2213.5	2537 A-5 48-52"	6760	0.722
✓ 2213.6	2537 B-1 0-6"	2710	1.269
✓ 2213.7	2537 B-2 12-16"	125.9	1.143
✓ 2213.8	2537 B-3 24-28"	6.86	0.982
✓ 2213.9	2537 B-4 36-40"	3.75	1.253
✓ 2213.10	2537 B-5 48-52"	ND	1.177
✓ 2213.11	2537 C-1 0-6"	2350	1.192
✓ 2213.12	2537 C-2 12-16"	15.96	1.138
✓ 2213.13	2537 C-3 24-28"	9.01	1.056
✓ 2213.14	2537 C-4 36-40"	19.51	1.257
✓ 2213.15	2537 C-5 48-52"	ND	1.164
✓ 2213.16	2537 D-1 0-6"	151000	1.025
✓ 2213.17	2537 D-2 12-16"	43.46	1.061
✓ 2213.18	2537 D-3 24-28"	ND	1.123
✓ 2213.19	2537 D-4 36-40"	ND	1.193
✓ 2213.20	2537 D-5 48-52"	ND	1.119
✓ 2213.21	2537 E-1 0-6"	20030	1.250
✓ 2213.22	2537 E-2 12-16"	181.3	1.015
✓ 2213.23	2537 E-3 24-28"	16.1	1.151
✓ 2213.24	2537 E-4 36-40"	ND	1.147
✓ 2213.25	2537 E-5 48-52"	ND	1.167

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2236.1-29
 Sample Received: 12/04/96
 Analysis Start: 12/05/96
 Analysis Completed: 12/06/96

Site: Ft. Monmouth
 Building 2537

Matrix: Soil
 Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: E.P.A SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory ID#	Sample Location	Result (mg/Kg)	MDL (mg/Kg)
✓ 2236.1	2537 F1 0-6"	44.10	1.24
✓ 2236.2	2537 F2 12-16"	2.18	1.09
✓ 2236.3	2537 G1 0-6"	176.9	1.12
✓ 2236.4	2537 G2 12-16"	8.91	0.99
✓ 2236.5	2537 H1 0-6"	7992	1.20
✓ 2236.6	2537 H2 12-16"	5.04	1.12
✓ 2236.7	2537 I1 0-6"	520.4	1.18
✓ 2236.8	2537 I2 12-16"	5.13	1.14
✓ 2236.9	2537 J1 0-6"	244.9	1.15
✓ 2236.10	2537 J2 12-16"	ND	1.05
✓ 2236.11	2537 K1 0-6"	148.2	1.21
✓ 2236.12	2537 K2 12-16"	23.01	1.18
✓ 2236.13	2537 L1 0-6"	533.5	1.14
✓ 2236.14	2537 L2 12-16"	7.67	1.18
✓ 2236.15	2537 M1 0-6"	176.8	1.36
✓ 2236.16	2537 M2 12-16"	35.7	1.19
✓ 2236.17	2537 N1 0-6"	87.75	1.17
✓ 2236.18	2537 N2 12-16"	ND	1.04
✓ 2236.19	2537 O1 0-6"	499.5	1.13
✓ 2236.20	2537 O2 12-16"	67.83	1.14
✓ 2236.21	2537 P1 0-6"	499.0	1.17
✓ 2236.22	2537 P2 12-16"	47.01	1.19
✓ 2236.23	2537 Q1 0-6"	88.27	1.27
✓ 2236.24	2537 Q2 12-16"	ND	1.17
✓ 2236.25	2537 R1 0-6"	119.6	1.22
✓ 2236.26	2537 R2 12-16"	ND	1.13
✓ 2236.27	2537 S1 0-6"	98.0	1.12
✓ 2236.28	2537 S2 12-16"	ND	1.09
2236.29	Field Dup.	ND	1.03

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2252.1-13
 Sample Received: 12/19/96
 Analysis Start: 12/31/96
 Analysis Completed: 12/31/96

Site: Ft. Monmouth
 Building 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: E.P.A SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory ID#	Sample Location	Result (mg/Kg)	MDL (mg/Kg)
✓ 2252.1	2537 T1 0-6"	584.2	1.15
✓ 2252.2	2537 T2 12-16"	67.62	0.98
✓ 2252.3	2537 U1 0-6"	959.0	1.08
✓ 2252.4	2537 U2 12-16"	143.0	0.79
✓ 2252.5	2537 V1 0-6"	365.0	1.04
✓ 2252.6	2537 V2 12-16"	225.2	1.05
✓ 2252.7	2537 W1 0-6"	147.2	1.09
✓ 2252.8	2537 W2 12-16"	7.480	1.15
✓ 2252.9	2537 X1 0-6"	20.54	1.37
✓ 2252.10	2537 X2 12-16"	18.36	1.08
✓ 2252.11	2537 Y1 0-6"	121.6	1.28
✓ 2252.12	2537 Y2 12-16"	13.44	0.96
✓ 2252.13	Field Duplicate	8.190	1.17

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2253.1-19
 Sample Received: 12/20/96
 Analysis Start: 1/03/97
 Analysis Completed: 1/03/97

Site: Ft. Monmouth
 Building 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: E.P.A SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory ID#	Sample Location	Result (mg/Kg)	MDL (mg/Kg)
✓ 2253.1	2537 Z1 0-6"	32870	1.37
✓ 2253.2	2537 Z2 12-16"	3.890	1.11
✓ 2253.3	2537 AA1 0-6"	28930	1.22
✓ 2253.4	2537 AA2 12-16"	ND	1.07
✓ 2253.5	2537 BB1 0-6"	142.5	1.25
✓ 2253.6	2537 BB2 12-16"	14.13	1.13
✓ 2253.7	2537 CC1 0-6"	132.9	1.43
✓ 2253.8	2537 CC2 12-16"	ND	1.05
✓ 2253.9	2537 DD1 0-6"	317.6	1.36
✓ 2253.10	2537 DD2 12-16"	ND	1.15
✓ 2253.11	2537 EE1 0-6"	16540	1.19
✓ 2253.12	2537 EE2 12-16"	ND	1.04
✓ 2253.13	2537 FF1 0-6"	333.2	1.36
✓ 2253.14	2537 FF2 12-16"	ND	1.09
✓ 2253.15	2537 GG1 0-6"	120.6	1.16
✓ 2253.16	2537 GG2 12-16"	25.50	1.00
✓ 2253.17	2537 HH1 0-6"	309.6	1.29
✓ 2253.18	2537 HH2 12-16"	4.680	1.04
✓ 2253.19	Field Duplicate	4.480	1.12

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2254.1-19
 Sample Received: 12/23/96
 Analysis Start: 01/09/97
 Analysis Completed: 01/10/97

Site: Ft. Monmouth
 Building 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: E.P.A SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory ID#	Sample Location	Result (mg/Kg)	MDL (mg/Kg)
✓ 2254.1	2537 II1 0-6"	24920	1.30
✓ 2254.2	2537 II2 12-16"	29.84	1.17
✓ 2254.3	2537 JJ1 0-6"	6127	1.33
✓ 2254.4	2537 JJ2 12-16"	21.60	1.08
✓ 2254.5	2537 KK1 0-6"	1845	1.27
✓ 2254.6	2537 KK2 12-16"	1.270	1.18
✓ 2254.7	2537 LL1 0-6"	2888	1.17
✓ 2254.8	2537 LL2 12-16"	767.0	1.18
✓ 2254.9	2537 MM1 0-6"	174.3	1.19
✓ 2254.10	2537 MM2 12-16"	16.09	1.11
✓ 2254.11	2537 NN1 0-6"	141.2	1.32
✓ 2254.12	2537 NN2 12-16"	67.28	1.15
✓ 2254.13	2537 OO1 0-6"	70.00	1.12
✓ 2254.14	2537 OO2 12-16"	19.89	1.17
✓ 2254.15	2537 PP1 0-6"	80.69	0.99
✓ 2254.16	2537 PP2 12-16"	ND	1.10
✓ 2254.17	2537 QQ1 0-6"	1663	1.18
✓ 2254.18	2537 QQ2 12-16"	134.6	1.06
✓ 2254.19	Field Duplicate	142.0	1.02

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

**TCLP
LEAD**

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2568.01-.16
 Sample Received: 5/19/97
 Analysis Start: 5/20/97
 Analysis Completed: 5/23/97

Site: Ft. Monmouth
 Bldg. 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
✓ 2568.01	2537 RR1 0-6"	74390	9.83
✓ 2568.02	2537 RR2 12-16"	273.5	10.98
✓ 2568.03	2537 SS1 0-6"	463.1	9.68
✓ 2568.04	2537 SS2 12-16"	179.2	9.61
✓ 2568.05	2537 TT1 0-6"	297.6	8.80
✓ 2568.06	2537 TT2 12-16"	279.2	10.15
✓ 2568.07	2537 UU1 0-6"	1364	1.03
✓ 2568.08	2537 UU2 12-16"	109.4	1.05
✓ 2568.09	2537 VV1 0-6"	20.62	1.11
✓ 2568.10	2537 VV2 12-16"	19.54	1.09
✓ 2568.11	2537 WW1 0-6"	41.21	1.33
✓ 2568.12	2537 WW2 12-16"	23.69	1.08
✓ 2568.13	2537 XX1 0-6"	98.07	1.25
✓ 2568.14	2537 XX2 12-16"	28.36	1.03
✓ 2568.15	2537 YY1 0-6"	245.6	1.23
✓ 2568.16	2537 YY2 12-16"	16.32	1.13

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 2635.01-.10
 Sample Received: 6/04/97
 Analysis Start: 6/11/97
 Analysis Completed: 6/11/97

Site: Ft. Monmouth
 Bldg. 2537

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
 Method of Digestion: SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
✓ 2635.01	2537 ZZ1 0-6"	154.9	2.77
✓ 2635.02	2537ZZ2 12-16"	5.960	2.98
✓ 2635.03	2537 AAA 0-6"	81.67	3.08
✓ 2635.04	2537 BBB 0-6"	48.92	3.01
✓ 2635.05	2537 CCC 0-6"	71.44	3.17
✓ 2635.06	2537 DDD1 0-6"	315.3	2.75
✓ 2635.07	2537 DDD2 12-16"	60.46	3.02
✓ 2635.08	2537 EEE 0-6"	43.85	2.14
✓ 2635.09	2537 FFF 0-6"	6.100	3.05
✓ 2635.10	2537 GGG 0-6"	115.4	2.96

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4700.01-.02
Sample Received: 08/10/99
Analysis Start: 08/10/99
Analysis Completed: 08/10/99

Site: CW-4

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
Method of Digestion: E.P.A. SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
4700.01	A-6 10-10.5'	ND	14.39
4700.02	Dup 10-10.5'	ND	13.65

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 4891.01-.38
 Sample Received: 10/28/99
 Analysis Start: 10/29/99
 Analysis Completed: 10/29/99

Site: Bldg. 2537

Matrix: Soil

Method of Analysis: E.P.A. SW-846, Method 7420
 Method of Digestion: E.P.A. SW-846, Method 3051A

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
✓ 4891.01	2537 PR 01 0-6"	74.47	10.34
✓ 4891.02	2537 PR 01 12-18"	33.62	11.21
✓ 4891.03	2537 PR 02 0-6"	63.98	8.42
✓ 4891.04	2537 PR 02 12-18"	79.65	11.38
✓ 4891.05	2537 PR 03 0-6"	27.38	11.41
✓ 4891.06	2537 PR 03 12-18"	46.61	11.65
✓ 4891.07	2537 PR 04 0-6"	103.8	11.54
✓ 4891.08	2537 PR 04 12-18"	ND	11.75
✓ 4891.09	2537 PR 05 0-6"	59.53	12.40
✓ 4891.10	2537 PR 05 12-18"	ND	11.45
✓ 4891.11	2537 PR 06 0-6"	113.4	12.06
✓ 4891.12	2537 PR 06 12-18"	ND	12.02
✓ 4891.13	2537 PR 07 0-6"	42.90	10.21
✓ 4891.14	2537 PR 07 12-18"	56.97	11.87
✓ 4891.15	2537 PR 08 0-6"	ND	11.73
✓ 4891.16	2537 PR 08 12-18"	78.66	13.11
✓ 4891.17	2537 PR 09 0-6"	52.33	11.38
✓ 4891.18	2537 PR 09 12-18"	296.3	10.74
✓ 4891.19	2537 PR 10 0-6"	57.83	11.57

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
 DPW, SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab ID #: 4891.01-.38
 Sample Received: 10/28/99
 Analysis Start: 10/29/99
 Analysis Completed: 10/29/99

Site: Bldg. 2537

Matrix: Soil

Method of Analysis: E.P.A. SW-846, Method 7420
 Method of Digestion: E.P.A. SW-846, Method 3051A

TEST PARAMETER: Lead

	Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
✓	4891.20	2537 PR 10 12-18"	ND	11.82
✓	4891.21	2537 PR 11 0-6"	22.12	12.29
✓	4891.22	2537 PR 11 12-18"	14.35	11.96
✓	4891.23	2537 PR 12 0-6"	32.16	11.49
✓	4891.24	2537 PR 12 12-18"	ND	12.59
✓	4891.25	2537 PR 13 0-6"	18.01	12.87
✓	4891.26	2537 PR 13 12-18"	ND	10.46
✓	4891.27	2537 PR 14 0-6"	20.45	12.78
✓	4891.28	2537 PR 14 12-18"	58.39	12.69
✓	4891.29	2537 PR 15 0-6"	ND	12.78
✓	4891.30	2537 PR 15 12-18"	ND	11.75
✓	4891.31	2537 PR 16 0-6"	21.90	10.95
✓	4891.32	2537 PR 16 12-18"	ND	10.98
✓	4891.33	2537 PR 17 0-6"	16.01	11.44
✓	4891.34	2537 PR 17 12-18"	ND	10.05
✓	4891.35	2537 PR 18 0-6"	ND	10.05
✓	4891.36	2537 PR 18 12-18"	ND	9.84
	4891.37	2537 Dup 0-6"	32.99	11.78
	4891.38	2537 Dup 12-18"	ND	11.84

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

APPENDIX D

**Site Specific Health & Safety Plan
Building 2537 - Pistol Range
Soil Remediation, June, 19, 1997**

**Site Specific
Health and Safety Plan**

For

**Building 2537
Pistol Range Soil Remediation**

June 19, 1997

1.0 INTRODUCTION

This section of the Site Health and Safety Plan (HASP) document defines general applicability and general responsibilities with respect to compliance with Health and Safety programs.

1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan is to define the requirements and designate protocols to be followed at the Site during investigation and remediation activities. Applicability extends to all Government employees, contractors, subcontractors, and visitors.

All personnel on site, contractors and subcontractors included, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards in table 3.1 and defines protective measures planned for the site.

This plan must be reviewed and an agreement to comply with the requirements must be signed by all personnel prior to entering the exclusion zone or contamination reduction zone.

During development of this plan consideration was given to current safety standards as defined by EPA/OSHA/NIOSH, health effects and standards for known contaminants, and procedures designed to account for the potential for exposure to unknown substances. Specifically, the following references sources have been consulted:

- o OSHA 29 CFR 1910.120 and EPA 40 CFR 311

1.2 Visitors

All visitors entering the contamination reduction zone and exclusion zone at the Site will be required to read and verify compliance with the provisions of this HASP. In addition, visitors will be expected to comply with relevant OSHA requirements such as medical monitoring (Sec. 6.0), training (Sec. 4.0), and respiratory protection (if applicable). Visitors will also be expected to provide their own protective equipment.

In the event that a visitor does not adhere to the provisions of the HASP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the site log.

2.0 KEY PERSONNEL/IDENTIFICATION OF HEALTH AND SAFETY

2.1 Key Personnel

The following personnel and organizations are critical to the planned activities at the Site. The organizational structure will be reviewed and updated periodically by the site supervisor.

DPW

Joe Fallon

2.2 Site Specific Health and Safety Personnel

The Site Health and Safety Officer (HSO) has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, it is vital that personnel assigned as HSO be experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120 (see Section 4.0 of this HASP). The HSO is also responsible for conducting site inspections on a regular basis in order to ensure the effectiveness of this plan.

The HSO at the site is Beth Welmaker

Designated alternates include:

- o Mike Reid
- o Karen Roach

2.3 Organizational (DPW) Responsibility:

Oversee remediation project

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site

This HASP defines the hazards and methods to protect personnel from those hazards as identified in previous site work or background information. For a thorough overview of historical information concerning the Site see the following documents:

Preliminary assessment

Joe Fallon, DPW
12-04-96

Site inspection report

Joe Fallon, DPW

Remedial investigation report

Joe Fallon, DPW

3.2 Task by Task Risk Analysis

The evaluation of hazards is based upon the knowledge of site background presented in Section 3.1, and anticipated risks posed by the specific operation.

The following subsections describe each task/operation in terms of the specific hazards associated with it. In addition, the protective measures to be implemented during completion of those operations are also identified.

The contamination at this site is from activities at the pistol range. For many years the range was swept clean and sand was sifted and deposited at the exterior of the building.

Planned activity at this site is scheduled for one day in length, on June 19th, 1997. Soil sampling will be performed and analysis will be done by the environmental lab at Fort Monmouth.

Table 3.1 provide a summary of task analysis and chemical hazards for each task at the Site.

TABLE 3.1
 TASK ANALYSIS
 CHEMICAL HAZARDS OF CONCERN

CONTAMINANT	TLV/IDLH	SOURCE/ CONCENTRATION	ROUTES OF EXPOSURE
**** Clearing/grading ****			
LEAD, INORGANIC	TLV: 0.05 mg/m ³ IDLH: 100 mg/m ³	Air - 2 to 50 ppm	Inhalation Ingestion Contact
**** Rubble collection/disposal ****			
LEAD, INORGANIC	TLV: 0.05 mg/m ³ IDLH: 100 mg/m ³	Drums - 2 to 100	Inhalation Ingestion Contact

3.3 Task Hazard Descriptions

Clearing/grading:

General hazards encountered during mobilization include the following:

- o Back strain from clearing vegetation for road construction with a scythe or other cutting tool.
- o Irritation from dust generated from road construction.
- o Driving vehicles, placing trailers, and collecting rubbish, on uneven surfaces creates a possibility of the vehicle rolling, getting stuck in mud or ditches, or of an accident due to flat tires or striking obstacles, and the vehicles.
- o Crushing or pinching hazard due to trailer placement.
- o Several types of hazards can be associated with utility hook-up depending on the particular work activity. Construction of temporary poles for electrical and/or telephone lines can disturb potentially contaminated soils.

HAZARD PREVENTION

- o Back strain can be prevented by frequent breaks in routine. Use slow, even, movements and proper lifting techniques (i.e., with the legs). Work gloves will reduce the incidence of hand injury and blisters associated with hand scything.
- o Dust suppression techniques, i.e., wetting the soil with water, will reduce dust exposure.
- o Proper vehicle maintenance will prevent avoidable vehicle breakdown in the field. In order to minimize accidents from uneven terrain, a site surveillance should be performed on foot to choose a clear driving path.
- o Seatbelts should be worn at all times.
- o At a minimum, all heavy equipment shall have the safety features outlined in OSHA 29 CFR 1910/1926 Subpart O.

- o Heavy equipment operators should have proper training and experience, and documentation of both. The general provisions of 1910/1926 would apply.
- o Hazards associated with the particular utility would be anticipated and proper measures should be undertaken by the subcontractor employer. General provisions of 29 CFR 1910/1926 Subpart K, should be implemented in order to prevent electrical hazards.

3.4 Physical Hazards

General Description:

LEAD, INORGANIC-

Health Hazards:

LEAD, INORGANIC-

Non-Fire Response:

LEAD, INORGANIC-

First Aid:

LEAD, INORGANIC-

June 11, 1997

TASK/OPERATION SAFETY AND HEALTH RISK [3-5]

4.0 PERSONNEL TRAINING REQUIREMENTS

Consistent with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response, all site personnel are required to be trained in accordance with the standard. At a minimum all personnel are required to be trained to recognize the hazards on-site, the provisions of this HASP, and the responsible personnel.

4.1 Preassignment and Annual Refresher Training

Prior to arrival on site, each employer will be responsible for certifying that his/her employees meet the requirements of preassignment training, consistent with OSHA 29 CFR 1910.120 paragraph (e)(3). The employer should be able to provide a document certifying that each general site worker has received 40 hours of instruction off the site, and 24 hours of training for any workers who are on site only occasionally for a specific task. If an individual employee has work experience and/or training that is equivalent to that provided in the initial training, an employer may waive the 40-hour training so long as that equivalent experience is documented or certified. All personnel must also receive 8 hours of refresher training annually.

4.2 Site Supervisors

The following individuals are identified as site supervisors:

Name	Title/Responsibility
Joe Rogers	Roads Foreman

4.3 Training and Briefing Topics

The following items will be discussed by a qualified individual at the site pre-entry briefing(s) or periodic site briefings.

Training	Frequency
Air Monitoring, Sec. 7.0; [29 CFR 1910.120(h)]	Periodic
Backhoe	Daily

Chemical hazards. Table 3.1	Daily
Emergency response plan. Sec. 10.0; [29 CFR 1910.120(l)]	Daily
Engineering controls and work practices	Daily
Heavy machinery	Daily
Medical surveillance requirements	
Overhead and underground utilities	
Personnel protective equipment, Sec. 5.0	
Physical hazards. Table 3.2	
Respiratory protection, Sec. 5.8	
Sanitation. [29 CFR 1910.120(n)]	
Site Control, Sec. 8.0; [29 CFR 1910.120(d)]	
Symptoms of overexposure to hazards	
Training requirements, Sec. 4.0; [29 CFR 1910.120(e)]	

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PERSONNEL TRAINING REQUIREMENTS [4-2]

5.0 PERSONAL PROTECTIVE EQUIPMENT TO BE USED

This section describes the general requirements of the EPA designated Levels of Protection (A-D), and the specific levels of protection required for each task at the Site.

5.1 Levels of Protection

Personnel wear protective equipment when response activities involve known or suspected atmospheric contamination vapors, gases, or particulates may be generated by site activities, or when direct contact with skin-affecting substances may occur. Full facepiece respirators protect lungs gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with skin-destructive and absorbable chemicals.

The specific levels of protection and necessary components for each have been divided into four categories according to the degrees of protection afforded:

- Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed.
- Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection. Level B is the primary level of choice when encountering unknown environments.
- Level C: Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed.
- Level D: Should be worn only as a work uniform and not in any area with respiratory or skin hazards. It provides minimal protection against chemical hazards.

Modifications of these levels are permitted, and routinely employed during site work activities to maximize efficiency. For example, Level C respiratory protection and Level D skin protection may be required for a given task. Likewise the type of chemical protective ensemble (i.e., material, format) will depend upon contaminants and degrees of contact.

The Level of Protection selected is based upon the following:

- o Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.
- o Potential for exposure to substances in air liquids, or other direct contact with material due to work being done.
- o Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

In situations where the type of chemical, concentration, and possibilities of contact are not known, the appropriate Level of Protection must be selected based on professional experience and judgment until the hazards can be better identified.

5.2 Level A Personnel Protective Equipment:

- o Supplied-air respirator approved by the Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for Immediately Dangerous to Life and Health (IDLH) or potential for IDLH atmosphere)
- o Fully encapsulating chemical-resistant suit
- o Coveralls
- o Long cotton underwear
- o Gloves (inner)
- o Boots, chemical-resistant, steel toe and shank (depending on suit construction, worn over or under suit boot)
- o Hard hat (under suit)
- o Disposable gloves and boot covers (worn over fully encapsulating suit)
- o Cooling unit
- o 2-way radio communications (intrinsically safe)

5.3 Level B Personnel Protective Equipment:

- o Supplied-air respirator (MSHA/NIOSH approved). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for IDLH or potential for IDLH atmosphere)

2 Level B Personnel Protective Equipment:

- o Supplied-air respirator (MSHA/NIOSH approved). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for IDLH or potential for IDLH atmosphere)
- o Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one or two-piece chemical-splash suit; disposable chemical-resistant, one-piece suits)
- o Long cotton underwear
- o Coveralls
- o Gloves (outer), chemical-resistant
- o Gloves (inner), chemical-resistant
- o Boots (outer), chemical-resistant, steel toe and shank
- o Boot covers (outer), chemical-resistant (disposable)
- o Hard hat (face shield)
- o 2-way radio communications (intrinsically safe)

5.4 Level C Personnel Protective Equipment:

- o Air-purifying respirator, full-face or half-face, cartridge-equipped (MSHA/NIOSH approved)
- o Chemical-resistant clothing (coveralls; hooded, one-piece or two-piece chemical splash suit; chemical-resistant hood and apron; disposable chemical-resistant coveralls)
- o Coveralls
- o Gloves (outer), chemical-resistant
- o Gloves (inner), chemical-resistant
- o Boots (outer), chemical-resistant, steel toe and shank
- o Boot covers (outer), chemical-resistant (disposable)
- o Hard hat (face shield)
- o 2-way radio communications (intrinsically safe)

June 11, 1997

PERSONAL PROTECTIVE EQUIPMENT TO BE [5-3]

5.5 Level D Personnel Protective Equipment

- o Coveralls
- o Gloves
- o Boots/shoes, leather or chemical-resistant, steel toe and shank
- o Safety glasses
- o Hard hat

5.6 Reassessment of Protection Program

The Level of Protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of investigations.

When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- o Commencement of a new work phase, such as the start of drum sampling or work that begins on a different portion of the site.
- o Change in job tasks during a work phase.
- o Change of season/weather.
- o When temperature extremes or individual medical considerations limit the effectiveness of PPE.
- o Contaminants other than those previously identified are encountered.
- o Change in ambient levels of contaminants.
- o Change in work scope which effects the degree of contact with contaminants.

5.7 Work Mission Duration

Before the workers actually begin work in their PPE ensembles the anticipated duration of the work mission should be established. Several factors limit mission length, including:

(See next page)

- o Suit/Ensemble permeation and penetration rates for chemicals (section 5.8).
- o Ambient temperature and weather conditions (heat stress cold stress).
- o Capacity of personnel to work in PPE.

5.8 Chemical Resistance and Integrity of Protective Material

The following specific clothing materials are recommended for the site:

Clearing/grading - (Level C)

Inner Gloves - Surgical

Boots/Boot Covers - TYVEK

Outer Gloves - Work Gloves

Outer Garment/Coveralls - TYVEK

Removal/Disposal - (Level C)

Inner Gloves - Surgical

Boots/Boot Covers - TYVEK

Outer Gloves - Work Gloves

Outer Garment/Coveralls - TYVEK

5.9 SOP for Personal Protective

5.9.1 Inspection

Proper inspection of PPE features several sequences of inspection depending upon specific articles of PPE and its frequency of use. The different levels of inspection are as follows:

- o Inspection and operational testing of equipment received from the factory or distributor.
- o Inspection of equipment as it is issued to workers.
- o Inspection after use or training and prior to maintenance.
- o Periodic inspection of stored equipment.
- o Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the Site will occur prior to immediate use and will be conducted by the user. This ensures that the specific device or article has been checked-out by the user that the user is familiar with its use.

Table 5.1 Sample PPE Inspection Checklists

CLOTHING

Before use:

- o Determine that the clothing material is correct for the specified task at hand.
- o Visually inspect for:
 - imperfect seams
 - non-uniform coatings
 - tears
 - malfunctioning closures
- o Hold up to light and check for pinholes.
- o Flex product:
 - observe for cracks
 - observe for other signs of shelf deterioration
- o If the product has been used previously, inspect inside and out for signs of chemical attack:
 - discoloration
 - swelling
 - stiffness

During the work task

- o Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- o Closure failure.
- o Tears.
- o Punctures.
- o Seam Discontinuities.

GLOVES

Before use:

- o Visually inspect for:
 - imperfect seams
 - tears
 - non-uniform coating
 - pressurize glove with air; listen for pin-hole leaks.

5.11 Specific Levels of Protection Planned for the Site

The following levels of protection will be utilized during activities at the Site:

- o Level C

Table 5.2 presents the level of protection planned for the completion of individual task assignments and the specific components of each protective ensemble.

TABLE 5.2
SPECIFIC LEVELS OF PROTECTION PLANNED FOR THE
TASK ASSIGNMENTS AT THE SITE

LEVEL A Tasks

LEVEL A Tasks (modified)

LEVEL B Tasks

LEVEL B Tasks (modified)

LEVEL C Tasks

- o Clearing/grading
- o Removal/disposal

LEVEL C Tasks (modified)

LEVEL D Tasks

LEVEL D Tasks (modified)

6.0 MEDICAL SURVEILLANCE REQUIREMENTS

Medical monitoring programs are designed to track the physical condition of employees on a regular basis as well as survey pre-employment or baseline conditions prior to potential exposures. The medical surveillance program is a part of each employers Health and Safety program.

6.1 Baseline or Preassignment Monitoring

Prior to being assigned to a hazardous or a potentially hazardous activity involving exposure to toxic materials employee must receive a preassignment or baseline physical. The contents of the physical is to be determined by the employers medical consultant. As suggested by NIOSH/OSHA/USCG/EPA's Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities, the minimum medical monitoring requirements for work at the Site is as follows:

- Complete medical and work histories.
- Physical examination.
- Pulmonary function tests (FVC and FEV1).
- Chest X-ray (every 2 years).
- EKG.
- Eye examination and visual acuity.
- Audiometry.
- Urinalysis.
- Blood chemistry and heavy metals toxicology.

The preassignment physical should categorize employees as fit-for-duty and able to wear respiratory protection.

6.2 Periodic Monitoring

In addition to a baseline physical, all employees require a periodic physical within the last 12 months unless the advising physician believes a shorter interval is appropriate. The employers medical consultant should prescribe an adequate medical which fulfills OSHA 29 CFR 1910.120 requirements. The preassignment medical outlined above may be applicable.

All personnel working in contaminated or potentially contaminated area's at the Site will verify currency (within 12 months) with respect to medical monitoring. This is done by indicating date of last physical on the safety plan agreement form.

6.3 Site Specific Medical Monitoring

For activities at the Site, the following specific tests will be required prior to individuals entering the Exclusion Zone or Contamination Reduction Zone.

Annual physicals

6.4 Exposure/Injury/Medical Support

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending upon the type of exposure, it is critical to perform follow-up testing within 24-48 hours. It will be up to the employers medical consultant to advise the type of test required to accurately monitor for exposure effects.

6.5 Exit Physical

At termination of employment or reassignment to an activity or location which does not represent a risk of exposure to hazardous substances, an employee shall require an exit physical. If his/her last physical was within the last 6 months, the advising medical consultant has the right to determine adequacy and necessity of exit exam.

7.0 FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING

This section explains the general concepts of an air monitoring program and specifies the surveillance activities that will take place during project completion at the Site.

The purpose of air monitoring is to identify and quantify airborne contaminants in order to verify and determine the level of worker protection needed. Initial screening for identification is often qualitative, i.e., the contaminant, or the class to which it belongs, is demonstrated to be present but the determination of its concentration (quantification) must await subsequent testing. Two principal approaches are available for identifying and/or quantifying airborne contaminants:

- o The onsite use of direct-reading instruments.
- o Laboratory analysis of air samples obtained by gas sampling bag, collection media (i.e., filter, sorbent), and/or wet-contaminant collection methods.

7.1 Direct-Reading Monitoring Instruments

Unlike air sampling devices, which are used to collect samples for subsequent analysis in a laboratory, direct-reading instruments provide information at the time of sampling, enabling rapid decision-making. Data obtained from the real-time monitors are used to assure proper selection of personnel protection equipment, engineering controls, and work practices. Overall, the instruments provide the user the capability to determine if site personnel are being exposed to concentrations which exceed exposure limits or action levels for specific hazardous materials.

Of significant importance, especially during initial entries, is the potential for IDLH conditions or oxygen deficient atmospheres. Real-time monitors can be useful in identifying any IDLH conditions, toxic levels of airborne contaminants, flammable atmospheres, or radioactive hazards. Periodic monitoring of conditions is critical, especially if exposures may have increased since initial monitoring or if new site activities have commenced.

Table 7.1, excerpted from Occupational Safety and Health Guidelines for Hazardous Waste Site Activities, provides an overview of available monitoring instrumentation and their specific operating parameters.

TABLE 7.1 SOME DIRECT-READING INSTRUMENTS FOR GENERAL SURVEY

Instrument: Combustible gas indicator (CGI)

Hazard Monitored: Combustible gases and vapors.

Application: Measures the concentration of a combustible gas or vapor.

Detection Method: A filament, usually made of platinum, is heated by burning the combustible gas or vapor. The increase in heat is measured. Gases and vapors are ionized in a flame. A current is produced in proportion to the number of carbon atoms present.

General Care/Maintenance: Recharge or replace battery. Calibrate immediately before use.

Typical Operating Time: Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

Instrument: Flame Ionization Detector (FID) with Gas Chromatography Option. Example: Foxboro OVA.

Hazard Monitored: Many organic gases and vapors.

Application: In survey mode, detects the concentration of many organic gases and vapors. In gas chromatography (GC) mode identifies and measures specific compounds. In survey mode, all the organic compounds are ionized and detected at the same time. In GC mode, volatile species are separated.

General Care/Maintenance: Recharge or replace battery. Monitor fuel and/or combustion air supply gauges. Perform routine maintenance as described in the manual. Check for leaks.

Typical Operating Time: 8 hours; 3 hours with strip chart recorder.

Instrument: Portable Infrared (IR) Spectrophotometer

Hazard Monitored: Many gases and vapors.

Application: Measures concentration of many gases and vapors in air. Designed to quantify one or two component mixtures.

Detection Method: Passes different frequencies of IR through the sample. The frequencies absorbed are specific for each compound.

General Care/Maintenance: As specified by manufacturer.

Instrument: Ultraviolet (UV) Photoionization Detector (PID)
Example: HNU.

Hazard Monitored: Many organic and some inorganic gases and vapors.

Application: Detects total concentration of many organic and some inorganic gases and vapors. Some identification of compounds are possible if more than one probe is measured.

Detection Method: Ionizes molecules using UV radiation; produces a current that is proportional to the number of ions.

General Care/Maintenance: Recharge or replace battery. Regularly clean lamp window. Regularly clean and maintain the instrument and accessories.

Typical Operating Time: 10 hours. 5 hours with strip chart recorder.

Instrument: Direct Reading Colorimetric Indicator Tube

Hazard Measured: Specific gas and vapors.

Application: Measures concentration of specific gases and vapors.

Detection Method: The compound reacts with the indicator chemical in the tube, producing a stain whose length or color change is proportional to the compound's concentration.

General Care/Maintenance: Do not use a previously opened tube even if the indicator chemical is not stained. Check pump for leaks before and after use. Refrigerate before use to maintain a shelf life of about 2 years. Check expiration date of tubes. Calibrate pump volume at least quarterly. Avoid rough handling which may cause channeling.

Instrument: Oxygen Meter

Hazard Monitored: Oxygen (O₂)

Application: Measures the percentage of O₂ in the air.

Detection Method: Uses an electrochemical sensor to measure the partial pressure of O₂ in the air, and converts that reading to O₂ concentration.

General Care/Maintenance: Replace detector cell according to manufacturer's recommendations. Recharge or replace batteries prior to expiration of the specified interval. If the ambient air is more than 0.5% CO₂, replace the detector cell frequently.

Typical Operating Time: 8-12 hours.

Instrument: Real Time Aerosol Monitor

Hazard Monitored: Particulates

Application: Measures total particulates in air.

Detection Method: Uses an internal light source. The particulates deflect the light beam and the amount of diffraction is converted into concentration (mg/m³).

General Care/Maintenance: Recharge batteries. Replace desiccant when necessary.

Typical Operating Time: 8-12 hours.

After site mitigation activities have commenced, the selective monitoring of high-risk workers, i.e., those who are closest to the source of contaminant generation, is essential. Personal monitoring samples should be collected in the breathing zone and, if workers are wearing respiratory protective equipment, outside the facepiece.

Those employees working closest with the source have the highest likelihood of being exposed to concentrations which exceed established exposure limits. Representative sampling approaches emphasizing worst case conditions, those employees with the greatest risk of exposure, is acceptable. However, the sampling strategy may change if the operation or tasks change onsite or if exposures potentially increase.

7.3 Specific Contaminants to be monitored at the Site

The following checklist provides a summary of the contaminants to be monitored for and frequency/schedule of monitoring. The air sampling checklist will serve as a site monitoring plan.

(See the following page)

7.3.1 Site Air Monitoring and Sampling Program

A. Air Monitoring Instruments

Personal Sampling Pump

Frequency : All day

Locations : Excavation area

B. Action Levels

Particulates: Lead

Action Level

30 $\mu\text{g}/\text{m}^3$

Action

Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV.

C. Reporting Format

- o Air monitoring log

8.0 SITE CONTROL MEASURES

The following section defines measures and procedures for maintaining site control. Site control is an essential component in the implementation of the site health and safety program.

8.1 Buddy System

During all Level C activities or when some conditions present a risk to personnel, the implementation of a buddy system is mandatory. A buddy system requires at least two people who work as a team: each looking out for each other. Table 8.1 lists those tasks which require a buddy system and any additional site control requirements.

8.2 Site Communications Plan

Successful communications between field teams and contact with personnel in the support zone is essential. The following communications systems will be available during activities at the Site.

- o Two-way radio
- o Intrinsically safe radio

8.3 Work Zone Definition

The three general work zones established at the Site are the Exclusion Zone, Contamination Reduction Zone, and Support Zone. Figure 8.1 provides a site map with the work zones designated on it.

The Exclusion Zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the Exclusion Zone requires the use of personnel protective equipment.

The Contamination Reduction Zone is the area where personnel conduct personal and equipment decontamination. It is essentially a buffer zone between contaminated areas and clean areas. Activities conducted in this zone will require personal protection as defined in the decontamination plan.

The Support Zone is situated in clean areas where the chance to encounter hazardous materials or conditions is minimal.

Personal protective equipment is therefore not required.

8.4 Nearest Medical Assistance

Figure 8.2 provides a map of the route to the nearest medical facility which can provide emergency care for individuals who may experience an injury or exposure on-site. The route to the hospital should be verified by the HSO, and should be familiar to all site personnel.

The following individuals on site have current certification in CPR and/or first aid:

- o Joe Rogers

8.5 Safe Work Practices

Table 8.2 provides a list of standing orders for the Exclusion Zone.

Table 8.3 provides a list of standing orders for the Contamination Reduction Zone.

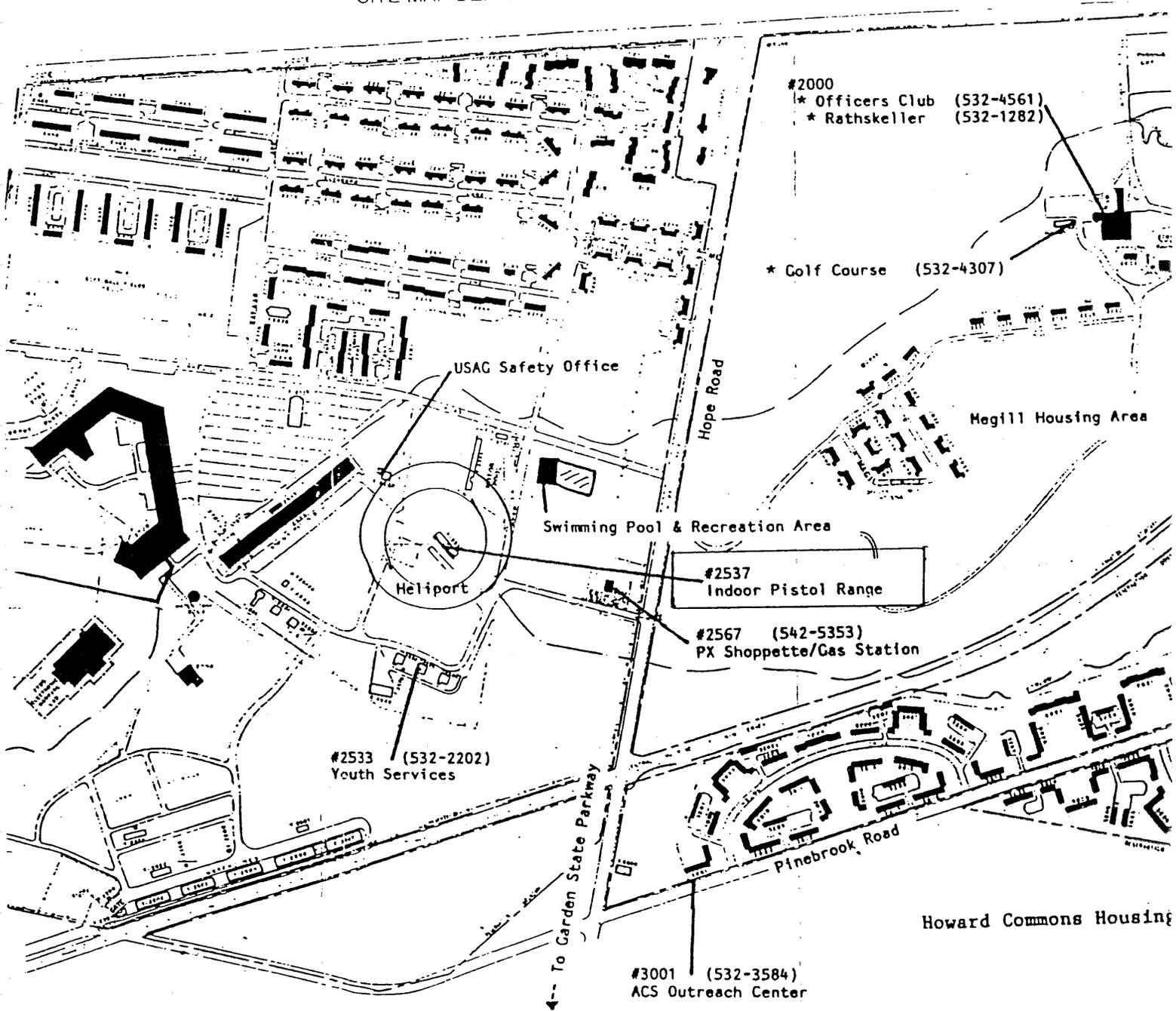
8.6 Emergency Alarm Procedures

The warning signals described in section 10.4 "Evacuation Routes and Procedures," will be deployed in the event of an emergency. Communication signals will also be used according to section 8.2.

TABLE 8.1. PERSONNEL REQUIREMENTS

Task	Control Measures	Comments
**Clearing/grading **Removal/Disposal	Line of Sight Line of Sight	

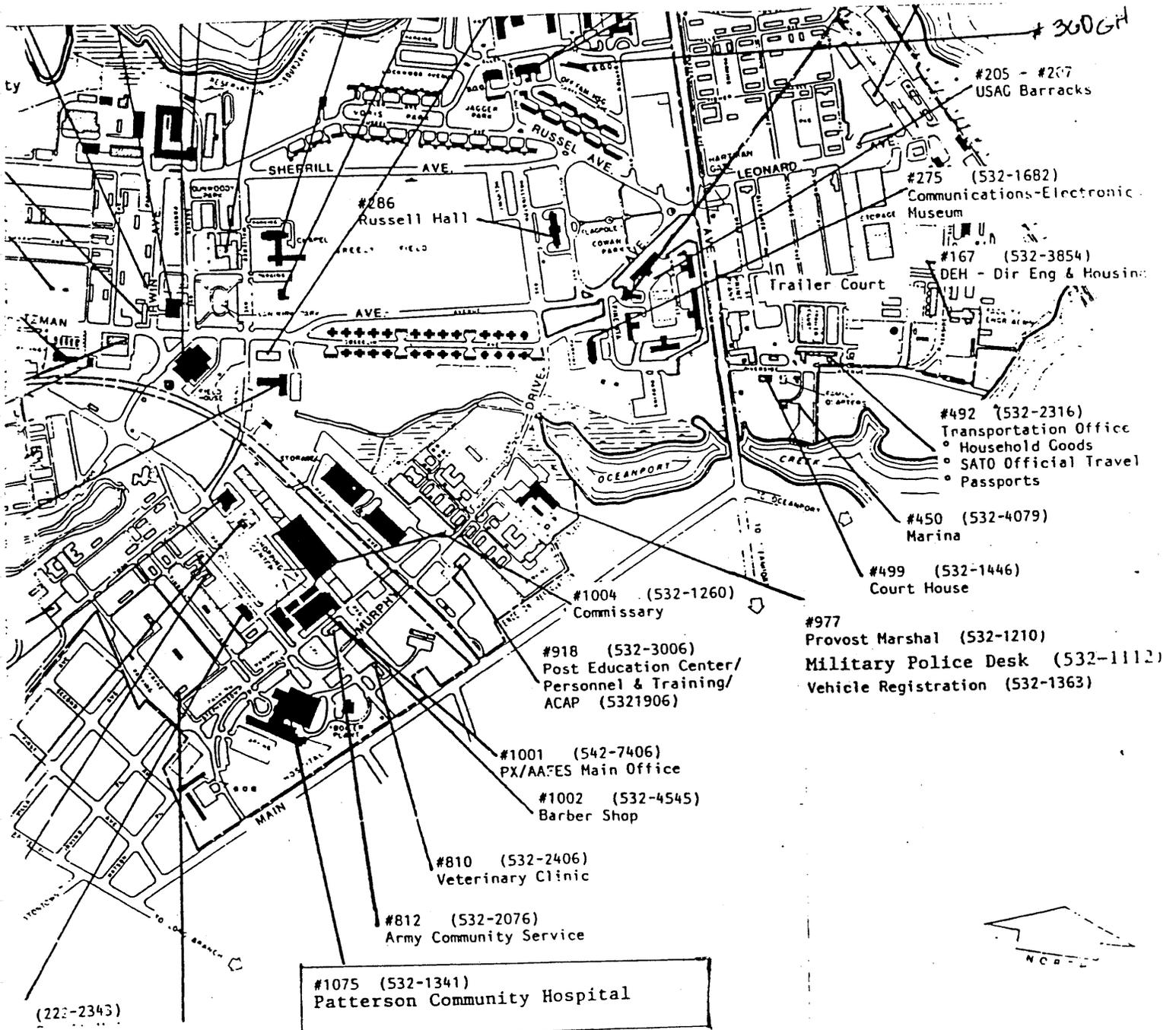
FIGURE 8.1
SITE MAP DEPICTING WORK ZONES



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SITE CONTROL MEASURES [8-4]

FIGURE 8.2
 MAP DEPICTING ROUTE TO NEAREST MEDICAL FACILITIES



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SITE CONTROL MEASURES [8-5]

TABLE 8.2 STANDING ORDERS FOR EXCLUSION ZONE

- o No smoking, eating, or drinking in this zone
- o No horse play
- o No matches or lighters in this zone
- o Check-in on entrance to this zone
- o Check-out on exit from this zone
- o Implement the communications system
- o Line of sight must be in position
- o Wear the appropriate level of protection as defined in the Safety Plan

TABLE 8.3 STANDING ORDERS FOR CONTAMINATION REDUCTION ZONE

- o No smoking, eating, or drinking in this zone
- o No horse play
- o No matches or lighters in this zone
- o Wear the appropriate level of protection

9.0 DECONTAMINATION PLAN

Table 5.2 lists the tasks and specific levels of protection required for each task. Consistent with the levels of protection required, the decontamination figure provides a step by step representation of the personnel decontamination process for either level A, B, or C. These procedures should be modified to suit site conditions and protective ensembles in use.

9.1 Standard Operating Procedures

Decontamination involves the orderly controlled removal of contaminants. Standard decontamination sequences are presented in the decontamination figure. All site personnel should minimize contact with contaminants in order to minimize the need for extensive decon.

9.2 Levels of Decontamination Protection Required for Personnel

The levels of protection required for personnel assisting with decontamination will be Level D.

Modifications include:

The Site Safety Officer is responsible for monitoring decontamination procedures and determining their effectiveness.

9.3 Equipment Decontamination

Sampling equipment will be decontaminated in accordance with procedures as defined in the other, HASP. The sequence of decontamination steps required for non-sampling equipment and heavy machinery can be found in the Quality Assurance Sampling Plan.

9.4 Disposition of Decontamination Wastes

All equipment and solvents used for decontamination shall be decontaminated or disposed of properly.

FIGURE 9.3
LEVEL C DECONTAMINATION STEPS

- Step 1 Segregated equipment drop
- Step 2 Boot cover and glove wash
- Step 3 Boot cover and glove rinse
- Step 4 Tape removal
- Step 5 Boot cover removal
- Step 6 Outer glove removal
- Step 7 Suit/safety boot wash
- Step 8 Suit/safety boot rinse
- Step 9 Safety boot removal
- Step 10 Splash suit removal
- Step 11 Inner glove wash
- Step 12 Inner glove rinse
- Step 13 Face piece removal
- Step 14 Inner glove removal
- Step 15 Inner clothing removal
- Step 16 Field wash
- Step 17 Redress

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DECONTAMINATION PLAN [9-2]

FIGURE 9.4.
LEVEL D DECONTAMINATION STEPS

- Step 1 Remove outer garments (i.e., coveralls)
- Step 2 Remove gloves
- Step 3 Wash hands and face

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DECONTAMINATION PLAN [9-3]

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This section describes contingencies and emergency planning procedures to be implemented at the Site. This plan is compatible with local, state and federal disaster and emergency management plans as appropriate.

10.1 Pre-Emergency Planning

During the site briefings held periodically/daily, all employees will be trained in and reminded of provisions of the emergency response plan, communication systems, and evacuation routes. Table 10.1 identifies the hazardous conditions associated with specific site activities. The plan will be reviewed and revised if necessary, on a regular basis by the HSO. This will ensure that the plan is adequate and consistent with prevailing site conditions.

10.2 Personnel Roles and Lines of Authority

The Site Supervisor has primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measure to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area, and evacuation of adjacent residents. He/she is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The HSO may be called upon to act on the behalf of the site supervisor, and will direct responses to any medical emergency. The individual contractor organizations are responsible for assisting the project manager in his/her mission within the parameters of their scope of work.

The Site Supervisor(s): Joe Rogers.

The HSO is Beth Welmaker

Alternates are:

- o Mike Reid
- o Karen Roach

10.3 Emergency Recognition/Prevention

Table 3.1 provides a listing of chemical and physical hazards onsite. Additional hazards as a direct result of site activities are listed in Table 10.1 as are prevention and control techniques/mechanisms. Personnel will be familiar with techniques of hazard recognition from preassignment training and site specific briefings. The HSO is responsible for ensuring that prevention devices or equipment is available to personnel.

10.4 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site, the following alarm procedures will be implemented:

Evacuation alarm notification should be made using three short blasts on the vehicle horn, supplemented using the hand held radios. All personnel should evacuate upwind of any activities. Insure that a predetermined location is identified off-site in case of an emergency, so that all personnel can be accounted for.

Personnel will be expected to proceed to the closest exit with your buddy, and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that area until the re-entry alarm is sounded or an authorized individual provides further instructions.

TABLE 10.1
EMERGENCY RECOGNITION/CONTROL MEASURES

HAZARD -----	PREVENTION/CONTROL -----	LOCATION -----
Fire/Explosion	Fire Extinguisher Alarm System Fire Inspections	On Vehicle On Vehicle

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EMERGENCY RESPONSE/CONTINGENCY PLAN [10-3]

Figure 10.1 provides a map depicting evacuation routes for the site and immediate area. Also indicated are muster areas and safe distances in the event of a major incident.

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EMERGENCY RESPONSE/CONTINGENCY PLAN [10-4]

10.7 Emergency Contact/Notification System

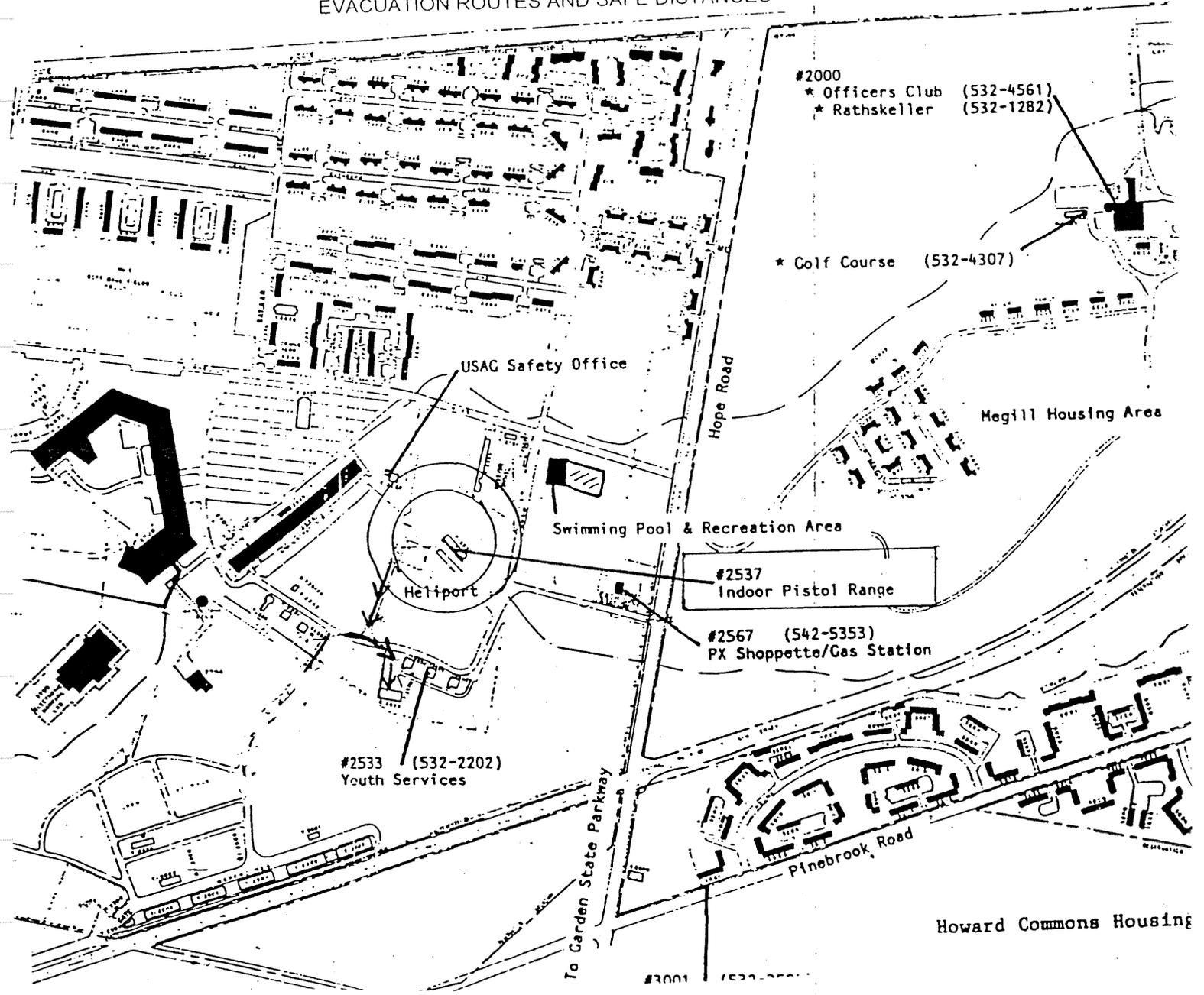
The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the HSO and notify the appropriate emergency organization. In the event of a fire or spill, the site supervisor will notify the appropriate local, state, and federal agencies.

Organization	Contact	Telephone
Ambulance:	Work Control	x21122
Police:	Work Control	x21122
Fire:		911
State Police:		911
Hospital 1:	Work Control	x21122
Hospital 2:	Work Control	x21122
Poison Control Center	Work Control	x21122
Regional EPA:	Joe Fallon	x26223
EPA Emergency Response Team		908-321-6660
State Authority:		
National Response Center		800-424-8802
Center for Disease Control		404-488-4100
Chemtrec		800-424-9555

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EMERGENCY RESPONSE/CONTINGENCY PLAN [10-5]

FIGURE 10.1
EVACUATION ROUTES AND SAFE DISTANCES



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EMERGENCY RESPONSE/CONTINGENCY PLAN [10-6]

10.8 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to the project manager.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they have been exposed to at the site. This information is included in Table 3.1.

Any vehicle used to transport contaminated personnel will be treated and cleaned as necessary.

10.9 Fire or Explosion

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the project manager or designated alternate will advise the fire commander of the location, nature, and identification of the hazardous materials onsite.

If it is safe to do so, site personnel may:

- o Use fire fighting equipment available onsite to control or extinguish the fire; and,
- o Remove or isolate flammable or other hazardous materials which may contribute to the fire.

10.10 Spill or Leaks

In the event of a spill or a leak, site personnel will:

- o Inform their supervisor immediately;
- o Locate the source of the spillage and stop the flow if it can be done safely; and,
- o Begin containment and recovery of the spilled materials.

10.11 Emergency Equipment/Facilities

Figure 10.2 provides a map of the site and identifies the location of the following emergency equipment:

- o Two-way radio
- o First aid kit
- o Fire extinguisher

FIGURE 10.2
SITE MAP WITH EMERGENCY EQUIPMENT LOCATED

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EMERGENCY RESPONSE/CONTINGENCY PLAN [10-9]

11.0 CONFINED SPACE ENTRY PROCEDURES

A confined space provides the potential for unusually high concentrations of contaminants, explosive atmospheres, limited visibility, and restricted movement. This section will establish requirements for safe entry into, continued work in, and safe exit from confined spaces. Additional information regarding confined space entry can be found in 29 CFR 1926.21, 29 CFR 1910 and NIOSH 80-106.

11.1 Definitions

Confined Space: A space or work area not designed or intended for normal human occupancy, having limited means of egress and poor natural ventilation; and/or any structure, including buildings or rooms, which have limited means of egress.

Confined Space Entry Permit (CSEP): A document to be initiated by the supervisor of personnel who are to enter into or work in a confined space. The Confined Space Entry Permit (CSEP) will be completed by the personnel involved in the entry and approved by the HSO before personnel will be permitted to enter the confined space. The CSEP shall be valid only for the performance of the work identified and for the location and time specified. The beginning of a new shift with change of personnel will require the issuance of a new CSEP.

Confined Space Observer: An individual assigned to monitor the activities of personnel working within a confined space. The confined space observer monitors and provides external assistance to those inside the confined space. The confined space observer summons rescue personnel in the event of emergency and assists the rescue team.

11.2 General Provisions

- o When possible, confined spaces should be identified with a posted sign which reads: Caution - Confined Space.
- o Only personnel trained and knowledgeable of the requirements of these Confined Space Entry Procedures will be authorized to enter a confined space or be a confined space observer.
- o A Confined Space Entry Permit (CSEP) must be issued prior to the performance of any work within a confined space. The CSEP will become a part of the permanent and official record of the site.

- o Natural ventilation shall be provided for the confined space prior to initial entry and for the duration of the CSEP. Positive/forced mechanical ventilation may be required. However, care should be taken to not spread contamination outside of the enclosed area.
- o If flammable liquids may be contained within the confined space, explosion proof equipment will be used. All equipment shall be positively grounded.
- o The contents of any confined space shall, where necessary, be removed prior to entry. All sources of ignition must be removed prior to entry.
- o Hand tools used in confined spaces shall be in good repair explosion proof and spark proof, and selected according to intended use. Where possible, pneumatic power tools are to be used.
- o Hand-held lights and other illumination utilized in confined spaces shall be equipped with guards to prevent contact with the bulb and must be explosion proof.
- o Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, shall not be taken into confined spaces. Gas hoses shall be removed from the space and the supply turned off at the cylinder valve when personnel exit from the confined space.
- o If a confined space requires respiratory equipment or where rescue may be difficult, safety belts, body harnesses, and lifelines will be used. The outside observer shall be provided with the same equipment as those working within the confined space.
- o A ladder is required in all confined spaces deeper than the employee's shoulders. The ladder shall be secured and not removed until all employees have exited the space.
- o Only self-contained breathing apparatus or NIOSH approved airline respirators equipped with a 5-minute emergency air supply (egress bottle) shall be used in untested confined spaces or in any confined space with conditions determined immediately dangerous to life and health.
- o Where air-moving equipment is used to provide ventilation, chemicals shall be removed from the vicinity to prevent introduction into the confined space.

- o Vehicles shall not be left running near confined space work or near air-moving equipment being used for confined space ventilation.
- o Smoking in confined spaces will be prohibited at all times.
- o Any deviation from these Confined Space Entry Procedures requires the prior permission of the On-Scene Coordinator.

11.3 Procedure for Confined Space Entry

The HSO and Entry Team shall:

- o Evaluate the job to be done and identify the potential hazards before a job in a confined space is scheduled.
- o Ensure that all process piping, mechanical and electrical equipment, etc., have been disconnected, purged, blanked-off or locked and tagged as necessary.
- o If possible, ensure removal of any standing fluids that may produce toxic or air displacing gases, vapors, or dust.
- o Initiate a Confined Space Entry Permit (CSEP) in concurrence with the project manager or designated alternative.
- o Ensure that any hot work (welding, burning, open flames, or spark producing operation) that is to be performed in the confined space has been approved by the project manager and is indicated on the CSEP.
- o Ensure that the space is ventilated before starting work in the confined space and for the duration of the time that the work is to be performed in the space.
- o Ensure that the personnel who enter the confined space and the confined space observer helper are familiar with the contents and requirements of this instruction.
- o Ensure remote atmospheric testing of the confined space prior to employee entry and before validation/revalidation of a CSEP to ensure the following:
 1. Oxygen content between 19.5% - 23.0%.
 2. No concentration of combustible gas in the space. Sampling will be done throughout the confined space and specifically at the lowest point in the space.

3. The absence of other atmospheric contaminants space has contained toxic, corrosive, or irritant material.
 4. If remote testing is not possible, Level B PPE is required as referenced in III 13.
- o Designate whether hot or cold work will be allowed. If all tests in a. through c. in IV 8 are satisfactory, complete the CSEP listing any safety precautions, protective equipment, or other requirements.
 - o Ensure that a copy of the CSEP is posted at the work site a copy is filed with the project supervisor, and a copy is furnished to the project manager.

The CSEP shall be considered void if work in the confined space does not start within one hour after the tests in IV 8 are performed or if significant changes within the confined space atmosphere or job scope occurs.

The CSEP posted at the work site shall be removed at the completion of the job or the end of the shift, whichever is first.

11.4 Confined Space Observer

- o While personnel are inside the confined space, a confined space observer will monitor the activities and provide external assistance to those in the space. The observer will have no other duties which may take his attention away from the work or require him to leave the vicinity of the confined space at any time while personnel are in the space.
- o The confined space observer shall maintain at least voice contact with all personnel in the confined space. Visual contact is preferred, if possible.
- o The observer shall be instructed by his supervisor in the method for contacting rescue personnel in the event of an emergency.
- o If irregularities within the space are detected by the observer, personnel within the space will be ordered to exit.
- o In the event of an emergency, the observer must NEVER enter the confined space prior to contacting and receiving assistance from a helper. Prior to this time, he should

- o In the event of an emergency, the observer must NEVER enter the confined space prior to contacting and receiving assistance from a helper. Prior to this time, he should attempt to remove personnel with the lifeline and to perform all other rescue functions from outside the space.
- o A helper shall be designated to provide assistance to the confined space observer in case the observer must enter the confined space to retrieve personnel.

12.0 SPILL CONTAINMENT PROGRAM

The procedures defined in this section comprise the spill containment program in place for activities at the Site.

- o All drums and containers used during the clean-up shall meet the appropriate DOT, OSHA, and EPA regulators for the waste that they will contain.
- o Drums and containers shall be inspected and their integrity assured prior to being moved. Drums or containers that cannot be inspected before being moved because of storage conditions, shall be positioned in an accessible location and inspected prior to further handling.
- o Operations on site will be organized so as to minimize the amount of drum or container movement.
- o Employees involved in the drum or container operations shall be warned of the hazards associated with the containers.
- o Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (absorbent, pillows, etc.) will be stationed in the immediate area. The spill containment program must be sufficient to contain and isolate the entire volume of hazardous substances being transferred.
- o Drums or containers that cannot be moved without failure, shall be emptied into a sound container.
- o Fire extinguishing equipment meeting 29 CFR part 1910. subpart 1 shall be on hand and ready for use to control fires.

13.0 HAZARD COMMUNICATION

In order to comply with 29 CFR 1910.1200, Hazard Communication, the following written Hazard Communication Program has been established. All employees will be briefed on this program, and have a written copy for review.

A. CONTAINER LABELING

All containers received on site will be inspected to ensure the following: (1) all containers will be clearly labeled as to the contents; (2) the appropriate hazard warnings will be noted; and (3) the name and address of the manufacturer will be listed.

All secondary containers will be labeled with either an extra copy of the original manufacturer's label or with generic labels which have a block for identify and blocks for the hazard warning.

B. MATERIAL SAFETY DATA SHEETS (MSDSs)

Copies of MSDSs for all hazardous chemicals known or suspected on site will be maintained in the work area. MSDSs will be available to all employees for review during each work shift.

C. EMPLOYEE TRAINING AND INFORMATION

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training of the following: (1) an overview of the requirements contained in the Hazard Communication Standard, 29 CFR 1910.1200; (2) chemicals present in their workplace operations; (3) location and availability of a written hazard program; (4) physical and health effects of the hazardous chemicals; (5) methods and observation techniques used to determine the presence or release of hazardous chemicals; (6) how to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment; (7) emergency procedures to follow if they are exposed to these chemicals; (8) how to read labels and review MSDSs to obtain appropriate hazard information; (9) location of MSDS file and location of hazardous chemical list.

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CONFINED SPACE ENTRY PROCEDURES [11-7]

APPENDIX E

Backfill Receipts – Sand and Stone

Date 6/21/97 PO# 12977-01148

JOHN GUIRE CO.
187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

Driver On 09336

Off _____

Supplies

Customer's Name TICCONI - KENNETH

Address FT. MONMOUTH

Product ROAD BUILDING SAND

Price Per Ton _____

Other Products Always Available

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

Tax _____

Sub Total _____

Del. Chg. _____

TOTAL _____

DATE B. 2537 TIME _____

Gross lb. 20.66

Tare lb. _____

Net lb. _____

TONS

Instructions (LEAD)

Rec'd By _____

Weighter _____

[Signature]

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

CUSTOMER COPY

6/21/97

Date

JOHN GUIRE CO.

187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

9335

Off

Driver On

Customer's Name TICOM (VINE)

Address FT. MAR.

Product White Run Sand

Supplies

**Other Products
Always Available**

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

Price _____

Tax _____

Sub Total _____

Del. Chg. _____

TOTAL _____

Gross lb. 2136
Tare lb. _____
Net lb. TONS

DATE _____ TIME _____

B.2537
(LEAD)

Spec. Instructions _____

Rec'd By _____

Weigher _____

CUSTOMER COPY

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

197-040

JOHN GUIRE CO.

187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

09334

Driver On _____ Off _____

Cust. Phone

Date

Supplies

Customer's Name _____

Address _____

Product _____

Price Per Ton

Price _____

Other Products Always Available

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

Tax _____

Sub Total _____

Del. Chg. _____

TOTAL _____

Gross lb.

Tare lb.

Net lb.

22.01

TONS

DATE

TIME

B.2537
(LEAD)

Special Instructions

Rec'd By

Weigher

D. Parker

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

CUSTOMER COPY

621197
Date

JOHN GUIRE CO.
187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

09333
Driver On _____ Off _____

Customer's Name Team - Vinnal Service
Address FT. MCGUIRE STATION
Price _____
Per Ton _____

Product Wall in Stone
Price _____
Tax _____

DATE _____ TIME _____
Gross lb. 2176
Tare lb. _____
Net lb. _____

Sub Total _____
Del. Chg. _____
TOTAL _____

Other Products Always Available
• Fuel Oil
• Hardware
• Lawn & Garden Supplies
• Mulch
• Top Soil & Fill Dirt
• Wall Stone
• Cobble Stone
• Railroad Ties

Spec. Instructions (LEAD)
Rec'd By [Signature]
Weigher _____

CUSTOMER COPY

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

APPENDIX F

Hazardous Waste Manifests & Unmanifested Waste Reports (NYDEC & NJDEP)

HAZARDOUS WASTE MANIFEST

Form Approved OMB No. 2050-0039 Expires 9-30-96

Please print or type. Do not Staple.

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. NJ 22100209781144719		Manifest Document No. 1144719		2. Page 1 of 1		Information in the shaded areas is not required by Federal Law.			
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703				6. US EPA ID Number PA01A6711A87B		A. State Manifest Document No. NY B8709138		BC 9000 AREA, J. FALLON ATT FORT MONMOUTH, NJ 07703			
4. Generator's Phone (908) 532-6223				7. Transporter 1 (Company Name) HORWITH TRUCKS, INC.		C. State Transporter's ID NJDEPE		D. Transporter's Phone (610) 261-2220			
5. Transporter 2 (Company Name)				8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone			
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107				10. US EPA ID Number NY DP049B3667P		G. State Facility's ID N/A		H. Facility's Phone 716 754-8231			
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)				12. Containers No. Type		13. Total Quantity		14. Unit W/Vol			
a. RQ HAZARDOUS WASTE, SOLID, n.o.s. X 9, NA3077, III (LEAD)				001 CM		31530		P			
b.								EPA 0008 STATE			
c.								EPA STATE			
d.								EPA STATE			
J. Additional Descriptions for Materials Listed Above A/S/L LEAD CONTAMINATED SOIL						K. Handling Codes for Wastes Listed Above					
a						a					
b						b					
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 87468481											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name Jodie Stein for Joe Fallon				Signature Jodie Stein for Joe Fallon				Mo. Day Year 10/10/19			
17. Transporter 1 (Acknowledgement of Receipt of Materials)				Signature Tom Ruck				Mo. Day Year 10/10/19			
18. Transporter 2 (Acknowledgement or Receipt of Materials)				Signature M. Ashab				Mo. Day Year 10/10/19			
19. Discrepancy Indication Space actual recd 31860 lbs Ka change to "T" mod 7-397 item 12 type - DT											
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.				Printed/Typed Name Lusan M ASABHAN				Signature M. Ashab		Mo. Day Year 10/10/19	



Waste Management, Inc.

CWM Chemical Services, Inc.
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Phone 716/754-8231

Federal EPA ID: NYD049836679

DRMO-FORT MONMOUTH
ATTN: MANIFEST SECTION
NJ2210020978
SELFM-DL-EM-HW
FORT MONMOUTH NJ 07703

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-FORT MONMOUTH on 07/02/97 as described on Hazardous Waste Manifest number NYB8709138 Sequence number 01.

Profile Number: BZ0014
CWM Tracking ID: 8146848101
CWM Unit #: 1*0
Disposal Date: 07/08/97

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 87188
07/16/97

For questions please call
our Customer Service Dept.
at (800) 843-3604

Form #WB

Facility Name: **CELLULOSE PAPER**
 Address: **1000 E. 10TH ST. S.W.**
GRAND RAPIDS, MI 49508
 State: **MI**
 EPA ID: **2600000000**
 Waste Code: **1000**

Manifest #: **1110**
 Date: **07-01-97**
 Quantity: **100**
 Description: **CELLULOSE PAPER**

Regulation:

EPA ID: **1000000000**

Regulation:

EPA ID: **1000000000**

Governmental Emergency Response:

DISPOSAL UNIT: **WIP**
 UNIT: **WIP** DESCRIPTION:

WASTE TONNAGE AREA

DESCRIPTION: **CELLULOSE PAPER**

3153

Quantity: **100**

TOTAL

TOTAL

0

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity and will provide or insure that the appropriate disposal method is followed for the particular Hazardous Waste that is shipped for shipment.

Date: **07-01-97**

Customer Signature:

John Stun for Joe Fallon

Carrier Signature:

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Form Approved OMB No. 2050-0039. Expires 9-30-96

Please print or type. Do not Staple.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No.		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal Law.	
3. Generator's Name and Mailing Address ELECTRIC POWER CO OF NY 60 WEST BROADWAY ST NEW YORK, NY 10006						A. State Manifest Document No. NY B8778114			
4. Generator's Phone (212) 512-2222						B. Generator's ID ELECTRIC POWER CO OF NY 60 WEST BROADWAY, NY 10006			
5. Transporter 1 (Company Name) ELECTRIC POWER CO OF NY				6. US EPA ID Number		C. State Transporter's ID 1348-07-PA		D. Transporter's Phone (212) 512-2220	
7. Transporter 2 (Company Name)				8. US EPA ID Number		E. State Transporter's ID			
9. Designated Facility Name and Site Address HOBBS & CO INC 111 W 111 ST NEW YORK, NY 10001						10. US EPA ID Number		F. Transporter's Phone ()	
						G. State Facility's ID N/A			
						H. Facility's Phone (212) 754-8231			
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)						12. Containers No.	13. Total Quantity	14. Unit W/Vol	15. Waste No.
a. ...								P	EPA STATE
b. ...									EPA STATE
c. ...									EPA STATE
d. ...									EPA STATE
J. Additional Descriptions for Materials listed Above						K. Handling Codes for Wastes Listed Above			
a. ...						a	<input type="checkbox"/>	c	<input type="checkbox"/>
b. ...						b	<input type="checkbox"/>	d	<input type="checkbox"/>
15. Special Handling Instructions and Additional Information FACILITY STEPS OBTAINED FOR IDENTIFICATION CHEMICAL PHONE WASH 353 2187 91468530									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name Joseph M. Fallon				Signature <i>Joseph M. Fallon</i>		Mo. Day Year 10/20/97			
17. Transporter 1 (Acknowledgement of Receipt of Materials)				Signature		Mo. Day Year			
Printed/Typed Name Bill Warte				<i>Bill Warte</i>		10/21/97			
18. Transporter 2 (Acknowledgement or Receipt of Materials)				Signature		Mo. Day Year			
Printed/Typed Name				Signature		Mo. Day Year			
19. Discrepancy Indication Space NA; T originally manifested on non-haz. manifest see unmanifested letter dated 7-17-97									
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name EILEEN CARTER				Signature <i>Eileen Carter</i>		Mo. Day Year 07/02/97			

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.



DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 DIVISION OF SOLID & HAZARDOUS MATERIAL
HAZARDOUS WASTE MANIFEST
 P.O. Box 12820, Albany, New York 12212

Please print or type. Do not Staple

Form Approved. OMB No. 2050-0039. Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. 11122100209178114141416		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal Law.					
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703						A. State Manifest Document No. NY B 8778114							
4. Generator's Phone (908) 532-6223						B. Generator's ID C. WOOD AREA, J. FALLON ATT FORT MONMOUTH, NJ 07703							
5. Transporter 1 (Company Name) HORNITH TRUCKS, INC.			6. US EPA ID Number P A D 1 4 6 7 1 4 8 7 8			C. State Transporter's ID TJ48707-PA		D. Transporter's Phone (610) 261-2227					
7. Transporter 2 (Company Name)			8. US EPA ID Number			E. State Transporter's ID		F. Transporter's Phone ()					
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107						10. US EPA ID Number 111101049836679		G. State Facility's ID					
						H. Facility's Phone (716) 754-8231		N/A					
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.	
a. RQ HAZARDOUS WASTE, SOLID, n.o.s. X 9.HA3077, III (LEAD)						001 CM		46910		P		EPA 0008 STATE	
b.												EPA STATE	
c.												EPA STATE	
d.												EPA STATE	
J. Additional Descriptions for Materials listed Above A) S/E SOIL W/ LEAD						K. Handling Codes for Wastes Listed Above							
a						c		a		c			
b						d		b		d			
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387													
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and a classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economical, practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.													
Printed/Typed Name Joseph M. Fallon					Signature Joseph M Fallon					Mo. Day Year 07/21/9			
17. Transporter 1 (Acknowledgement of Receipt of Materials) Printed/Typed Name B. SWARTZ					Signature Bell Swartz					Mo. Day Year			
18. Transporter 2 (Acknowledgement or Receipt of Materials) Printed/Typed Name					Signature					Mo. Day Year			
19. Discrepancy Indication Space													
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.													
Printed/Typed Name					Signature					Mo. Day Year			

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Federal EPA ID: NYD049836679

DRMO-FORT MONMOUTH
ATTN: MANIFEST SECTION
NJ2210020978
SELFM-DL-EM-HW
FORT MONMOUTH NJ 07703

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-FORT MONMOUTH on 07/02/97 as described on Hazardous Waste Manifest number NYB8778114 Sequence number 01.

Profile Number: BZ0014
CWM Tracking ID: 8146847901
CWM Unit #: 1*0
Disposal Date: 08/12/97

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 90478
08/14/97

For questions please call
our Customer Service Dept
at (800) 843-3604



Generator

EPA ID: NJ2210020978
US ARMY COM ELECT COMD
C. WOOD AREA, J. FALLON
ATTN: SELFM-PW-EV
FORT MONMOUTH NJ 07703 0000
ATTN: JOE FALLON

Worksheet#: 14446
Manifest#: NYB8778114
Ship Date: 7/01/97
Purchase Order:
Project Code:

Destination

EPA ID: NY0049836679 CWM CHEMICAL SERVICES, INC.

Transporter

EPA ID: PAD146714878 HORWITH TRUCKS, INC.

Overnight: N Emergency Response: N

DISPOSAL UNITS UOM	WIP/ APPRV	DESCRIPTION	GROSS TYPE WASTE AREA
1	DUMPTRCMP	253858 LEAD CONTAMINATED SOIL MDCBZ0014	14142 FS 46910
Manifest PG/LN: 1A			
TOTAL			TOTAL
-----			-----
1			14142 46910

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity and will provide or assure that the ultimate disposal method is followed for the particular Hazardous Waste that is planned for shipment.

Date: 7/1/97

Customer Signature: Joe Fallon



Advanced Environmental Technology Corporation

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of	
3. Generator's Name and Mailing Address						A. Non-hazardous Manifest Document Num Z0004898	
4. Generator's Phone ()						B. State Generator's ID	
5. Transporter 1 Company Name			6. US EPA ID Number			C. State Trans. ID 7548707	
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone ()	
9. Designated Facility Name and Site Address						E. State Trans. ID	
10. US EPA ID Number						F. Transporter's Phone ()	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers	13. Total Quantity
HM						No.	Type
a. HAZARDOUS WASTE POLYMERIZED LINE							EST 46,910
b.							
c.							
d.							
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above	
SOIL						a.	c.
b.						b.	d.
15. Special Handling Instructions and Additional Information							
PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 453-2357 SAND 378819 81468530							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.							
Printed/Typed Name		Signature				Month Day	
Jodie Stein for Joe Fallon		Jodie Stein for Joe Fallon				10/7/91	
Printed/Typed Name		Signature				Month Day	
Bill SWARTZ		Bill Swartz				10/7/91	
Printed/Typed Name		Signature				Month Day	
19. Discrepancy Indication Space							
actual record 47620P other 12 type - ST							
20. Facility Owner or Operator. Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19						Month Day	
Printed/Typed Name		Signature				Month Day	
Eileen Carter		Eileen Carter				10/14/91	

In case of an emergency or spill, immediately call AETC (800) 420-2382.

GENERATOR

TRANSPORTER

FACILITY



Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NJ 2210020978				Manifest Document No. 14446		2. Page 1 of 1		
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703						A. Non-hazardous Manifest Document Num Z0004898				
4. Generator's Phone (908) 532-6223						B. State of NJ, J. FALLON AT FORT MONMOUTH, NJ 07703				
5. Transporter 1 Company Name HORWITH TRUCKS, INC.			6. US EPA ID Number PA 146714878			C. State Trans. ID NJ 418707				
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone (610) 261-222				
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107			10. US EPA ID Number NY 1049836679			E. State Trans. ID				
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM a. CHEMICALS, n.o.s. DOT NON-REGULATED, NONE						12. Containers No. Type 001 CM		13. Total Quantity Est 46910	14. Unit P	15. Waste No. NONE
J. Additional Descriptions for Materials Listed Above S/- SOIL						K. Handling Codes for Wastes Listed Above				
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 SAN# 378814										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.										
Printed/Typed Name Jodie Stein for Joe Fallon						Signature Jodie Stein for Joe Fallon		Month Day 10/19/11		
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials						Signature Bill Swartz		Month Day 10/19/11	
	18. Transporter 2 Acknowledgement of Receipt of Materials						Signature		Month Day	
FACILITY	19. Discrepancy Indication Space									
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.						Signature		Month Day	

In case of an emergency or spill, immediately call AETC (800) 426-2382.



AETS
ADVANCED ENVIRONMENTAL
TECHNICAL SERVICES

EPA ID: 111-111-000000
 111-111-000000
 111-111-000000
 111-111-000000
 111-111-000000
 111-111-000000

Work sheet # 111-111-000000
 Manifest # 111-111-000000
 Date 07-01-97
 From Joe Fallon
 To Joe Fallon

Destination
 EPA ID: 111-111-000000 CHEMICAL SERVICES, INC.

Transporter
 EPA ID: 111-111-000000 CHEMICAL SERVICES, INC.

Overnight/Emergency Response: 11

DISPOSAL SITE CODE	HWP APPR#	DESCRIPTION	CRUDE OIL WASTE AREA
1	253858	LEAD CONTAMINATED SOIL	0.05
		MOBILE	
Manifest PG 01: 1A			
TOTAL			TOTAL
-----			-----
			0

This is to document that the facility designated above is authorized by appropriate State and/or Federal agencies, has the capacity and will provide or assure that the off-site disposal method is sufficient for the particular materials that are planned for shipment.

Date: 07-01-97

Customer Signature: *Joe Fallon*

AETS Signature: *TJ*



DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101



REPLY TO
ATTENTION OF
Directorate of Public Works

August 8, 1997

State of New Jersey
Department of Environmental Protection
Division of Solid and Hazardous Waste
ATTN: Mrs. Aneeta Sukheja
Manifest Section, CN 414
Trenton, New Jersey 08625-0414

RE: Unmanifested Waste Report

Dear Mrs. Sukheja:

Pursuant to N.J.A.C. 7:26-9.1(c)1ii(2)(F) the following information is provided to document the disposal of lead contaminated soil from the U.S. Army Communications Electronics Command, Fort Monmouth, New Jersey.

FACILITY INFORMATION:

Facility EPA ID #: NYD049836679
Facility Name: CWM Chemical Services, Inc.
Mailing Address: 1550 Balmer Road
P.O. Box 200
Model City, NY 14107

Facility Address: CWM Chemical Services, Inc.
1550 Balmer Road
Model City, NY 14107

Date Waste Received: July 02, 1997

GENERATOR INFORMATION:

Generator EPA ID.#: NJ2210020978
Generator Name: U.S. Army Communications Electronics Command
Generator Address: Directorate of Public Works
Building 173, ATTN: SELFM-PW-EV
Fort Monmouth, NJ 07703

TRANSPORTER INFORMATION:

Transporter EPA I.D.#: PAD146714878
Transporter Name: Horwith Trucks, Inc.
Transporter Address: Route 329, Box 7
Northampton, PA 18067

Quantity and Description of Waste: 46,910 pounds, lead contaminated soil.

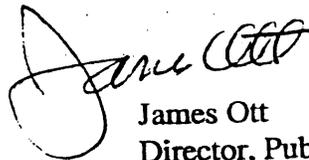
Method of Treatment: Stabilization and Subtitle C Secure Landfill.

Explanation Why Waste Received Unmanifested: Referenced soils were shipped under a Non-Hazardous Waste Manifest # Z0004898 (see attachment # 1). Prior to offsite shipment, soils were sampled by generator personnel following NJDEP sampling protocols. One sample per every 20 cubic yards of soil was collected for laboratory analysis. Samples were tested at Fort Monmouth's NJDEP certified laboratory (certification # 13461) for lead under TCLP methodologies. Sample results were less than 5 mg/kg for the referenced soil. In order to obtain a higher level of waste treatment technology and to reduce the Army's long term liability, the U.S. Army Fort Monmouth opted to send the non-hazardous waste soil to a fully permitted part B Treatment, Storage and Disposal Facility (TSDF). Upon receipt at the referenced TSDF, samples were collected for lead analysis under TCLP methodologies. Facility results (6.43 mg/kg) were slightly higher than the RCRA lead standard of 5 mg/kg. As part of its operating permit requirements, the receiving facility is mandated to use its own sampling results when retesting of a waste stream is initiated. Based upon their data, the incoming soils needed to be received as a hazardous waste (waste code D008). A new hazardous waste manifest # NYB8778114 (see attachment # 2) was completed to replace the original non-hazardous waste manifest.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Should you have any questions regarding this disposal action, please contact Mr. Joseph Fallon. He can be reached at the following telephone number: (908) 532-6223.

Sincerely,



James Ott
Director, Public Works



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

July 17, 1997

Mr. Robert McCarty, Supervisor Data Management Section
New York State Department of Environmental Conservation
P. O. Box 12820
Albany, NY 12212

RE: Unmanifested Waste Report

Dear Mr. McCarty:

Pursuant to NYCRR 372.4(d), below is an explanation of hazardous waste received at CWM Chemical Services, Inc. without a New York State Hazardous Waste Manifest. As required, a NYSDEC On-site Monitor was contacted for confirmation that the waste was acceptable for receipt.

TSD Facility: CWM Chemical Services, Inc., 1550 Balmer Rd., Model City, NY 14107
EPA ID #: NYD049836679
Date Received: 07/02/97

Generator: U.S. Army Comm Electronics Command, Fort Monmouth, NJ 07703
EPA ID#: NJ2210020978

Transporter: Horwith Trucks, Inc.
EPA ID#: PAD146714878
License Plate #: 259 (truck number)

Waste Description: RQ, Hazardous Waste Solid, n.o.s. (lead), 9, NA3077, III
Waste Code: D008

Quantity Received: 46910 lbs.
Disposal Method: stabilize and subtitle C landfill

Reason: The generator's analysis showed the waste to be non-hazardous. CWM's analysis of a composite sample of three bulk loads showed leachable lead at 6.43 mg/L. Rather than try to determine who's sampling strategy and testing was more representative, the generator agreed that the waste should be identified and managed as D008.



If you require additional information, please feel free to contact me at (716) 754-0336.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Very truly yours,
CWM CHEMICAL SERVICES, INC.


Jill Knickerbocker
Technical Manager

cc: file DOR 07/02/97 - 81468530
~~Generator~~
Generator State
Transporter
On-Site DEC Monitor
E. Dassatti NYSDEC/Albany, NY
J. Reidy USEPA/New York, NY
J. Devald NCHD/Niagara Falls, NY
J. Knickerbocker/EMD CWM/Model City, NY
A. Davis/Operations CWM/Model City, NY



STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

Site CW-4

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Form Approved: OMB No. 2050-0039. Expires 9-30-96

Please print or type. Do not Staple.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. NJ 2210020978114447		Manifest Document No. 14447		2. Page 1 of 1		Information in the shaded areas is not required by Federal Law.					
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703				A. State Manifest Document No. NY B 8778123		B. Generator's Address CHARLES WOOD AREA, J. FALLON ATT FORT MONMOUTH, NJ 07703							
4. Generator's Phone (908) 532-6223				6. US EPA ID Number PA D 146714878		C. State Transporter's ID TZ15906-PA		D. Transporter's Phone (610) 261-2220					
5. Transporter 1 (Company Name) HORWITH TRUCKS, INC.				8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone					
7. Transporter 2 (Company Name)				10. US EPA ID Number		G. State Facility's ID N/A		H. Facility's Phone (716) 754-8231					
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107				11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number) a. RQ HAZARDOUS WASTE, SOLID, n.o.s. X 9, NA3077, III (LEAD)		12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		15. Waste No. EPA 0008 STATE	
16. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 81468471				17. Generator's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.		18. Handling Codes for Wastes Listed Above		19. Discrepancy Indication Space Ka-T originally manifested on non-haz manifest see unmanifested letter dated 7/74		20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.		21. Facility Owner or Operator Printed/Typed Name EILEEN CARTER Signature Eileen Carter Mo. Day Year 07 01 97	

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.



STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Form Approved OMB No. 2050-0039, Expires 9-30-96

Please print or type. Do not Staple.

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. 11112121101012101917181114141417		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal Law.	
3. Generator's Name and Mailing Address US MPH FOR ELECT COND CHARLES MOOD AREA FORT MONMOUTH NJ 07703		5. Transporter 1 (Company Name) HORNWELL TRUCKS, INC.		6. US EPA ID Number FAD11467114918		A. State Manifest Document No. NY B 8778123		B. Generator's ID CHARLES MOOD AREA, J. FALLON ATT FORT MONMOUTH, NJ 07703	
4. Generator's Phone (908) 532-5223		7. Transporter 2 (Company Name)		8. US EPA ID Number		C. State Transporter's ID T215906-PA		D. Transporter's Phone (610) 261-2220	
9. Designated Facility Name and Site Address CWH CHEMICAL SERVICES, INC. 1550 BAIHER ROAD HOBOKEN, NJ 07030		10. US EPA ID Number 111101049181316181719		E. State Transporter's ID		F. Transporter's Phone ()		G. State Facility's ID N/A	
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)		12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.	
a. RR HAZARDOUS WASTE, SOLID, H.O.S. P.11A3077, III (LEAD)		001 CM		35480		P		EPA D008 STATE	
b.								EPA STATE	
c.								EPA STATE	
d.								EPA STATE	
J. Additional Descriptions for Materials listed Above ASBESTOSITE LEAD		K. Handling Codes for Wastes Listed Above		a		c			
b		d		b		d			
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon				Mo. Day Year 07/10/19	
17. Transporter 1 (Acknowledgement of Receipt of Materials) Printed/Typed Name Charles M. Fallon				Signature Charles M. Fallon				Mo. Day Year 07/10/19	
18. Transporter 2 (Acknowledgement of Receipt of Materials) Printed/Typed Name Charles M. Fallon				Signature Charles M. Fallon				Mo. Day Year 07/10/19	
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name				Signature				Mo. Day Year	



LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: US Army EPA ID # NJ220020978 State Manifest No. NYB 877810

- 1. If waste is a wastewater (see 40 CFR 268.2) place "w" next to the applicable code(s)
2. If waste is subject to any California List restriction enter the letter from below next to each restriction that is applicable. HOC, PCBs, Metals, Acid

3. CODES WITH SUBCATEGORIES (place appropriate letter from section 9 before each code that applies) (See 40 CFR 268 for details)

- D001 Hi-TOC D003 Unexp Ord. Emg K006 Hydrated P047 Salts P092 Hi Inc./RMERC Res.
D001 < 10% TOC-CWA D003 Other Reactives K006 Anhydrous P047 Nonsalts U151 Lo RMERC Res.
D001 < 10% TOC-NonCWA D006 Batteries K069 Calcium Sulfate P065 Lo Inc. Res. U151 Lo Not RMERC Res.
D002 Non-CWA D008 Lead acid batteries K069 Not Calcium Sulfate P065 Lo RMERC Res. U151 Hi Hg
D002 CWA D009 Organic Hg > 260ppm K071 Rmerc Res. P065 Not Inc./RMERC Res. U240 2, 4 D
D003 Reactive Cyanide D009 Inorg. Hg > 260 K071 Not Rmerc Res. P065 Hi Inc./RMERC Res. U240 2, 4 esters & Salts
D003 Reactive Sulfide D009 Hg < 260 K106 Lo Rmerc Res. P092 Lo Inc. Res.
D003 Explosive F025 Light ends K106 Not Rmerc Res. P092 Lo RMERC Res.
D003 Water Reactives F025 Spent filter K106 > 260 ppm Hg P092 Not Inc./RMERC Res.

The subcategory for D018-D043 waste is "treated in nonCWA/nonSDWA facility" unless the following box is checked: [] "treated in CWA/SDWA facility"

4. COMMON CODES (Place appropriate letter from section 9 before each code that applies)

- D004 D005 D006 D007 D008 D009 D010 D011 D012 D013 D014 D015 D016 D017 D018
D020 D021 D022 D023 D024 D025 D026 D027 D028 D029 D030 D031 D032 D033 D034
D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F004 F005 U002 U003
U007 U044 U061 U072 U080 U108 U117 U122 U123 U136 U154 U188 U213 U220 U226
P012 P030 P051 P098 P105 P205 F006 F007 F008 F009 F010 F011 F012 F019 F039

ADDITIONAL CODES (Enter all codes not identified above which are associated with waste)

Table with 3 columns: 5. USEPA HAZARDOUS WASTE CODE(S), 6. TREATMENT STANDARDS FOR NON-PHASE II STATES (INDICATE THE APPLICABLE TREATMENT STANDARD 268.41, 268.43 OR SPECIFIED TECHNOLOGY BELOW), 7. HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM BELOW

To identify F039, or UHCs managed in non-CWA, us the "F039/Underlying Hazardous Constituents Form" provided (CWM-2004) and check here: []
If no UHCs are present upon generation check here: [] Check here if disposal facility will check for all UHCs [] (i.e. no UHC form required)
To list additional EPA waste code(s), use the supplemental sheet and check here: [] In lieu of supplemental sheet you may use multiple copies of this form.

8. SOLVENT CONSTITUENTS (F001 - F005) Check here if disposal facility will check for all spent solvents

- Acetone Benzene n-Butyl alcohol Carbon disulfide
Carbon Tetrachloride Chlorobenzene O-Cresol Cresois (m&p)
Cyclohexanone o-Dichlorobenzene 2-Ethoxyethanol Ethyl acetate
Ethyl benzene Ethyl ether Isobutanol Methanol
Methylene chloride Methyl ethyl ketone Methyl isobutyl ketone Nitrobenzene
2-Nitropropane Pyridine Tetrachloroethylene Toluene
1,1,1 Trichloroethane 1, 1, 2-Trichloroethane 1, 1, 2-Trichloro, 1, 2, 2-trifluoroethane Trichloroethylene
Trichloromonofluoromethane Xylenes

9. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. Or [] RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d)
[] For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
B.1 RESTRICTED WASTE TREATMENT TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so comply with the performance levels specified in 40 CFR Part 268, Subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
B.2 RESTRICTED WASTE FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
B.3 GOOD FAITH AND ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264, Subpart O, or 40 CFR Part 265, Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are a significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.
[] For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment and disposal facility named above." "I certify under penalty of law that I have personally examined and am familiar with the waste through analysis and testing or thorough knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: Joseph M. Fallon
Title: Environmental Scientist

Date: 7/1/97



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Federal EPA ID: NYD049836679

DRMO-FORT MONMOUTH
ATTN: MANIFEST SECTION
NJ2210020978
SELFM-DL-EM-HW
FORT MONMOUTH NJ 07703

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-FORT MONMOUTH on 07/02/97 as described on Hazardous Waste Manifest number NYB8778123 Sequence number 01.

Profile Number: BZ0014
CWM Tracking ID: 8146853001
CWM Unit #: 1*0
Disposal Date: 08/12/97

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 90479
08/14/97

For questions please call
our Customer Service Dept
at (800) 843-3604



Generator

EPA ID: NJ2210020978
US ARMY COM ELECT COMD
C.WOOD AREA, J. FALLON
ATTN: SELFM-PW-EV
FORT MONMOUTH NJ 07703 0000
ATTN: JOE FALLON

Worksheet#: 14447
Manifest#: NYB8778123
Ship Date: 7/01/97
Purchase Order:
Project Code:

Destination

EPA ID: NYD049836679 CWM CHEMICAL SERVICES, INC.

Transporter

EPA ID: PAD146714878 HORWITH TRUCKS, INC.

Overnight:N Emergency Response:N

DISPOSAL UNITS UOM	WIP/ APPRV DESCRIPTION	GROSS TYPE WASTE AREA
1	DUMPTRCMP 253858 LEAD CONTAMINATED SOIL MDCBZ0014	3712 FS 36480
TOTAL		TOTAL
----- 1		----- 3712 36480

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity and will provide or assure that the ultimate disposal method is followed for the particular Hazardous Waste that is planned for shipment.

Date: 7/1/97

Customer Signature: Joe Fallon

A E T S Signature:



Advanced Environmental Technology Corporation

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of	
3. Generator's Name and Mailing Address						A. Non-hazardous Manifest Document Num Z0004897	
4. Generator's Phone ()						B. State Generator's ID	
5. Transporter 1 Company Name				6. US EPA ID Number		C. State Trans. ID TZ15910	
7. Transporter 2 Company Name				8. US EPA ID Number		D. Transporter's Phone ()	
9. Designated Facility Name and Site Address						E. State Trans. ID	
10. US EPA ID Number						F. Transporter's Phone ()	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers	
HM						No. Type	
a. HAZARDOUS WASTE NON-REGULATED						13. Total Quantity	
						14. Unit Wt/Vol	
						1. Waste No.	
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above	
B20014						a.	
						b.	
						c.	
						d.	
15. Special Handling Instructions and Additional Information							
PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 800-471-4715							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.							
Printed/Typed Name						Signature	
Jodie Stein for Joe Fallon						Jodie Stein for Joe Fallon 10/20/11	
Printed/Typed Name						Signature	
Charles Stecker						Charles R Stecker 10/20/11	
Printed/Typed Name						Signature	
19. Discrepancy Indication Space						Month Day	
actual rec'd 35820P						Item 12 type -BT	
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.							
Printed/Typed Name						Signature	
EILEEN CARTER						Eileen Carter 10/20/11	

in case of an emergency or spill, immediately call 800-471-4715

GENERATOR

TRANSPORTER

FACILITY



Advanced Environmental Technology Corporation

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ J1 21 21 11 01 01 21 01 91 71 81 Manifest Document No. 11 41 41 41 7

2. Page 1 of 1

3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703

A. Non-hazardous Manifest Document Number Z0004897

B. State Generator's Name and Address J. FALLON AT FORT MONMOUTH, NJ 07703

4. Generator's Phone (908) 532-6223

5. Transporter 1 Company Name HORWITH TRUCKS, INC. 6. US EPA ID Number PAID 11 41 61 71 11 41 81 71 8

C. State Trans. ID TZ159X

7. Transporter 2 Company Name 8. US EPA ID Number

D. Transporter's Phone (610) 261-2222

9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107

E. State Trans. ID

F. Transporter's Phone () G. State Facility's ID N/

H. Facility's Phone (716) 754-8231

Table with 5 columns: a, b, c, d, e. Row 1: a. CHEMICALS, n.o.s. DOT NON-REGULATED, NONE. 12. Containers No. 001, Type CM, 13. Total Quantity 36480, 14. Unit Wt/Vol P, 15. Waste No. NONE.

J. Additional Descriptions for Materials Listed Above S/- SOIL K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 SAN# 378815

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.

Printed/Typed Name Jodie Stein for Joe Fallon Signature Jodie Stein for Joe Fallon Month Day 10/7/01

17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Charles Stecker Signature Charles R. Stecker Month Day 10/10/01

18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature Month Day

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name Signature Month Day

In case of an emergency or spill, immediately call AETC (800) 426-2382.

GENERATOR

TRANSPORTER

FACILITY



AETS

ADVANCED ENVIRONMENTAL
TECHNICAL SERVICES

Bill to: President

Invoice No: 800102019

Date: 7/1/97

Bill to: [unclear]

Customer: [unclear]

Invoice No: [unclear]

City: [unclear]

Invoice No: [unclear]

County: [unclear]

Invoice No: [unclear]

State: [unclear]

Invoice No: [unclear]

City: [unclear]

Invoice No: [unclear]

State: [unclear]

Destination:

EPA ID: [unclear]

Transporter:

EPA ID: [unclear]

Overnight: [unclear]

DISPOSAL UNITS UOM	MIF/ APPRV	DESCRIPTION	GROSS TARE WASTE AREA
1	DUMPTCRP	253858 LEAD CONTAMINATED SOIL M00088097	0.15
TOTAL			TOTAL
1			0

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity and will provide or assure that the ultimate disposal method is followed for the particular Hazardous Waste that is planned for shipment.

Date: 7-1-97

Customer Signature: *Joel Stein for Joe Pullen*



DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101



REPLY TO
ATTENTION OF
Directorate of Public Works

August 8, 1997

State of New Jersey
Department of Environmental Protection
Division of Solid and Hazardous Waste
ATTN: Mrs. Aneeta Sukheja
Manifest Section, CN 414
Trenton, New Jersey 08625-0414

RE: Unmanifested Waste Report

Dear Mrs. Sukheja:

Pursuant to N.J.A.C. 7:26-9.1(c)1ii(2)(F) the following information is provided to document the disposal of lead contaminated soil from the U.S. Army Communications Electronics Command, Fort Monmouth, New Jersey.

FACILITY INFORMATION:

Facility EPA I.D #: NYD049836679
Facility Name: CWM Chemical Services, Inc.
Mailing Address: 1550 Balmer Road
P.O. Box 200
Model City, NY 14107

Facility Address: CWM Chemical Services, Inc.
1550 Balmer Road
Model City, NY 14107

Date Waste Received: July 02, 1997

GENERATOR INFORMATION:

Generator EPA I.D.#: NJ2210020978
Generator Name: U.S. Army Communications Electronics Command
Generator Address: Directorate of Public Works
Building 173, ATTN: SELFM-PW-EV
Fort Monmouth, NJ 07703

TRANSPORTER INFORMATION:

Transporter EPA I.D.#: PAD146714878
Transporter Name: Horwith Trucks, Inc.
Transporter Address: Route 329, Box 7
Northampton, PA 18067

Quantity and Description of Waste: 36,480 pounds, lead contaminated soil.

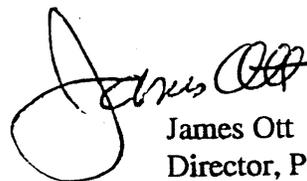
Method of Treatment: Stabilization and Subtitle C Secure Landfill.

Explanation Why Waste Received Unmanifested: Referenced soils were shipped under a Non-Hazardous Waste Manifest # Z0004897 (see attachment # 1). Prior to offsite shipment, soils were sampled by generator personnel following NJDEP sampling protocols. One sample per every 20 cubic yards of soil was collected for laboratory analysis. Samples were tested at Fort Monmouth's NJDEP certified laboratory (certification # 13461) for lead under TCLP methodologies. Sample results were less than 5 mg/kg for the referenced soil. In order to obtain a higher level of waste treatment technology and to reduce the Army's long term liability, the U.S. Army Fort Monmouth opted to send the non-hazardous waste soil to a fully permitted part B Treatment, Storage and Disposal Facility (TSDF). Upon receipt at the referenced TSDF, samples were collected for lead analysis under TCLP methodologies. Facility results (6.43 mg/kg) were slightly higher than the RCRA lead standard of 5 mg/kg. As part of its operating permit requirements, the receiving facility is mandated to use its own sampling results when retesting of a waste stream is initiated. Based upon their data, the incoming soils needed to be received as a hazardous waste (waste code D008). A new hazardous waste manifest # NYB8778123 (see attachment # 2) was completed to replace the original non-hazardous waste manifest.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Should you have any questions regarding this disposal action, please contact Mr. Joseph Fallon. He can be reached at the following telephone number: (908) 532-6223.

Sincerely,



James Ott
Director, Public Works



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

July 17, 1997

Mr. Robert McCarty, Supervisor Data Management Section
New York State Department of Environmental Conservation
P. O. Box 12820
Albany, NY 12212

RE: Unmanifested Waste Report

Dear Mr. McCarty:

Pursuant to NYCRR 372.4(d), below is an explanation of hazardous waste received at CWM Chemical Services, Inc. without a New York State Hazardous Waste Manifest. As required, a NYSDEC On-site Monitor was contacted for confirmation that the waste was acceptable for receipt.

TSD Facility: CWM Chemical Services, Inc., 1550 Balmer Rd., Model City, NY 14107
EPA ID #: NYD049836679
Date Received: 07/02/97

Generator: U.S. Army Comm Electronics Command, Fort Monmouth, NJ 07703
EPA ID#: NJ2210020978

Transporter: Horwith Trucks, Inc.
EPA ID#: PAD146714878
License Plate #: 511 (truck number)

Waste Description: RQ, Hazardous Waste Solid, n.o.s. (lead), 9, NA3077, III
Waste Code: D008
Quantity Received: 36480 lbs.
Disposal Method: stabilize and subtitle C landfill
Reason:

The generator's analysis showed the waste to be non-hazardous. CWM's analysis of a composite sample of three bulk loads showed leachable lead at 6.43 mg/L. Rather than try to determine who's sampling strategy and testing was more representative, the generator agreed that the waste should be identified and managed as D008.



If you require additional information, please feel free to contact me at (716) 754-0336.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Very truly yours,
CWM CHEMICAL SERVICES, INC.

Jill Knickerbocker

Jill Knickerbocker
Technical Manager

cc: file DOR 07/02/97 - 81468471

~~Generator~~

Generator State

Transporter

On-Site DEC Monitor

E. Dassatti

NYSDEC/Albany, NY

J. Reidy

USEPA/New York, NY

J. Devald

NCHD/Niagara Falls, NY

J. Knickerbocker/EMD

CWM/Model City, NY

A. Davis/Operations

CWM/Model City, NY

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

Site CW

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Form Approved OMB No. 2050-0039. Expires 3-30-96

Please print or type. Do not Staple.

In case of emergency or spill immediately call the National Response Center (800) 424-9802 and the N.Y. Dept. of Environmental Conservation (518) 457-7362.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. NJ 12 12 11 10 10 12 10 19 17 18 11 14 14 15 10		Manifest Document No. 1	2. Page 1 of 1	Information in the shaded areas is not required by Federal Law.	
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703				A. State Manifest Document No. NY B 8778276		B. Generator's Name CHARLES WOOD AREA, J. FALLON ATT FORT MONMOUTH, NJ 07703	
4. Generator's Phone (908) 532-6223		5. Transporter 1 (Company Name) HORWITH TRUCKS, INC.		6. US EPA ID Number PA 10 14 16 17 11 14 18 17 18		C. State Transporter's ID TV34339-PA	
7. Transporter 2 (Company Name)		8. US EPA ID Number		E. State Transporter's ID		D. Transporter's Phone (610) 261-2220	
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107				10. US EPA ID Number NY 10 14 19 18 13 16 16 17 19		F. Transporter's Phone ()	
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)				12. Containers No. Type		13. Total Quantity	
a. RQ HAZARDOUS WASTE, SOLID, n.o.s. X 9, NA3077, III (LEAD)				001 CM		42550 P	
b.						EPA Waste No. STATE	
c.						EPA STATE	
d.						EPA STATE	
J. Additional Descriptions for Materials listed Above A15/- SOIL W/LEAD				K. Handling Codes for Wastes Listed Above			
a.				a. <input type="checkbox"/> c. <input type="checkbox"/>			
b.				b. <input type="checkbox"/> d. <input type="checkbox"/>			
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 814624A							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon		Mo. Day Year 07 10 1997	
17. Transporter 1 (Acknowledgement of Receipt of Materials)				Signature		Mo. Day Year	
Printed/Typed Name J. Fallon				Signature		Mo. Day Year	
18. Transporter 2 (Acknowledgement or Receipt of Materials)				Signature		Mo. Day Year	
Printed/Typed Name				Signature		Mo. Day Year	
19. Discrepancy Indication Space Ka: I originally manifested on non-haz. manifest see w/manifested letter dated 7/7							
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.				Signature Eileen Carter		Mo. Day Year 07 02 98	
Printed/Typed Name EILEEN CARTER				Signature		Mo. Day Year	

Generator Name: US ARMY EPA ID # NJ221 0020978 State Manifest No. NYB 877827

- 1. If waste is a wastewater (see 40 CFR 268.2) place "w" next to the applicable code(s)
2. If waste is subject to any California List restriction enter the letter from below next to each restriction that is applicable. HOC, PCBs, Metals, Acid

3. CODES WITH SUBCATEGORIES (place appropriate letter from section 9 before each code that applies) (See 40 CFR 268 for details)

- D001 Hi-TOC, D001 < 10% TOC-CWA, D001 < 10% TOC-NonCWA, D002 Non-CWA, D002 CWA, D003 Reactive Cyanide, D003 Reactive Sulfide, D003 Explosive, D003 Water Reactives, D003 Unexp Ord. Emg, D003 Other Reactives, D006 Batteries, D008 Lead acid batteries, D009 Organic Hg > 260ppm, D009 Inorg. Hg > 260, D009 Hg < 260, F025 Light ends, F025 Spent filter, K006 Hydrated, K006 Anhydrous, K069 Calcium Sulfate, K069 Not Calcium Sulfate, K071 Rmerc Res., K071 Not Rmerc Res., K106 Lo Rmerc Res., K106 Not Rmerc Res., K106 > 260 ppm Hg, P047 Salts, P047 Nonsalts, P065 Lo Inc. Res., P065 Lo RMERC Res., P065 Not Inc./RMERC Res., P065 Hi Inc./RMERC Res., P092 Lo Inc. Res., P092 Lo RMERC Res., P092 Not Inc./RMERC Res., P092 Hi Inc./RMERC Res., P092 Hi Inc./RMERC Res., U151 Lo RMERC Res., U151 Lo Not RMERC Res., U151 Hi Hg, U240 2, 4 D, U240 2, 4 esters & Salts

The subcategory for D018-D043 waste is "treated in nonCWA/nonSDWA facility" unless the following box is checked: [] "treated in CWA/SDWA facility"

4. COMMON CODES (Place appropriate letter from section 9 before each code that applies)

- D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D036, D037, D038, D039, D040, D041, D042, D043, F001, F002, F003, F004, F005, U002, U003, U007, U044, U061, U072, U080, U108, U117, U122, U123, U136, U154, U188, U213, U220, U226, P012, P030, P051, P098, P105, P205, F006, F007, F008, F009, F010, F011, F012, F019, F039

ADDITIONAL CODES (Enter all codes not identified above which are associated with waste)

Table with 3 columns: 5. USEPA HAZARDOUS WASTE CODE(S), 6. TREATMENT STANDARDS FOR NON-PHASE II STATES (INDICATE THE APPLICABLE TREATMENT STANDARD 268.41, 268.43 OR SPECIFIED TECHNOLOGY BELOW), 7. HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM BELOW

To identify F039, or UHCs managed in non-CWA, us the "F039/Underlying Hazardous Constituents Form" provided (CWM-2004) and check here: []
If no UHCs are present upon generation check here: [] Check here if disposal facility will check for all UHCs [] (i.e. no UHC form required)
To list additional EPA waste code(s), use the supplemental sheet and check here: [] In lieu of supplemental sheet you may use multiple copies of this form.

8. SOLVENT CONSTITUENTS (F001 - F005) Check here if disposal facility will check for all spent solvents

- Acetone, Carbon Tetrachloride, Cyclohexanone, Ethyl benzene, Methylene chloride, 2-Nitropropane, 1,1,1 Trichloroethane, Trichloromonofluoromethane, Benzene, Chlorobenzene, o-Dichlorobenzene, Ethyl ether, Methyl ethyl ketone, Pyridine, 1, 1, 2-Trichloroethane, Xylenes, n-Butyl alcohol, O-Cresol, 2-Ethoxyethanol, Isobutanol, Methyl isobutyl ketone, Tetrachloroethylene, 1, 1, 2-Trichloro, 1, 2, 2-trifluoroethane, Carbon disulfide, Cresois (m&p), Ethyl acetate, Methanol, Nitrobenzene, Toluene, Trichloroethylene

9. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

A. Or [] RESTRICTED WASTE REQUIRES TREATMENT

This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d)
For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

B.1 RESTRICTED WASTE TREATMENT TO PERFORMANCE STANDARDS

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.3 GOOD FAITH AND ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264, Subpart O, or 40 CFR Part 265, Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.

For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

"I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage and disposal facility named above." "I certify under penalty of law that I have personally examined and am familiar with the waste through analysis and testing or thorough knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: Joseph M. Fallon
Title: Environmental Scientist

Date: 7/1/97



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Federal EPA ID: NYD049836679

DRMO-FORT MONMOUTH
ATTN: MANIFEST SECTION
NJ2210020978
SELFM-DL-EM-HW
FORT MONMOUTH NJ 07703

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-FORT MONMOUTH on 07/02/97 as described on Hazardous Waste Manifest number NYB8778276 Sequence number 01.

Profile Number: BZ0014
CWM Tracking ID: 8146847101
CWM Unit #: 1*0
Disposal Date: 08/12/97

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 90477
08/14/97

For questions please call
our Customer Service Dept
at (800) 843-3604



Generator

EPA ID: NJ2210020978
US ARMY COM ELECT COMD
C. WOOD AREA, J. FALLON
ATTN: SELFM-PW-EV
FORT MONMOUTH NJ 07703 0000
ATTN: JOE FALLON

Worksheet#: 14450
Manifest#: NYB8778276
Ship Date: 7/01/97
Purchase Order:
Project Code:

Destination

EPA ID: NYD049836679 CWM CHEMICAL SERVICES, INC.

Transporter

EPA ID: PAD146714878 HORWITH TRUCKS, INC.

Overnight:N Emergency Response:N

DISPOSAL UNITS UOM	WIP/ APPRV DESCRIPTION	GROSS TYPE WASTE AREA
1	DUMPTRCMP 253858 LEAD CONTAMINATED SOIL MDCBZ0014	2782 FS 42550
Manifest PG/LN: 1A		
TOTAL		TOTAL
-----		-----
1		2782 42550

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity and will provide or assure that the ultimate disposal method is followed for the particular Hazardous Waste that is planned for shipment.

Date: 7/1/97

Customer Signature: Joe Fallon
A E T S Signature: _____



Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of	
3. Generator's Name and Mailing Address HARRIS ENVIRONMENTAL SERVICES, INC. 1150 BULLOCK ROAD DURHAM, N.C. 27704						A. Non-hazardous Manifest Document Number Z0004899	
4. Generator's Phone (919) 442-1122		5. Transporter 1 Company Name HARRIS ENVIRONMENTAL SERVICES, INC.		6. US EPA ID Number		B. State Generator's ID FOR NORTH CAROLINA	
7. Transporter 2 Company Name		8. US EPA ID Number		9. Designated Facility Name and Site Address HARRIS ENVIRONMENTAL SERVICES, INC. 1150 BULLOCK ROAD DURHAM, N.C. 27704		10. US EPA ID Number	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM						12. Containers	
						13. Total Quantity	
						14. Unit Wt/Vol	
						15. Waste No.	
a. HAZARDOUS WASTE OIL-CONTAMINATED SOIL						425.50	
b.							
c.							
d.							
J. Additional Descriptions for Materials Listed Above OIL-CONTAMINATED SOIL						K. Handling Codes for Wastes Listed Above	
a.						c.	
b.						d.	
15. Special Handling Instructions and Additional Information PAILING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 988 754-1111 SAN # 378813 81468479							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.							
Printed/Typed Name Jodie Stein for Joe Fallon		Signature <i>Jodie Stein for Joe Fallon</i>				Month Day 10/9/91	
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name EFFIEY WELER				Signature <i>Effiey Weller</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name				Signature	
19. Discrepancy Indication Space		actual recvd 42920P Item 12 type-DT					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.							
Printed/Typed Name EILEEN CARTER		Signature <i>Eileen Carter</i>				Month Day 11/91	

In case of an emergency or spill, immediately call AETC (800) 426-2382.

GENERATOR

TRANSPORTER

FACILITY



Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NJ 2210020978		Manifest Documents No. 000		2. Page 1 of 1	
3. Generator's Name and Mailing Address US ARMY COM ELECT COMD CHARLES WOOD AREA FORT MONMOUTH NJ 07703				A. Non-hazardous Manifest Document Numt Z0004899			
4. Generator's Phone (908) 532-6223				B. State of New Jersey, J. FALLON ATT FORT MONMOUTH, NJ 07703			
5. Transporter 1 Company Name HORWITH TRUCKS, INC.		6. US EPA ID Number PA D 146714878		C. State Trans. ID TU 24839		D. Transporter's Phone (610) 261-2220	
7. Transporter 2 Company Name		8. US EPA ID Number		E. State Trans. ID			
9. Designated Facility Name and Site Address CWM CHEMICAL SERVICES, INC. 1550 BALMER ROAD MODEL CITY, NY 14107				10. US EPA ID Number NY D 049836679		F. Transporter's Phone ()	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM				12. Containers		13. Total Quantity	
a. CHEMICALS, n.o.s. DOT NON-REGULATED, NONE				No. Type		14. Unit Wt/Vol	
				001 CM		425.50 P	
b.							
c.							
d.							
J. Additional Descriptions for Materials Listed Above S/E LEAD CONTAMINATED SOIL				K: Handling Codes for Wastes Listed Above			
a.				a.			
b.				b.			
15. Special Handling Instructions and Additional Information PACKING SLIPS ATTACHED FOR CLARIFICATION EMERGENCY PHONE 888 353-2387 SAN # 378813							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.							
Printed/Typed Name Jodie Stein for Joe Fallon		Signature Jodie Stein for Joe Fallon		Month Day 10/7/19			
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name JEFFREY WELLER		Signature Jeffrey Weller		Month Day 07/01/19	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name		Signature		Month Day	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.							
Printed/Typed Name				Signature		Month Day	

In case of an emergency or spill, immediately call AETC (800) 426-2382.

GENERATOR

TRANSPORTER

FACILITY



EPA ID: 010214000918
 US ARMY CORP
 10000 GREEN ST
 ALEXANDRIA VA 22304
 EPA ID: 010214000918
 AETS: JOE FALLON

Manifest No: 00450
 Manifest ID: 00000000
 Date: 07/01/97
 Facility Name: AETS
 Facility ID: 00000000

Destination:
 EPA ID: 010214000918 US ARMY CORP

Transporter:
 EPA ID: PA0145714879 HORNUM TRUCKS, INC.

Overnight: Emergency Response:

DISPOSAL UNITS UOH	WIP: APPPV DESCRIPTION	GROSS TYPE WASTE AREA
1	DUMPRAMP 253858 LEAD CONTAMINATED SOIL M000B5077	0.00
Manifest #6 UH: 1A		
TOTAL		TOTAL
-----		-----
1		0

This is to document that the facility designated above is authorized by applicable State and/or Federal agencies, has the capacity, and will provide or assure that the ultimate disposal method is followed for the particular Hazardous Waste that is planned for shipment.

Date: 07-01-97
 Customer Signature: [Signature]
 Facility Signature: [Signature]



DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101



REPLY TO
ATTENTION OF
Directorate of Public Works

August 8, 1997

State of New Jersey
Department of Environmental Protection
Division of Solid and Hazardous Waste
ATTN: Mrs. Aneeta Sukheja
Manifest Section, CN 414
Trenton, New Jersey 08625-0414

RE: Unmanifested Waste Report

Dear Mrs. Sukheja:

Pursuant to N.J.A.C. 7:26-9.1(c)1ii(2)(F) the following information is provided to document the disposal of lead contaminated soil from the U.S. Army Communications Electronics Command, Fort Monmouth, New Jersey.

FACILITY INFORMATION:

Facility EPA ID #: NYD049836679
Facility Name: CWM Chemical Services, Inc.
Mailing Address: 1550 Balmer Road
P.O. Box 200
Model City, NY 14107

Facility Address: CWM Chemical Services, Inc.
1550 Balmer Road
Model City, NY 14107

Date Waste Received: July 02, 1997

GENERATOR INFORMATION:

Generator EPA ID.#: NJ2210020978
Generator Name: U.S. Army Communications Electronics Command
Generator Address: Directorate of Public Works
Building 173, ATTN: SELFM-PW-EV
Fort Monmouth, NJ 07703

TRANSPORTER INFORMATION:

Transporter EPA I.D.#: PAD146714878
Transporter Name: Horwith Trucks, Inc.
Transporter Address: Route 329, Box 7
Northampton, PA 18067

Quantity and Description of Waste: 42,550 pounds, lead contaminated soil.

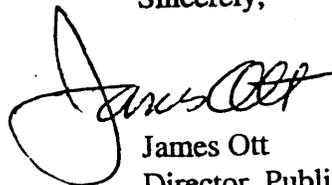
Method of Treatment: Stabilization and Subtitle C Secure Landfill.

Explanation Why Waste Received Unmanifested: Referenced soils were shipped under a Non-Hazardous Waste Manifest # Z0004899 (see attachment # 1). Prior to offsite shipment, soils were sampled by generator personnel following NJDEP sampling protocols. One sample per every 20 cubic yards of soil was collected for laboratory analysis. Samples were tested at Fort Monmouth's NJDEP certified laboratory (certification # 13461) for lead under TCLP methodologies. Sample results were less than 5 mg/kg for the referenced soil. In order to obtain a higher level of waste treatment technology and to reduce the Army's long term liability, the U.S. Army Fort Monmouth opted to send the non-hazardous waste soil to a fully permitted part B Treatment, Storage and Disposal Facility (TSDF). Upon receipt at the referenced TSDF, samples were collected for lead analysis under TCLP methodologies. Facility results (6.43 mg/kg) were slightly higher than the RCRA lead standard of 5 mg/kg. As part of its operating permit requirements, the receiving facility is mandated to use its own sampling results when retesting of a waste stream is initiated. Based upon their data, the incoming soils needed to be received as a hazardous waste (waste code D008). A new hazardous waste manifest # NYB8778276 (see attachment # 2) was completed to replace the original non-hazardous waste manifest.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Should you have any questions regarding this disposal action, please contact Mr. Joseph Fallon. He can be reached at the following telephone number: (908) 532-6223.

Sincerely,



James Ott
Director, Public Works



Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

July 17, 1997

Mr. Robert McCarty, Supervisor Data Management Section
New York State Department of Environmental Conservation
P. O. Box 12820
Albany, NY 12212

RE: Unmanifested Waste Report

Dear Mr. McCarty:

Pursuant to NYCRR 372.4(d), below is an explanation of hazardous waste received at CWM Chemical Services, Inc. without a New York State Hazardous Waste Manifest. As required, a NYSDEC On-site Monitor was contacted for confirmation that the waste was acceptable for receipt.

TSD Facility: CWM Chemical Services, Inc., 1550 Balmer Rd., Model City, NY 14107
EPA ID #: NYD049836679
Date Received: 07/02/97

Generator: U.S. Army Comm Electronics Command, Fort Monmouth, NJ 07703
EPA ID#: NJ2210020978

Transporter: Horwith Trucks, Inc.
EPA ID#: PAD146714878
License Plate #: 515 (truck number)

Waste Description: RQ, Hazardous Waste Solid, n.o.s. (lead), 9, NA3077, III
Waste Code: D008
Quantity Received: 42550 lbs.
Disposal Method: stabilize and subtitle C landfill

Reason: The generator's analysis showed the waste to be non-hazardous. CWM's analysis of a composite sample of three bulk loads showed leachable lead at 6.43 mg/L. Rather than try to determine who's sampling strategy and testing was more representative, the generator agreed that the waste should be identified and managed as D008.



If you require additional information, please feel free to contact me at (716) 754-0336.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Very truly yours,
CWM CHEMICAL SERVICES, INC.

Jill Knickerbocker
Jill Knickerbocker
Technical Manager

cc: file DOR 07/02/97 - 81468479

Generator

Generator State

Transporter

On-Site DEC Monitor

E. Dassatti

J. Reidy

J. Devald

J. Knickerbocker/EMD

A. Davis/Operations

NYSDEC/Albany, NY

USEPA/New York, NY

NCHD/Niagara Falls, NY

CWM/Model City, NY

CWM/Model City, NY