Remedial Investigation Report
And
Sediment Quality Evaluation

M-5 Landfill Site

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

Directorate of Public Works

January 26, 2004

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Remedial Investigation Report And Sediment Quality Evaluation for the M-5 Landfill Site

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REMEDIAL INVESTIGATION REPORT
AND SEDIMENT QUALITY EVALUATION
FOR THE M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PREPARED FOR:

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EXECUTIVE SUMMARY

VERSAR, Inc. (VERSAR) has been contracted by the United States (U.S.) Army Installation, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey, to prepare a Remedial Investigation Report (RIR) for data collected during recent sediment sampling events at the M-5 Landfill site. This report describes the remedial investigation activities conducted at this site on April 13, 2000.

The site is located on the Main Post Area of Fort Monmouth, north of the M-4 Landfill site and is bounded to the south by North Drive, to the north by an unpaved road located south of Building No. T-198, by Wilson Avenue to the east and by Mill Creek and Parkers Creek to the west. A portion of Mill Creek is adjacent to the western perimeter of the M-5 Landfill site. The M-5 Landfill site occupies approximately 3.2 acres. According to the Roy F. Weston, Inc. (Weston) report, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report* (December 1995), the M-5 Landfill site was in use between 1952 and 1959, and reportedly used for the disposal of automobiles, domestic, and industrial wastes. Weston conducted groundwater sampling at two wells during the 1995 Site Investigation (SI). The results indicated the presence of tetrachloroethene (PCE) in the upgradient well. As part of a New Jersey Pollutant Discharge Elimination System (NJPDES) permit, surface water samples had also been collected at two locations, one upstream on Mill Creek and one downstream on Lafetra Creek. PCE was also detected at downgradient surface water sampling locations at concentrations exceeding the New Jersey Department of Environmental Protection (NJDEP) surface water criteria. Surface water was not specifically sampled at the M-5 Landfill site during the Weston SI because the maximum volatile organic compound (VOC) concentrations detected at the site during previous rounds of sampling were less than the maximum concentrations at the M-2 Landfill site, which is located upgradient. Because the existing monitoring wells and surface water sampling locations were adequately placed to monitor downgradient groundwater and surface water quality, Weston proposed a long-term groundwater and surface water monitoring program be implemented. No recommendations related to the evaluation of site-specific sediment quality were provided.

Other studies conducted at similar Main Post landfill sites (M-2 and M-8) found polychlorinated biphenyl (PCB) -containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both the M-2 and M-8 Landfill sites. Therefore, assuming that other landfills on the Main Post had received similar waste materials, the DPW initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments in creeks and/or brooks running adjacent to the Main Post and Charles Wood (CW-3A only) landfill sites. The M-5 Landfill site was included in the sediment sampling program to supplement the Weston findings related to soil, surface water and groundwater matrices.

To determine potential impacts to sediments in Mill Creek, the DPW collected 16 sediment samples, including three duplicate samples for quality assurance/quality control

(QA/QC), on April 13, 2000, from the surface and near-surface sediments of Mill Creek. The samples were obtained along the 570-foot portion of Mill Creek that flows along the western perimeter of the M-5 Landfill site. All 16 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations identified in the NJDEP *Guidance for Sediment Quality Evaluations* (November 1998). The analytical data is summarized in table form in this RIR. VERSAR developed this RIR based on the evaluation of this sediment data.

Data presented in **Section 3.0** of this RIR indicate only one of 16 samples (0.054 mg/kg, B-2, 0-6" bgs) with Total PCBs detected above the laboratory Method Detection Limit (MDL). This sample result also exceeds the NJDEP Effects Range – Low (ER-L) guidance concentration for Total PCBs, which represents the concentration at which adverse benthic effects are found in approximately 10% of studies. No other guidance criteria were exceeded. Analysis of the remaining 15 samples, including upgradient samples, did not indicate PCBs above laboratory MDLs. Because the result at Boring B-2 exceeded only the ER-L guidance concentration, and the proximal upgradient samples were non-detect (ND) for Total PCBs, no long-term adverse benthic effects are expected in Mill Creek.

Based on the results of this sediment quality evaluation, No Further Action (NFA) is recommended for the M-5 Landfill site related to potential PCB impacts to the sediments of Mill Creek.

1.0 INTRODUCTION

VERSAR has been contracted by the U.S. Army Installation, Fort Monmouth DPW, Fort Monmouth, New Jersey to prepare an RIR and sediment quality evaluation for the M-5 Landfill site located at the Fort Monmouth Main Post Area. This report addresses the remedial investigation activities performed at this site on April 13, 2000.

1.1 Objectives

Other studies conducted at similar Main Post landfill sites (M-2 and M-8) found PCB-containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both the M-2 and M-8 Landfill sites. Therefore, assuming that other landfills on the Main Post had received similar waste materials, the DPW initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments in creeks and/or brooks running adjacent to the Main Post and Charles Wood (CW-3A only) landfill sites. The M-5 Landfill site was included in the sediment sampling program to supplement the earlier Weston findings related to the soil, surface water and groundwater matrices.

The objective of this RIR is to determine potential PCB impacts to stream sediments in Mill Creek, which flows along the western perimeter of the M-5 Landfill site. The remedial investigation was conducted in accordance with New Jersey Administrative Code (NJAC) 7:26E - *Technical Requirements for Site Remediation* (July 1999) and NJDEP *Guidance for Sediment Quality Evaluations* (November 1998).

The remedial investigation encompassed the following:

- Obtaining surface and near-surface sediment samples approximately every 100 feet along the bottom of Mill Creek in the area that abuts the western perimeter of the M-5 Landfill site.
- Analyzing the samples for PCBs using United States Environmental Protection Agency (USEPA) Method 8082.
- Comparing the analytical results to the screening level criteria, as defined in the NJDEP *Guidance for Sediment Quality Evaluations* ***(November 1998).***

1.2 Report Organization

This report is organized to minimize repetition. **Section 2.0** provides background information and a general description of the M-5 Landfill site located at the Fort Monmouth Main Post Area. **Section 3.0** describes and summarizes the sampling procedure and activities. **Section 4.0** presents analytical results and compares those results to NJDEP guidelines. **Section 5.0** provides a summary of the findings of the remedial investigation and requests an NFA determination from the NJDEP.

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 M-5 Landfill site. Included is a description of the site location, background, current 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 2-1**). 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 Creek, 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 M-5 Landfill site is bounded by North Drive to the south, an unpaved road south of Building No. T-198 to the north, Wilson Avenue to the east and Mill Creek and Parkers Creek to the west (**Figure 2-2**). Mill Creek flows adjacent to the western perimeter of the M-5 Landfill site for approximately 570 feet. The approximate area of the M-5 Landfill site is 138,200 ft^2 (3.2 acres). The bank of the 570-foot portion of Mill Creek that flows along the western perimeter of the M-5 Landfill site is currently covered with large rocks and riprap. The entire length of the streambank has been repaired as part of the DPW's streambank landfill project. The stream flow in this area is constant and depth varies based on tidal fluctuations, but pools of water 2 to 3 feet deep exist even at low tide.

The various landfill sites on the Main Post are identified on **Figure 2-3**. The map is provided to identify:

- the relative location of each of the former landfill sites due to the similarity of past site uses, the types debris deposited at these locations, and the nature of the contaminants identified in soil, groundwater, and/or sediment samples during the present and former investigations; and

- the proximity and interrelatedness of the adjacent surface water bodies.

2.2 Site Background

The Weston report, *Investigation of Suspected Waste Sites at Fort Monmouth* (1993), summarized surface water sampling events that have been conducted since February 1986 for samples that were collected upstream in Mill Creek and downstream in Lafetra Creek. These sampling events were part of a former New Jersey Pollutant Discharge Elimination System (NJPDES) Permit. From these sampling events, the Weston report indicated one VOC (PCE) was detected at concentrations above NJDEP surface water criteria.

To further evaluate the presence of VOCs, Weston installed and sampled two shallow groundwater monitoring wells (one upgradient and one downgradient) at the M-5 Landfill site in the 1995 SI. The results of that investigation indicated that PCE was detected at concentrations exceeding NJDEP Groundwater Quality Criteria (GWQC) and maximum background concentrations (Weston, 1995). However, Weston recommended that no immediate remedial action was required because the landfill had been inactive for decades and groundwater use between the former source (e.g., the landfill) and the streams was unlikely.

Weston did not sample surface water during the 1995 SI. The Weston SI Report indicated that maximum VOC concentrations detected during previous sampling rounds were less than maximum concentrations detected at the M-2 Landfill, which is located upgradient from the M-5 Landfill site. In addition, VOC concentrations from previous sampling events did not exceed surface water criteria at the M-8 Landfill, which is located downgradient of the M-5 Landfill site (Weston, 1995). Thus, Weston concluded that there was no immediate threat to human health. A long-term surface water and groundwater monitoring program was recommended based on the historical use of the site as a landfill.

In consideration of these findings, the DPW performed this remedial investigation to assess the sediments in Mill Creek near the M-5 Landfill site to ensure that the former landfill itself and other upstream landfill sites had not adversely impacted the stream sediments. The present investigation was undertaken to further expand the Weston SI report and assess the potential PCB-related impacts to stream sediments based on past site use and findings at other Main Post landfill sites.

2.3 Current Conditions

VERSAR conducted a site walk on December 11, 2000 to assess current conditions at the M-5 Landfill site. The site consisted of an open field, which is maintained through landscaping. Site photographs are provided in **Appendix A**.

2.4 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding the M-5 Landfill site. Included is a description of the regional geology and hydrogeology of the area surrounding Fort Monmouth.

2.4.1 Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-5 Landfill site 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 2-4**.

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 per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 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 (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line (e.g., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 feet 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 feet 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. 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 2 to 12 feet 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 feet 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 a brown silt in Monmouth County (Jablonski, 1968).

As presented in the *Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, prepared by Weston, Inc, December 1995 (Weston SI), several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium and manganese (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples.

2.4.2 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, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer in the Main Post Area is identified as part of the "Navesink-Hornerstown 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. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2 to 9 feet bgs). Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

Based on a review of the NJDEP GWQS (NJAC 7:9-6), January 7, 1993, Versar has determined that the site is underlain by a Class III-A aquifer. A formal presentation of this finding was made to the NJDEP on April 17, 2001. The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent

classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable use.

Shallow groundwater may be 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 (e.g., streams, lakes)
- Roadways, utility conduits and stormwater culverts

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. The groundwater flow in the vicinity of the M-5 Landfill site is assumed to be to the west towards Mill Creek.

Boring logs for monitoring wells installed at the M-5 Landfill site between December 1994 and March 1999 (Remedial Action Workplan, ATC) indicate that the soils consist of a thin soil cover of brown sandy silt (approximately one foot thick) underlain by approximately seven feet of olive/brown poorly graded sand with silt. This stratum is underlain by an 8-foot thick layer (8-16 feet bgs) of green/brown sandy silt. A dark green dense to very dense silty sand/clayey sand, with clay content increasing with depth, extends from 16 to at least 60 feet bgs or the termination depth of the borings. Water-level elevation data collected during the Weston SI indicate groundwater flow direction was estimated to be west toward Mill Creek. Groundwater was encountered approximately 4 feet bgs.

2.4.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey, the majority of the Main Post Area is covered by urban land (**Figure 2-5**). The soil survey described urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post Area:

- DoB Downer sandy loam (with 2 to 5 percent slopes);
- FrB Freehold sandy loam (with 2 to 5 percent slopes);
- FUB Freehold sandy loam/urban land complex (with 0 to 10 percent slopes);
- HV Humaquepts, frequently flooded;

- KvA Kresson loam (with 0 to 5 percent slopes);
- UA Udorthents, smoothed; and
- UD Udorthents – urban land complex (with 0 to 3 percent slopes).

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are 1 to 10 percent glauconite and are found on uplands. The Humaquepts soils are somewhat poorly- to very poorly- drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately, well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and glass. The soils in the vicinity of the M-5 Landfill site are classified as UA – Udorthents, smoothed.

2.4.4 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 M-5 Landfill site is located on the floodplain of Mill Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 feet above mean sea level (amsl).

Surface water bodies from the western part of the Main Post flow into the Lafetra Creek to the north or into Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Mill Creek is channelized and flows past the west side of the M-5 Landfill site. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers and Oceanport Creeks are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

3.0 SEDIMENT SAMPLING ACTIVITIES

The Fort Monmouth DPW conducted sediment sampling in Mill Creek to evaluate potential PCB-related impacts to stream sediments associated with the M-5 Landfill site. On April 13, 2000, six borings were installed at a maximum spacing of 100 feet, ranging from approximately 60-100 feet, along the bottom of Mill Creek, as shown in **Figure 3-1**. The locations extended from downstream at Boring B-1 near the north end of the site to Boring B-6 upstream near North Drive, and were sampled accordingly in this order (see chain-of-custody records, **Appendix D**). The sediment sampling was conducted in accordance with the *Installation Landfill Program Sediment Sampling Plan for Nine Former Landfill Sites* (TVS, March 2000) found in **Appendix B**. The Sediment Sampling Plan (SSP) was approved by the NJDEP on April 3, 2000.

Sixteen (sediment samples, including three duplicate samples for QA/QC, were collected from six borings using a Wildco Sediment Sampler. The samples were obtained along the 570-foot portion of Mill Creek that flows along the western perimeter of the M-5 Landfill site. Sample depths ranged from surface (0-6 inches) to near-surface (6-12 inches bgs) at each boring location, with the exception of Boring B-6, which was also sampled at a depth of 18-24 inches bgs. The samples consisted of dark brown to black to yellow fine silty sand with small to medium rounds. As required by the SSP, downstream samples were collected first beginning at location B-1 and proceeding upstream to location B-6. Boring logs are provided in **Appendix C**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the SSP. The sediment samples were collected using a Wildco Sampler and immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the Fort Monmouth Environmental Testing Laboratory (FMETL), New Jersey Certification Number NJDEP 13461, under proper chain-of-custody procedures. The samples were analyzed by the FMETL on April 13, 2000 for PCBs utilizing USEPA Method 8082. Copies of the chain-of-custody for the laboratory analysis can be found in **Appendix D**. A summary of the borings, including sample IDs, sample collection date/time, sample depths, northing/easting coordinates, analysis and general soil descriptions, is provided in **Table 3-1**.

4.0 SITE CHEMICAL CHARACTERIZATION

On April 13, 2000, the DPW collected 16 sediment samples along the bottom of Mill Creek to evaluate potential PCB-related impacts to stream sediments from the adjacent M-5 Landfill site. Six borings were installed at a maximum spacing of 100 feet, ranging from approximately 60-100 feet, along the bottom of the creek. Sixteen sediment samples, including three duplicates for QA/QC, were collected from six borings at depths ranging from surface (0-6 inches) to near-surface (6-12 inches bgs) at each boring location with the exception of Boring B-6, which was also sampled at a depth of 18-24 inches bgs. Samples were identified in the field using the following nomenclature: M-5/1 0-6", M-5/1 6"-12" to M-5/6 0-6", M-5/6 6"-12". The samples were analyzed for PCBs utilizing USEPA Method 8082.

4.1 Chemical Characterization

The sediment laboratory analytical data were compared to the established screening level criteria, as presented in the *NJDEP Guidance for Sediment Quality Evaluations* (November 1998). This evaluation included at least two samples from each boring to assess the sampling data and to identify potential contaminants of concern. For marine/estuarine sediment screenings, the guidelines define two guidance concentrations for Total PCBs, an Effects Range-Low (ER-L) and an Effects Range-Medium (ER-M). The ER-L (0.023 mg/kg Total PCBs) represents the concentration at which adverse benthic effects are found in approximately 10% of studies. The ER-M (0.180 mg/kg Total PCBs) represents the concentration at which a greater than 50% incidence of adverse effects to sensitive species and/or life stages is likely to occur. The ER-L and ER-M are not regulatory cleanup standards. An exceedence indicates a potential risk to the benthic community and helps to determine the need for further investigations (e.g., toxicity testing, tissue bioassays, etc.). However, an exceedence of the ER-L/ER-M criteria does not necessarily mandate further investigations if the sediments proximal to the site have similar contaminant concentration ranges to upgradient sediments. As stated previously, the samples were collected beginning with the downstream location (B-1) and proceeding to the upstream location (B-6). Therefore, the upgradient sediments are most closely represented by the laboratory data results for location B-6 (see **Table 4-1**). No PCBs were detected in sediment samples collected at this location.

Based on the *NJDEP Guidance for Sediment Quality Evaluations* (November 1998), the Lowest Effects Levels (LEL) and the Severe Effects Levels (SEL) are to be used as guidelines for individual Arochlors. Arochlor 1254 is the only Arochlor found at the Landfill Sites shown on **Figure 2-3**. The LEL indicates concentrations at which adverse benthic impacts may begin to occur (level tolerated by most benthic organisms). The SEL is a contamination level that indicates severe impacts to the benthic community in most cases studied. Both the LEL and the SEL are derived from freshwater sediment screening criteria; however, they are used in conjunction with the marine/estuarine ER-L and ER-M values for screening purposes. The ER-L and ER-M apply to Total PCBs, whereas the LEL and SEL can be used for screening purposes for individual Arochlors.

In the case of non-polar organic compounds, such as PCBs, it may be necessary to modify the SEL to create a site-specific SEL (SSEL) based on the Total Organic Carbon (TOC) fraction present in the sample. The TOC fraction is used to determine if the samples were collected in depositional zones, evidenced by a higher percentage of fine-grained particles. Depositional zones are generally the areas of highest potential contamination and are targeted during site sampling events. To calculate a SSEL, the SEL is multiplied by the TOC fraction. If the TOC of the samples is not measured during sampling, as is the case at the M-5 Landfill site, a default value of 1% is used. In this instance, each SEL is multiplied by 0.01 to derive the SSEL for comparison purposes. At the M-5 Landfill site, the only Arochlor detected in the sediments was Arochlor 1254. The LEL, SEL and SSEL for Arochlor 1254 are shown below.

Polychlorinated Biphenyl	LEL (mg/kg, dry weight)	SEL (mg/kg organic carbon, dry weight)	SSEL (mg/kg)
Arochlor 1254	0.060	34	0.34

mg/kg=milligrams per kilogram

The USEPA, Region II, and the NJDEP Bureau of Environmental Evaluation and Risk Assessment/Environmental Toxicology and Risk Assessment (BEERA/ETRA) have discontinued the SSEL approach for general screening purposes except in cases of borderline screening exceedances and/or a weight of professional evidence suggesting that the SSEL is appropriate. The SSEL approach is discussed here for completeness, but was not otherwise used to formulate site-related environmental risk decisions or conclusions.

The results of the PCB laboratory analysis indicate one sample that was detected above the laboratory Method Detection Limit (MDL). This result (0.054 mg/kg at Boring B-2 0-6" bgs) exceeds the ER-L guidance criteria of 0.023 mg/kg for Total PCBs, but does not exceed the ER-M of 0.180 mg/kg or the LEL for Arochlor 1254 (0.060 mg/kg). Arochlor 1254 is the only Arochlor detected at the site. The SSEL for Arochlor 1254 (0.34 mg/kg) was not exceeded.

Because the upgradient samples proximal to Boring B-2 did not present detections of PCBs above the laboratory MDL, the exceedence is likely isolated and is not expected to have significant long-term adverse benthic effects in Mill Creek. The sample results are summarized in **Table 4-1**. The laboratory data sheets are presented in **Appendix D**.

4.2 QA/QC

In order to verify the reliability of the analytical results, VERSAR reviewed the holding times for each sample and the results of the analysis of each sample. All samples were analyzed by the FMETL within the prescribed holding time requirements for each analytical method.

The analytical results for the both the duplicate samples and the original samples showed that PCB concentrations at the M-5 Landfill site are ND. Therefore, relative percent differences (RPDs) were not calculated.

5.0 CONCLUSIONS

Based on a review of the laboratory analytical results, a single exceedence of the ER-L guidance concentration of 0.023 mg/kg for Total PCBs in Boring B-2 was detected (0.054 mg/kg). The 15 remaining sediment samples analyzed during this investigation were ND for PCBs.

The ER-M of 0.180 mg/kg for Total PCBs and the LEL/SSEL of 0.060 mg/kg and 0.34 mg/kg for the individual Arochlor (Arochlor 1254) were not exceeded. The result at Boring B-2 exceeds only the ER-L guidance criteria, which indicates the potential for adverse benthic effects in approximately 10% of studies. However, the proximal upgradient sediment samples were all ND for Total PCBs. Therefore, minimal potential exists for significant long-term adverse benthic effects in Mill Creek.

Based on the results of this sediment quality evaluation, NFA is recommended for the M-5 Landfill site related to potential PCB impacts to the sediments of Mill Creek.

6.0 REFERENCES

Fort Monmouth DPW *Installation Landfill Program Sediment Sampling Plan for Nine Former Landfill Sites (March 2000).*

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TABLES

Table 3-1
Sediment Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Boring ID	Field Sample Location ID	Laboratory Sample ID	Date Collected	Time Collected	Sample Depth (in bgs)[1]	Coordinates Northing	Coordinates Easting	Analysis	General Soil Description
B-1	M5/ 1 0-6"	**5344.01**	4/13/2000	1359	0-6"	539587.918	617365.81	PCBs[2] (SW-846 Method 8082)	Dark Brown/Brown/Black Fine Sand to Silty Sand
	M5/ 1 6-12"	**5344.02**	4/13/2000	1401	6"-12"				
B-2	M5/ 2 0-6"	**5344.03**	4/13/2000	1410	0-6"	539453.393	617396.056	PCBs (SW-846 Method 8082)	Brown/Black Fine Sand to Silty Sand
	M5/ 2 6-12"	**5344.04**	4/13/2000	1412	6"-12"				
B-3	M5/ 3 0-6"	**5344.05**	4/13/2000	1413	0-6"	539384.351	617409.493	PCBs (SW-846 Method 8082)	Brown/Black Medium/Fine Sand to Fine Black Silty Sand
	M5/ 3 6-12"	**5344.06**	4/13/2000	1415	6"-12"				
B-4	M5/ 4 0-6"	**5344.07**	4/13/2000	1419	0-6"	539313.293	617425.252	PCBs (SW-846 Method 8082)	Large Brown Sand to Fine Brown/Black to Black Fine Sand
	M5/ 4 6-12"	**5344.08**	4/13/2000	1421	6"-12"				
B-5	M5/ 5 0-6"	**5344.09**	4/13/2000	1423	0-6"	539230.391	617446.732	PCBs (SW-846 Method 8082)	Medium Brown Sand to Brown/Black/Yellow Fine Sand w/Medium Rounds
	M5/ 5 6-12"	**5344.10**	4/13/2000	1425	6"-12"				
B-6	M5/ 6 0-6"	**5344.11**	4/13/2000	1428	0-6"	539161.578	617463.032	PCBs (SW-846 Method 8082)	Fine Brown/Black/Yellow Sand w/Medium to Small Rounds
	M5/ 6 6-12"	**5344.12**	4/13/2000	1430	6"-12"				
	M5/ 6 18"-24"	**5344.13**	4/13/2000	1432	18"-24"				

[1] bgs = below ground surface

[2] PCBs = Polychlorinated Biphenyls

Table 4-1
PCB Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Boring ID	Sample Depth (bgs)	Field Sample Location ID	Lab Sample ID	Date Collected	Analytical Results[5]	MDL[6]
Total PCBs ER-L[1]					**0.023**	
Total PCBs ER-M[2]					**0.180**	
Arochlor 1254 LEL[3]					**0.060**	
Arochlor 1254 SEL[4]					**34**	
B-1	0-6"	M5/ 1 0-6"	5344.01	4/13/2000	ND	0.0130
	6"-12"	M5/ 1 6-12"	5344.02	4/13/2000	ND	0.0130
B-2	0-6"	M5/ 2 0-6"	5344.03	4/13/2000	**0.054**	0.0123
	6"-12"	M5/ 2 6-12"	5344.04	4/13/2000	ND	0.0122
B-3	0-6"	M5/ 3 0-6"	5344.05	4/13/2000	ND	0.0123
	6"-12"	M5/ 3 6-12"	5344.06	4/13/2000	ND	0.0128
B-4	0-6"	M5/ 4 0-6"	5344.07	4/13/2000	ND	0.0122
	6"-12"	M5/ 4 6-12"	5344.08	4/13/2000	ND	0.0126
B-5	0-6"	M5/ 5 0-6"	5344.09	4/13/2000	ND	0.0114
	6"-12"	M5/ 5 6-12"	5344.10	4/13/2000	ND	0.0123
B-6	0-6"	M5/ 6 0-6"	5344.11	4/13/2000	ND	0.0121
	6"-12"	M5/ 6 6-12"	5344.12	4/13/2000	ND	0.0127
	18"-24"	M5/ 6 18"-24"	5344.13	4/13/2000	ND	0.0120
Duplicate	0-6"	DUP 0-6"	5344.14	4/13/2000	ND	0.0128
	6-12"	DUP 6-12"	5344.15	4/13/2000	ND	0.0124
	18-24"	DUP 18-24"	5344.16	4/13/2000	ND	0.0129

Notes:

[1]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (ER-L) - Effects Range-Low

[2]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (ER-M) - Effects Range-Medium

[3]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (LEL) - Lowest Effects Level

[4]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (SEL) - Severe Effects Level

[5]All Results in milligrams per kilogram (mg/kg)

[6]Method Detection Limit (mg/kg) representing Total PCBs

ND = Analyte Not Detected in Sample

Exceedances of the NJDEP Guidances are shaded and printed in**bold-faced** type

PCBs = Polychlorinated Biphenyls

FIGURES

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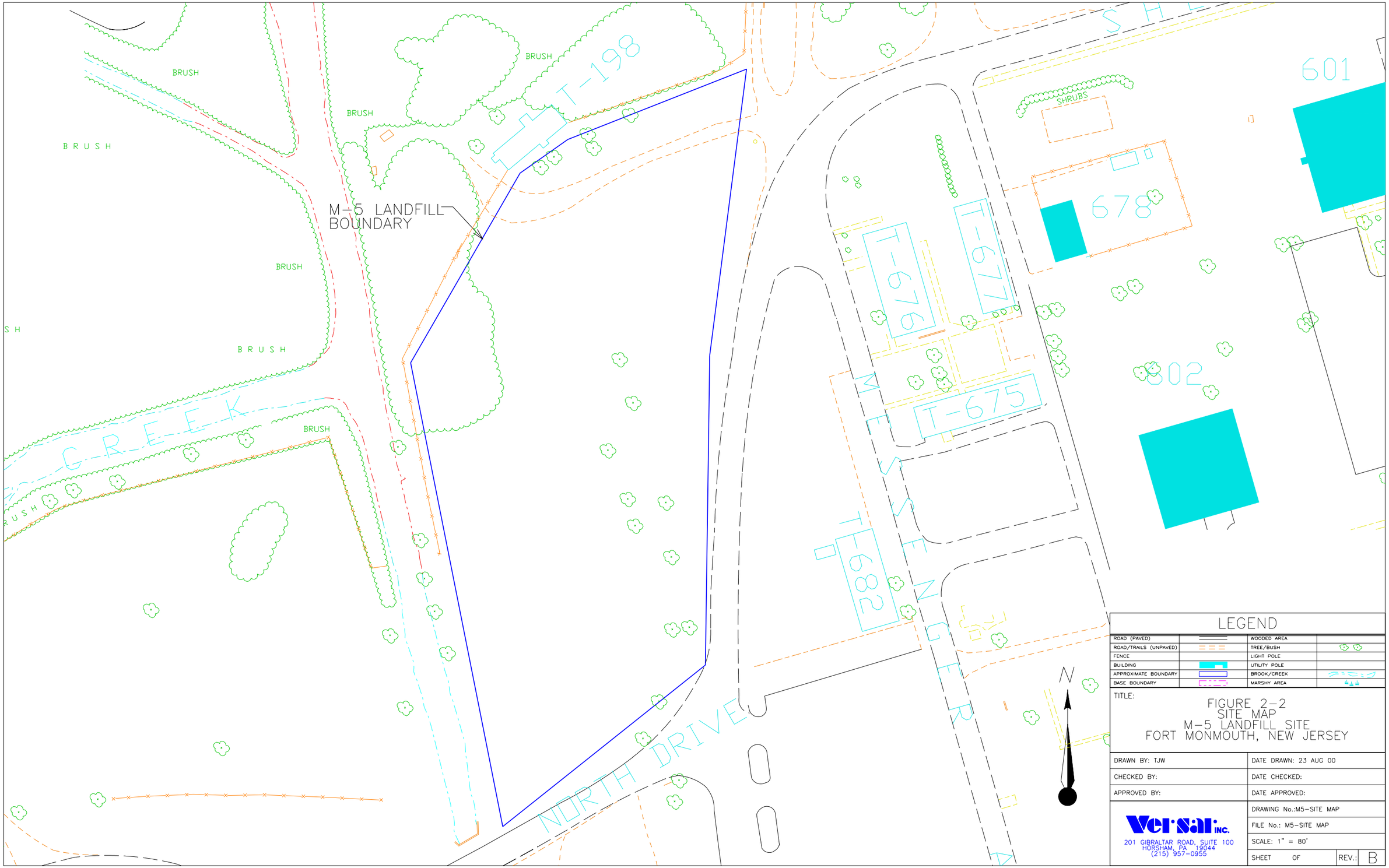

LEGEND

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE		LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

TITLE:

FIGURE 2-2
SITE MAP
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJW	DATE DRAWN: 23 AUG 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.:M5-SITE MAP
	FILE No.: M5-SITE MAP
	SCALE: 1" = 80'
	SHEET OF REV.: B

Ver-Sal INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

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Geologic Map of New Jersey

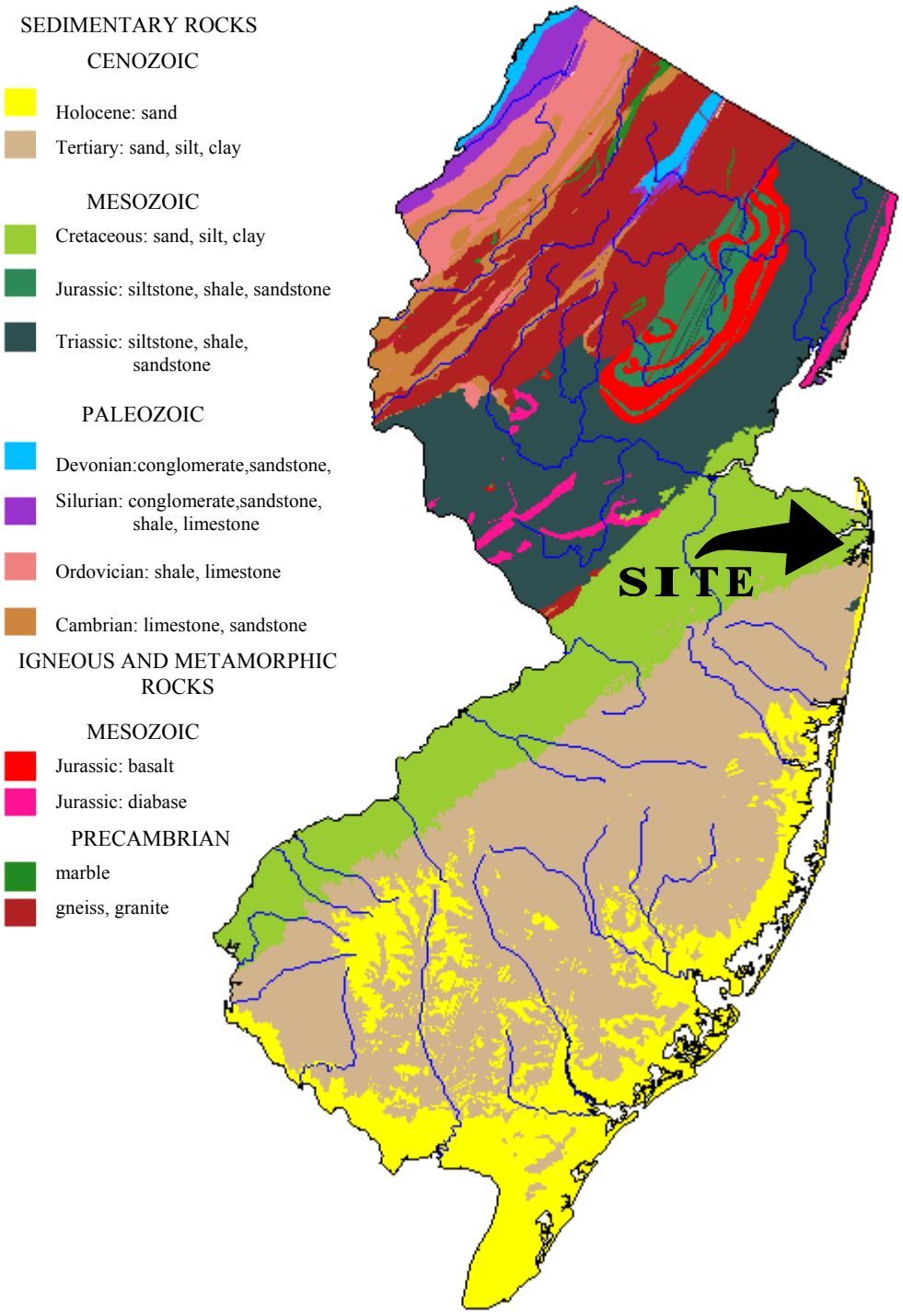
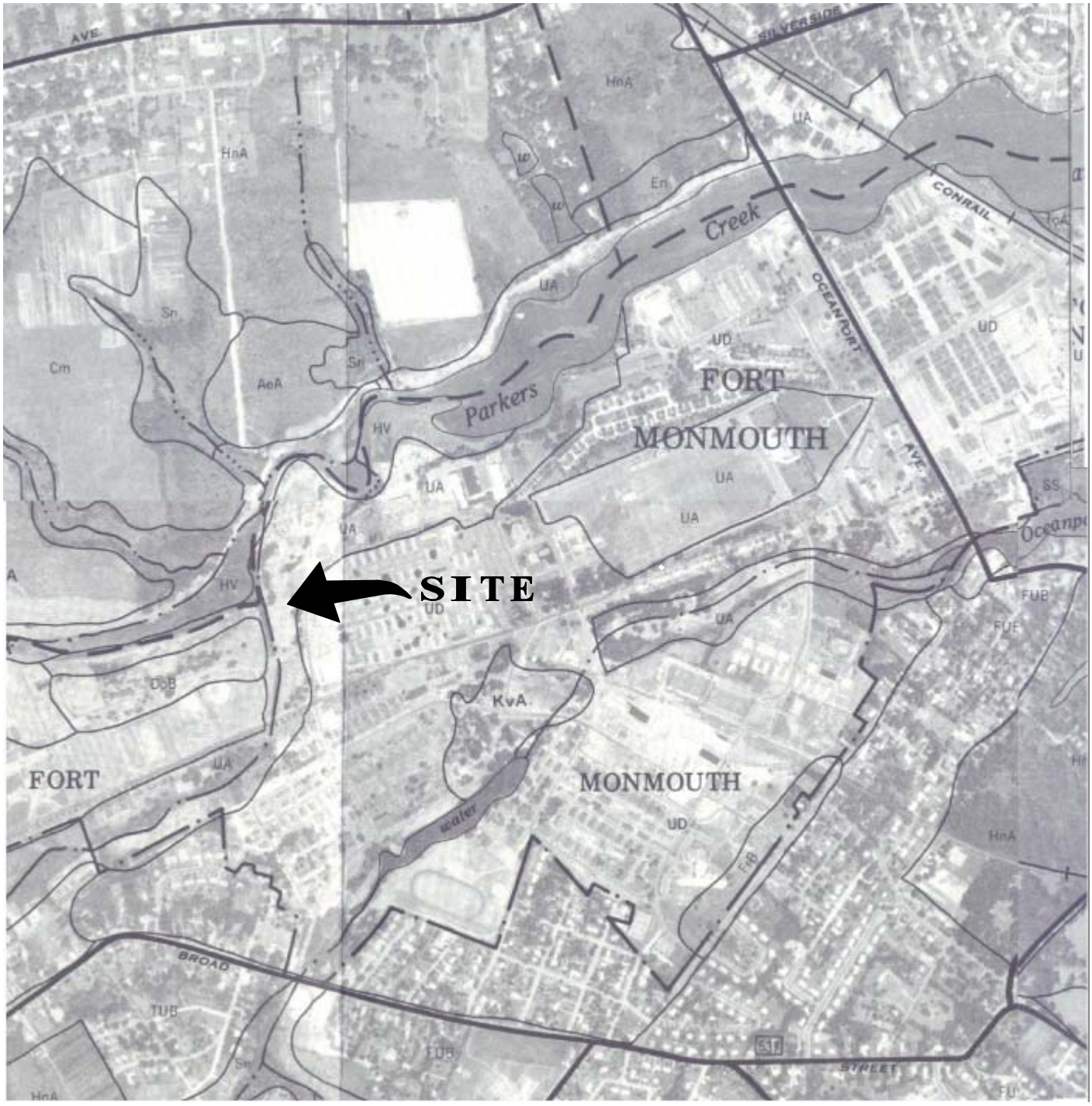


Figure 2-4
Geologic Map of New Jersey
M-5 Landfill Site
Fort Monmouth, New Jersey

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

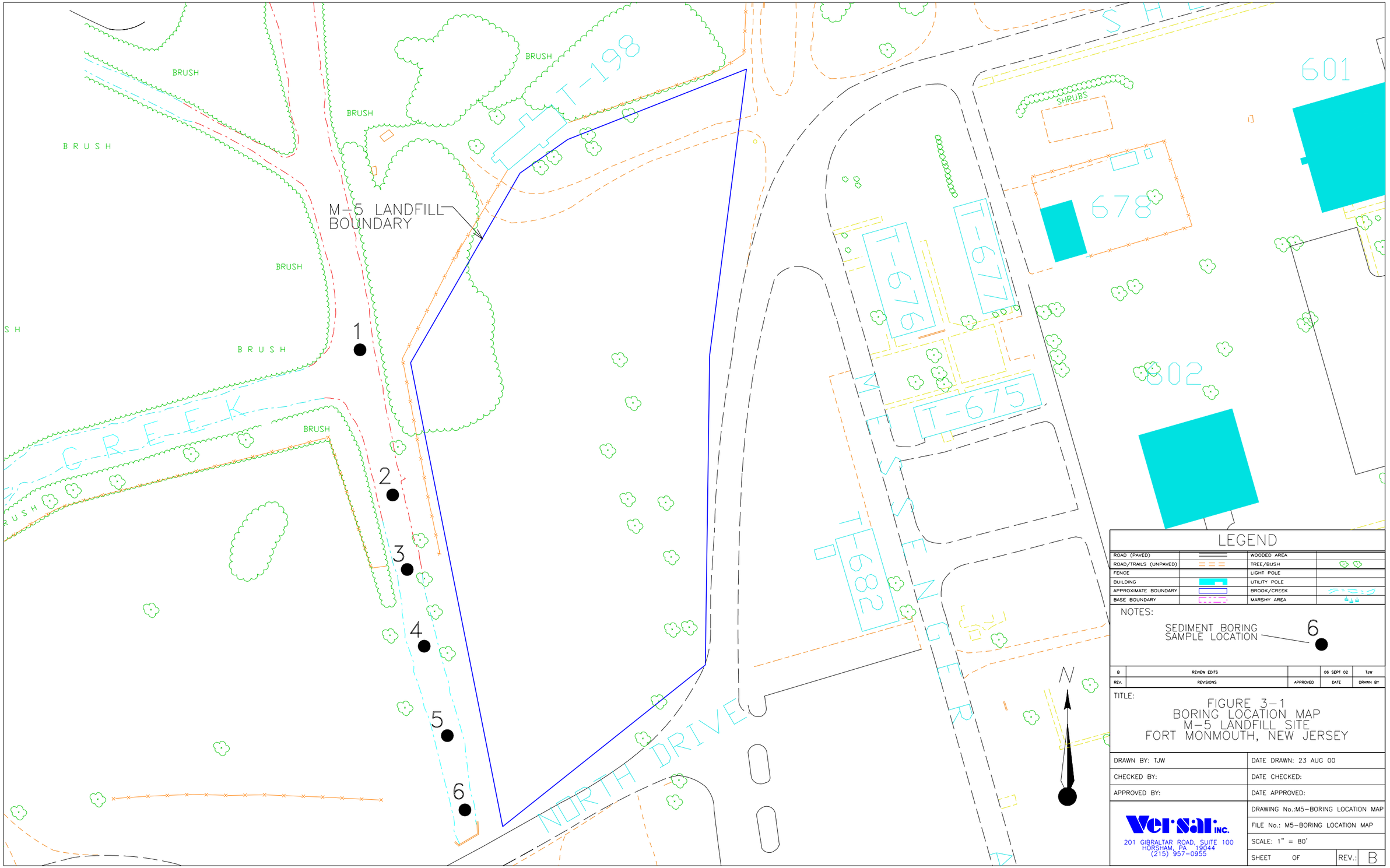
Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.



US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

Figure 2-5
Soil Map of Monmouth County
M-5 Landfill Site
Fort Monmouth, New Jersey

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



LEGEND

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE		LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

SEDIMENT BORING SAMPLE LOCATION — 6

REV.	REVISIONS	APPROVED	DATE	DRAWN BY
B	REVIEW EDITS		06 SEPT 02	TJW

TITLE:

FIGURE 3-1
BORING LOCATION MAP
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJW	DATE DRAWN: 23 AUG 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.:M5-BORING LOCATION MAP
	FILE No.: M5-BORING LOCATION MAP
	SCALE: 1" = 80'
	SHEET OF REV.: B

Ver-Sal INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

APPENDICES

Appendix A

Current Conditions Site Photographs

Appendix A
Current Conditions Site Photographs
M-5 Landfill Site
Fort Monmouth, New Jersey

Appendix B

Sediment Sampling Plan for Nine Former Landfill Sites (TVS, March 2000)

State of New Jersey
Department of Environmental Protection
Christine Todd Whitman
Governor
Robert C. Shinn, Jr.
Commissioner

Mr. Joseph Fallon
Directorate of Public Works
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, NJ 07703 - 5101

APR 0 3 2000

Re: Sediment Sampling Plan
Sites M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 and CW-3A
Fort Monmouth Main Post/Charles Wood
Tinton Falls, Monmouth County

Dear Mr. Fallon:

The NJDEP has reviewed the March 29, 2000 Sediment sampling plan for the nine former landfill sites referenced above and we accept the plan as submitted.

The referenced document, developed with NJDEP using appropriate technical guidance documents and requirements, is specifically designed to determine if PCBs have impacted adjacent surface waters.

There are a few brief comments which we have previously discussed, but I wanted to note here as a reminder for you in this investigation.

- The NJDEP requires PCB method 8082 to be utilized.
- Approved sample preservation methods must be used if volatile compounds are to be investigated or reported on.
- Some discussion regarding the sediment criteria utilized along with a discussion on the application to the sample location and water body must be provided in the final report.
- Sampling must be performed on downgradient samples first.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager
Bureau of Case Management
ICURTIS@DEP.STATE.NJ.US

FTMMTH65IRC.DOC

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101

REPLY TO
ATTENTION OF

Directorate of Public Works

March 29, 2000

State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street
ATTN: Ian Curtis
P. O. Box 028
Trenton, NJ 08625-0028

Re: Sediment Sampling Plan for Nine Former Landfill Sites
(i.e. M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 & CW-3A)
Main Post and Charles Wood Area, Fort Monmouth, New Jersey

Dear Mr. Curtis:

Submitted for your review and approval, please find a copy of the above referenced sampling plan. Said plan should enable the Directorate of Public Works to ascertain whether polychlorinated biphenyls are present within stream sediments bordering the nine referenced landfills. Future site work will be based upon the findings of this sampling initiative.

Should you have any questions or require any additional information regarding this plan, please contact the undersigned at the following telephone number: (732) 532-6223.

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Environmental Protection Specialist
Directorate of Public Works

Encl.

United States Army
Directorate of Public Works
Fort Monmouth, New Jersey

Installation Restoration Program
Sediment Sampling Plan for
Nine Former Landfill Sites

March 2000

SITE INVESTIGATION PLAN

Installation Restoration Program
Sediment Sampling Plan for Nine Former Landfill Sites

PREPARED FOR:

JOSEPH FALLON
PROJECT MANAGER
Directorate of Public Works
BUILDING 173
FORT MONMOUTH, NJ 07703
(732)-532-6223

PREPARED BY:

TECOM-VINNELL SERVICES (TVS)
ENVIRONMENTAL OFFICE
BUILDING 173
FORT MONMOUTH, NJ 07703

TABLE OF CONTENTS

1.0 SAMPLING ACTIVITIES

1.1 OVERVIEW

This report provides details for a proposed sediment sampling plan as prepared by TECOM-Vinnell Services (TVS) on the behalf of the U.S. Army Fort Monmouth, Directorate of Public Works (DPW), Fort Monmouth, New Jersey. The purpose of this sampling initiative is to ascertain whether Polychlorinated Biphenyls (PCBs) are present within stream sediments which border nine former landfill sites (i.e. M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 and CW-3A). The streams associated with this investigation include Mill Creek, Lafetra Creek, Parkers Creek, Husky Brook, and an unnamed tributary of Wampum Brook (see attachments 1 & 2). The data generated from this study will be used in conjunction with other previously collected data involving surface soils, subsurface soils, ground water and surface water. As part of the larger, ongoing remedial investigation at these nine landfill sites, PCBs were identified within subsurface soils at landfill sites M-2 and M-8. The Final Site Investigation (SI) Report, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas (December 1995) identifies electronic components as one of the waste types being disposed of within the subject landfills. Said components (i.e. electrical ballasts) typically contained small quantities of insulating oil which may or may not have contained PCBs. Based upon the potential presence of electronic components at the other seven landfill sites, PCBs may also exist within subsurface soils at these locations. As part of previously conducted sampling initiatives, the DPW has been able to document that the PCBs identified at sites M-2 and M-8 have not impacted site ground water or surface water. Furthermore, PCBs have not been identified within site ground water or surface water at the other landfill sites. The overall goal of the proposed sampling plan is to document that the presence of PCBs at sites M-2 and M-8 have not impacted the nearby stream sediments.

This investigation will be conducted by TVS personnel in accordance with the specifications required for collecting sediment samples as determined by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May 1992) and the NJDEP Guidance For Sediment Quality Evaluations (November 1998).

1.2 SITE DESCRIPTION

Mill Creek is located along the northern side of the M-2 landfill (approximate distance 1,400 feet) and along the western side of the M-4 landfill (approximate distance 360 feet) and the M-5 landfill (approximate distance 570 feet). Lafetra Creek runs along the northern side of the M-3 landfill (approximate distance 1,200 feet), joining with Mill Creek to form Parkers Creek. Parkers Creek surrounds the M-8 landfill (approximate distance 1,500 feet) on the western, northern, and eastern sides. It then runs along the western side of the M-18 landfill (approximate distance 700 feet). Husky Brook runs along the northern side of the M-12 landfill, eventually running between the M-12 and M-14 landfills (combined approximate distance 1,700 feet) before flowing into Oceanport Creek. An unnamed tributary of Wampum Brook is located along the northern side of the CW-3A landfill (approximate distance 600 feet). Stream banks along the landfills vary from heavily vegetated with trees and bramble to simply grass. A stream bank restoration project is currently underway at the landfill sites located on the Main Post. The project entails stabilizing the stream banks through a combination of hard (rip-rap) and soft (vegetative plantings) engineering practices. All sites vary in steepness and have various access points. The streams flow constantly even in drought conditions and all but the unnamed tributary of Wampum Brook are tidally influenced. Currents and depth vary with tide.

1.3 HEALTH AND SAFETY

Before sampling activities commence, potential site hazards (physical, chemical and biological) will be evaluated by the TVS Health and Safety Office. A site specific Health and Safety Plan shall be prepared accordingly.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 CONTACTS AND PERSONNEL

The following is a listing of all contacts and personnel involved in the investigation. All analyses are to be performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, NJDEP- Certification # 13461. All sampling will be performed under the direct supervision of a NJDEP trained sample technician according to the methods described in the NJDEP Field Sampling Procedures Manual (1992) and as defined in this sampling plan.

The following parties are participants in this investigation:

- Environmental Protection Specialist: Joseph Fallon, CHMM
  Employer: U.S. Army, Fort Monmouth Phone Number: (732) 532-6223
- Field Technician: Corey McCormack
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel Wright - Phone Number: (732) 532-4359
  Employer: TECOM-Vinnell Services
  NJDEP Certification No.: 13461
- Field Technician Supervisor: Mark Laura
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Health and Safety Personnel: Bruce Wadlington, Chandra Jennings, and John Wierbowski. Employer: TVS - Phone Number: (732) 532-1706

2.2 SAMPLING PROCEDURES AND PROTOCOL

During the investigation, all samples will be collected with proper attention to quality assurance protocols and in accordance with the guidelines set forth by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May, 1992), the Technical Requirements for Site Remediation (NJAC 7:26E, June, 1993) and the NJDEP Guidance for Sediment Quality Evaluations (November 1998).

2.2.1 SITE ACTIVITES

Site activities shall include recording field conditions and other relevant observations, sampling sediments, plotting sample locations by usc of our Global Positioning Systcm (GPS), decontamination of equipment, and preservation and storage of samples.

2.2.2 SEDIMENT SAMPLING

Sample locations will be determined, sampled, and recorded in the following way:

1. Samples will be taken from clearly discernable depositional areas in and along the streams. In the event that no clear depositional areas can be located, a sample will be taken from the best possible stream bed point at the rate of 1 sample for every 100 feet.
2. Samples will be taken at a depth of 0-6 inches for surface deposits and 6-12 inches for subsurface deposits in each sampling event. Based upon the individual thickness of each depositional area, an 18-24 inch deep sample will also be taken if the desired depth is obtainable.
3. Sampling will commence from downstream, working upstream. Care will be taken to minimize disturbance of sediments and washing of samples as collected.
4. Tide, weather, recent activity, and notable observations will be recorded.
5. A boring log shall be created to note any layers, particle sizes, and defining aspects to each boring.
6. Sampling will be conducted using a hand core sediment sampler.
7. Samples for PCBs analysis will be collected into new, pre-cleaned, 4oz.clear glass jars with Teflon lined caps. All samples will be stored in a cooler at 4 degrees Celsius.
8. After each sampling event, equipment will be decontaminated as stated in section 2.3.
9. Each sample location will be plotted using our GPS.

2.2.3 QA/QC

Quality control samples are required to verify that the sample collection and handling process has not affected the quality of the sediment samples. All field quality control samples will be prepared exactly as regular investigation samples with regard to volume and containers. The following quality control samples will be collected for each batch of samples:

- Field duplicate daily or one every 20 samples; homogenized before splitting.

2.3 EQUIPMENT DECONTAMINATION

Decontamination will be done after every sampling event by the following procedure:

1. Alconox and water wash
2. Water rinse
3. Deionized water rinse
4. Air dry

State of New Jersey
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Directorate of Public Works
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, NJ 07703 - 5101

APR 0 3 2000

Re: Sediment Sampling Plan
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DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101

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Directorate of Public Works

Encl.

United States Army
Directorate of Public Works
Fort Monmouth, New Jersey

Installation Restoration Program
Sediment Sampling Plan for
Nine Former Landfill Sites

March 2000

SITE INVESTIGATION PLAN

Installation Restoration Program
Sediment Sampling Plan for Nine Former Landfill Sites

PREPARED FOR:

JOSEPH FALLON
PROJECT MANAGER
Directorate of Public Works
BUILDING 173
FORT MONMOUTH, NJ 07703
(732)-532-6223

PREPARED BY:

TECOM-VINNELL SERVICES (TVS)
ENVIRONMENTAL OFFICE
BUILDING 173
FORT MONMOUTH, NJ 07703

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This investigation will be conducted by TVS personnel in accordance with the specifications required for collecting sediment samples as determined by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May 1992) and the NJDEP Guidance For Sediment Quality Evaluations (November 1998).

1.2 SITE DESCRIPTION

Mill Creek is located along the northern side of the M-2 landfill (approximate distance 1,400 feet) and along the western side of the M-4 landfill (approximate distance 360 feet) and the M-5 landfill (approximate distance 570 feet). Lafetra Creek runs along the northern side of the M-3 landfill (approximate distance 1,200 feet), joining with Mill Creek to form Parkers Creek. Parkers Creek surrounds the M-8 landfill (approximate distance 1,500 feet) on the western, northern, and eastern sides. It then runs along the western side of the M-18 landfill (approximate distance 700 feet). Husky Brook runs along the northern side of the M-12 landfill, eventually running between the M-12 and M-14 landfills (combined approximate distance 1,700 feet) before flowing into Oceanport Creek. An unnamed tributary of Wampum Brook is located along the northern side of the CW-3A landfill (approximate distance 600 feet). Stream banks along the landfills vary from heavily vegetated with trees and bramble to simply grass. A stream bank restoration project is currently underway at the landfill sites located on the Main Post. The project entails stabilizing the stream banks through a combination of hard (rip-rap) and soft (vegetative plantings) engineering practices. All sites vary in steepness and have various access points. The streams flow constantly even in drought conditions and all but the unnamed tributary of Wampum Brook are tidally influenced. Currents and depth vary with tide.

1.3 HEALTH AND SAFETY

Before sampling activities commence, potential site hazards (physical, chemical and biological) will be evaluated by the TVS Health and Safety Office. A site specific Health and Safety Plan shall be prepared accordingly.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 CONTACTS AND PERSONNEL

The following is a listing of all contacts and personnel involved in the investigation. All analyses are to be performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, NJDEP- Certification # 13461. All sampling will be performed under the direct supervision of a NJDEP trained sample technician according to the methods described in the NJDEP Field Sampling Procedures Manual (1992) and as defined in this sampling plan.

The following parties are participants in this investigation:

- Environmental Protection Specialist: Joseph Fallon, CHMM
  Employer: U.S. Army, Fort Monmouth Phone Number: (732) 532-6223
- Field Technician: Corey McCormack
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel Wright - Phone Number: (732) 532-4359
  Employer: TECOM-Vinnell Services
  NJDEP Certification No.: 13461
- Field Technician Supervisor: Mark Laura
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Health and Safety Personnel: Bruce Wadlington, Chandra Jennings, and John Wierbowski. Employer: TVS - Phone Number: (732) 532-1706

2.2 SAMPLING PROCEDURES AND PROTOCOL

During the investigation, all samples will be collected with proper attention to quality assurance protocols and in accordance with the guidelines set forth by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May, 1992), the Technical Requirements for Site Remediation (NJAC 7:26E, June, 1993) and the NJDEP Guidance for Sediment Quality Evaluations (November 1998).

2.2.1 SITE ACTIVITES

Site activities shall include recording field conditions and other relevant observations, sampling sediments, plotting sample locations by usc of our Global Positioning Systcm (GPS), decontamination of equipment, and preservation and storage of samples.

2.2.2 SEDIMENT SAMPLING

Sample locations will be determined, sampled, and recorded in the following way:

1. Samples will be taken from clearly discernable depositional areas in and along the streams. In the event that no clear depositional areas can be located, a sample will be taken from the best possible stream bed point at the rate of 1 sample for every 100 feet.
2. Samples will be taken at a depth of 0-6 inches for surface deposits and 6-12 inches for subsurface deposits in each sampling event. Based upon the individual thickness of each depositional area, an 18-24 inch deep sample will also be taken if the desired depth is obtainable.
3. Sampling will commence from downstream, working upstream. Care will be taken to minimize disturbance of sediments and washing of samples as collected.
4. Tide, weather, recent activity, and notable observations will be recorded.
5. A boring log shall be created to note any layers, particle sizes, and defining aspects to each boring.
6. Sampling will be conducted using a hand core sediment sampler.
7. Samples for PCBs analysis will be collected into new, pre-cleaned, 4oz.clear glass jars with Teflon lined caps. All samples will be stored in a cooler at 4 degrees Celsius.
8. After each sampling event, equipment will be decontaminated as stated in section 2.3.
9. Each sample location will be plotted using our GPS.

2.2.3 QA/QC

Quality control samples are required to verify that the sample collection and handling process has not affected the quality of the sediment samples. All field quality control samples will be prepared exactly as regular investigation samples with regard to volume and containers. The following quality control samples will be collected for each batch of samples:

- Field duplicate daily or one every 20 samples; homogenized before splitting.

2.3 EQUIPMENT DECONTAMINATION

Decontamination will be done after every sampling event by the following procedure:

1. Alconox and water wash
2. Water rinse
3. Deionized water rinse
4. Air dry

Appendix C

Soil Boring Logs

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-1

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.01	1	SAND, Fine. Dk. Brown/Brown.	1359
8	5344.02	2	SILTY SAND, Fine. Black.	1401

0
4
8
12
16
20
24

04-18-2000 X:\MTECH5\LANDFI~1\M5-1.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-2

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.03	1	SAND, Fine. Brown. SAND, Fine. Brown/Black.	1410
4				
8	5344.04	2	SILTY SAND, Fine. Black.	1412
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-2.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-3

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Med.. Brown.	
			SAND, Fine. Brown/Black.	
	5344.05	1		1413
4				
			SILTY SAND, Fine. Black.	
8	5344.06	2		1415
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-3.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-4

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Lg.. Brown.	
			SAND, Fine. Brown/Black.	
4	5344.07	1		1419
			SAND, Fine. Black.	
8	5344.08	2		1421
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-4.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-5

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Med.. Brown.	
4	5344.09	1	SAND, Fine. Brown/Black. Med. Rounds. Yellow.	1423
8	5344.10	2	SAND, Fine. Black. Med. Rounds. Yellow	1425
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-5.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-6

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.11	1	SAND, Fine. Brown/Black. Med. Rounds. Yellow.	1428
4				
8	5344.12	2	SAND, Fine. Black. Med. Rounds. Yellow.	1430
12			SAND, Fine. Black. Sm. Rounds. Yellow	
16				
20	5344.13	3		1432
24				

04-18-2000 X:\MTECH5\LANDFI-1\M5-6.BOR

BORING LOGS

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-1

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.01	1	SAND, Fine. Dk. Brown/Brown.	1359
8	5344.02	2	SILTY SAND, Fine. Black.	1401

0
4
8
12
16
20
24

04-18-2000 X:\MTECH5\LANDFI~1\M5-1.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-2

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.03	1	SAND, Fine. Brown. SAND, Fine. Brown/Black.	1410
4				
8	5344.04	2	SILTY SAND, Fine. Black.	1412
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-2.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-3

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Med.. Brown.	
			SAND, Fine. Brown/Black.	
	5344.05	1		1413
4				
			SILTY SAND, Fine. Black.	
8	5344.06	2		1415
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-3.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-4

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Lg.. Brown.	
			SAND, Fine. Brown/Black.	
4	5344.07	1		1419
			SAND, Fine. Black.	
8	5344.08	2		1421
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-4.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-5

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Med.. Brown.	
4	5344.09	1	SAND, Fine. Brown/Black. Med. Rounds. Yellow.	1423
8	5344.10	2	SAND, Fine. Black. Med. Rounds. Yellow	1425
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M5-5.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-6

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M5 Landfill Sediments

DATE COMPLETED : 04/13/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M5

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5344.11	1	SAND, Fine. Brown/Black. Med. Rounds. Yellow.	1428
4				
8	5344.12	2	SAND, Fine. Black. Med. Rounds. Yellow.	1430
12			SAND, Fine. Black. Sm. Rounds. Yellow	
16				
20	5344.13	3		1432
24				

04-18-2000 X:\MTECH5\LANDFI-1\M5-6.BOR

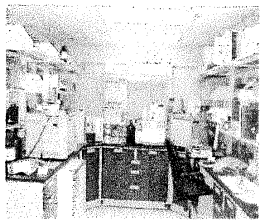
Appendix D

Soil Laboratory Data Sheets

(C)

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: Stream Sediments

M5/Landfill

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M5/ 1 0-6"	5344.01	Sediment	13-Apr-00 13:59	04/13/00
M5/ 1 6-12"	5344.02	Sediment	13-Apr-00 14:01	04/13/00
M5/ 2 0-6"	5344.03	Sediment	13-Apr-00 14:10	04/13/00
M5/ 2 6-12"	5344.04	Sediment	13-Apr-00 14:12	04/13/00
M5/ 3 0-6"	5344.05	Sediment	13-Apr-00 14:13	04/13/00
M5/ 3 6-12"	5344.06	Sediment	13-Apr-00 14:15	04/13/00
M5/ 4 0-6"	5344.07	Sediment	13-Apr-00 14:19	04/13/00
M5/ 4 6-12"	5344.08	Sediment	13-Apr-00 14:21	04/13/00
M5/ 5 0-6"	5344.09	Sediment	13-Apr-00 14:23	04/13/00
M5/ 5 6-12"	5344.10	Sediment	13-Apr-00 14:25	04/13/00
M5/ 6 0-6"	5344.11	Sediment	13-Apr-00 14:28	04/13/00
M5/ 6 6-12"	5344.12	Sediment	13-Apr-00 14:30	04/13/00
M5/ 6 18-24"	5344.13	Sediment	13-Apr-00 14:32	04/13/00
DUP. 0-6"	5344.14	Sediment	13-Apr-00	04/13/00
DUP. 6-12"	5344.15	Sediment	13-Apr-00	04/13/00
DUP. 18-24"	5344.16	Sediment	13-Apr-00	04/13/00

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
PCB's, %SOLIDS

ENCLOSURE:
RESULT
CHAIN OF CUSTODY

5-15-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: J. Fallon
Phone #: X26223
(X)DERA ( )OMA ( )Other:

Project No:
Location: MS Landfill
Stream Sediments

Samplers Name / Company: Corey McCormack, TVS

Analysis Parameters: TCL VOA

Comments: < 4°C

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Remarks / Preservation Method
5344 .01	MS 1 0-6"	4/13/00	1359	Sed	1	
.02	" 1 6-12"		1401			
.03	MS 2 0-6"		1410			
.04	" 2 6-12"		1412			
.05	MS 3 0-6"		1413			
.06	" 3 6-12"		1415			
.07	MS 4 0-6"		1419			
.08	" 4 6-12"		1421			
.09	MS 5 0-6"		1423			
.10	" 5 6-12"		1425			
.11	MS 6 0-6"		1428			
.12	" 6 6-12"		1430			
.13	" 6 18-24"		1432			
.14	Dupe 0-6	↓	—	↓	↓	

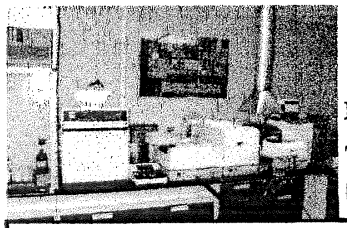
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/13/00 1500				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: ( )Standard 3 wks, (X)Rush 1WK Days, ( )ASAP Verbal ___ Hrs.

Remarks: Tide: Low

print legibly

Coc.xls3/27/00



Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer:

Phone #:

(X)DERA ( )OMA ( )Other:_____

Project No:

Location: MS Landfill
Stream Sediments

Samplers Name / Company: Corey McCormack, TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	PCB's								Comments: / Remarks / Preservation Method
15 Dup	Pipe 6-12"	4/13/00	—	Sed	1	✓								4°C
16	Pipe 18-24"	"	—	"	1	✓								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/13/00				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD

Turnaround time: ( )Standard 3 wks, (X)Rush 10 Days, ( )ASAP Verbal ___ Hrs.

Remarks:
Tide: Low

print legibly

Coc.xls4/11/00

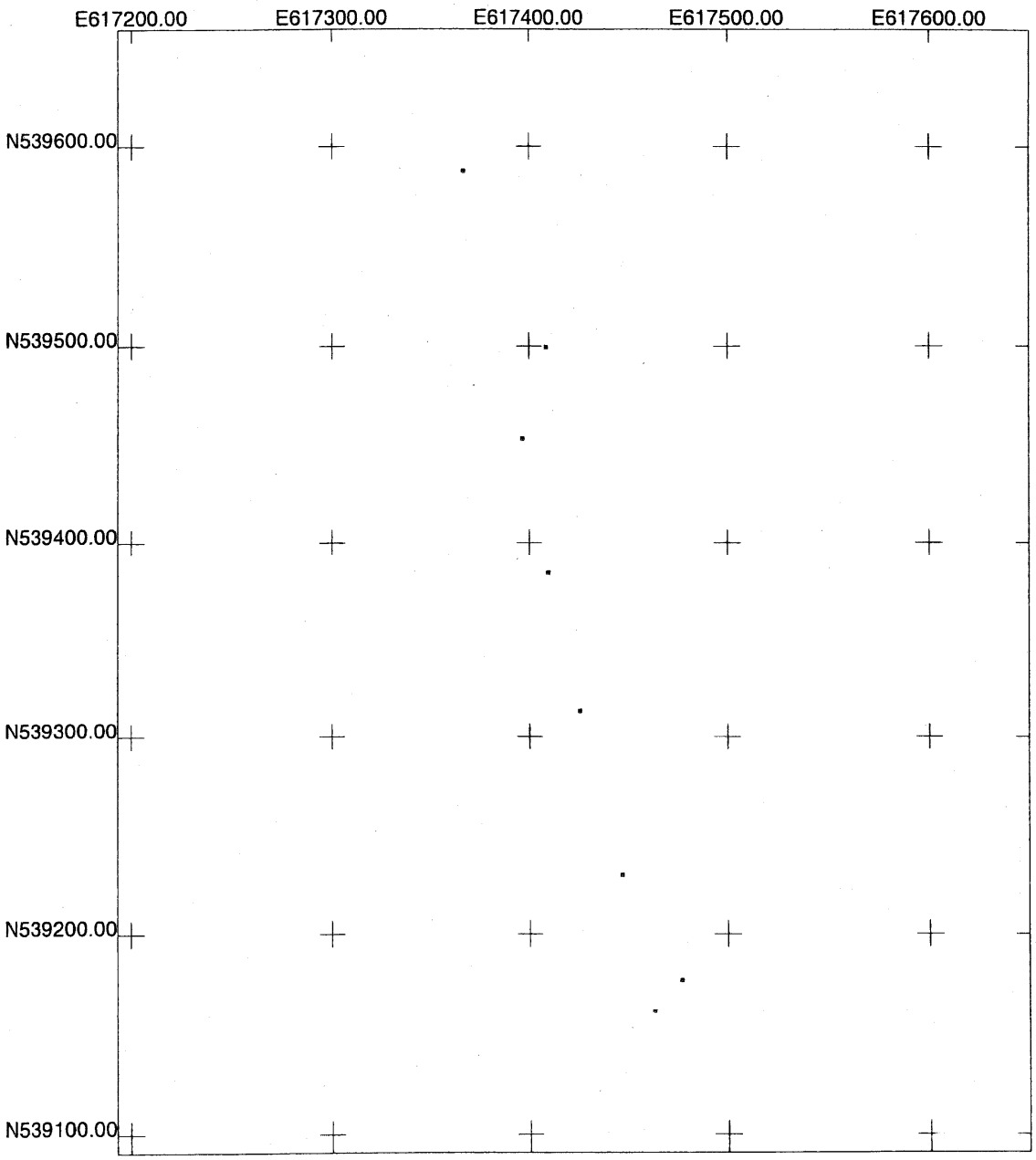
Landfill Stream Sediment PCB's Sample Event Site Field Summary for M5

Mill Creek runs along the western side of the M5 landfill for approximately 570 feet. The entire length of the bank has been worked on as part of the stream bank restoration project. The bank is now covered in large rock, and rip-rap. Previously, it was just grass, with man made materials exposed and falling in to the creek. The streambed has some of this debris still in it.

Flow here is constant and depth varies with the tides. Yet even at low tide there were various pools of about 2-3 feet deep. Weather at the time of sampling was cool, and sunny. Tide was low. There was a rain event two days prior to sampling.

Depositional areas were scattered between pools. Sampling targeted these areas. Where depositional areas were not found, 1 sample per 100 feet was taken.

GPS



M5 Landfill Stream Sediments PCB Samples GPS Map

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

N

Scale 1:1000
0 125.0
US Survey Feet

m5 r042618a.cor
04/27/2000
Pathfinder Office
Trimble

M5 LANDFILL STREAM SEDIMENT PCB'S SAMPLE GPS POSITIONS & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
1	539587.918	617365.81
2	539453.393	617396.056
3	539384.351	617409.493
4	539313.293	617425.252
5	539230.391	617446.732
6	539161.578	617463.032

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
M5 MW14	539177.401	617476.983
M5 MW12	539499.687	617408.478

PCB's

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

Client :	U.S. Army	**Lab. ID # :**	PBLK510
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	
Matrix:	Sediment		
Analyst:	T. Frankovich	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**100.00**	**0.0015**	**ND**	**0.007**	**53.000**	**15.00**
Arochlor 1221	**0.2**	**100.00**	**0.0027**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1232	**0.2**	**100.00**	**0.0019**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1242	**0.2**	**100.00**	**0.0021**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1248	**0.2**	**100.00**	**0.0009**	**ND**	**0.030**	**150.000**	**15.00**
Arochlor 1254	**0.2**	**100.00**	**0.0005**	**ND**	**0.060**	**34.000**	**15.00**
Arochlor 1260	**0.2**	**100.00**	**0.0005**	**ND**	**0.005**	**24.000**	**15.00**
Total PCB	**0.2**	**100.00**	**0.0101**	**ND**	**0.070**	**530.000**	**15.00**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	PBLK511
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	
Matrix:	Sediment		
Analyst:	T. Frankovich	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	100.00	0.0015	ND	0.007	53.000	15.00
Arochlor 1221	0.2	100.00	0.0027	ND	NA	NA	15.00
Arochlor 1232	0.2	100.00	0.0019	ND	NA	NA	15.00
Arochlor 1242	0.2	100.00	0.0021	ND	NA	NA	15.00
Arochlor 1248	0.2	100.00	0.0009	ND	0.030	150.000	15.00
Arochlor 1254	0.2	100.00	0.0005	ND	0.060	34.000	15.00
Arochlor 1260	0.2	100.00	0.0005	ND	0.005	24.000	15.00
Total PCB	0.2	100.00	0.0101	ND	0.070	530.000	15.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.01
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 1 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**75.82**	**0.0019**	**ND**	**0.007**	**53.000**	**15.40**
Arochlor 1221	**0.2**	**75.82**	**0.0035**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1232	**0.2**	**75.82**	**0.0024**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1242	**0.2**	**75.82**	**0.0027**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1248	**0.2**	**75.82**	**0.0011**	**ND**	**0.030**	**150.000**	**15.40**
Arochlor 1254	**0.2**	**75.82**	**0.0007**	**ND**	**0.060**	**34.000**	**15.40**
Arochlor 1260	**0.2**	**75.82**	**0.0006**	**ND**	**0.005**	**24.000**	**15.40**
Total PCB	**0.2**	**75.82**	**0.0130**	**ND**	**0.070**	**530.000**	**15.40**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 1 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**76.07**	**0.0019**	**ND**	**0.007**	**53.000**	**15.30**
Arochlor 1221	**0.2**	**76.07**	**0.0035**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1232	**0.2**	**76.07**	**0.0024**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1242	**0.2**	**76.07**	**0.0027**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1248	**0.2**	**76.07**	**0.0011**	**ND**	**0.030**	**150.000**	**15.30**
Arochlor 1254	**0.2**	**76.07**	**0.0007**	**ND**	**0.060**	**34.000**	**15.30**
Arochlor 1260	**0.2**	**76.07**	**0.0006**	**ND**	**0.005**	**24.000**	**15.30**
Total PCB	**0.2**	**76.07**	**0.0130**	**ND**	**0.070**	**530.000**	**15.30**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.03
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 2 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.74**	**0.0018**	**ND**	**0.007**	**53.000**	**15.09**
Arochlor 1221	**0.2**	**81.74**	**0.0033**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1232	**0.2**	**81.74**	**0.0023**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1242	**0.2**	**81.74**	**0.0026**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1248	**0.2**	**81.74**	**0.0010**	**ND**	**0.030**	**150.000**	**15.09**
Arochlor 1254	**0.2**	**81.74**	**0.0006**	**0.054**	**0.060**	**34.000**	**15.09**
Arochlor 1260	**0.2**	**81.74**	**0.0006**	**ND**	**0.005**	**24.000**	**15.09**
Total PCB	**0.2**	**81.74**	**0.0123**	**0.054**	**0.070**	**530.000**	**15.09**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 2 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**78.21**	**0.0018**	**ND**	**0.007**	**53.000**	**15.92**
Arochlor 1221	**0.2**	**78.21**	**0.0033**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1232	**0.2**	**78.21**	**0.0022**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1242	**0.2**	**78.21**	**0.0026**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1248	**0.2**	**78.21**	**0.0010**	**ND**	**0.030**	**150.000**	**15.92**
Arochlor 1254	**0.2**	**78.21**	**0.0006**	**ND**	**0.060**	**34.000**	**15.92**
Arochlor 1260	**0.2**	**78.21**	**0.0006**	**ND**	**0.005**	**24.000**	**15.92**
Total PCB	**0.2**	**78.21**	**0.0122**	**ND**	**0.070**	**530.000**	**15.92**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.05
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 3 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	80.14	0.0018	ND	0.007	53.000	15.39
Arochlor 1221	0.2	80.14	0.0033	ND	NA	NA	15.39
Arochlor 1232	0.2	80.14	0.0023	ND	NA	NA	15.39
Arochlor 1242	0.2	80.14	0.0026	ND	NA	NA	15.39
Arochlor 1248	0.2	80.14	0.0010	ND	0.030	150.000	15.39
Arochlor 1254	0.2	80.14	0.0006	ND	0.060	34.000	15.39
Arochlor 1260	0.2	80.14	0.0006	ND	0.005	24.000	15.39
Total PCB	0.2	80.14	0.0123	ND	0.070	530.000	15.39

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 3 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**75.84**	**0.0019**	**ND**	**0.007**	**53.000**	**15.61**
Arochlor 1221	**0.2**	**75.84**	**0.0035**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1232	**0.2**	**75.84**	**0.0024**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1242	**0.2**	**75.84**	**0.0027**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1248	**0.2**	**75.84**	**0.0011**	**ND**	**0.030**	**150.000**	**15.61**
Arochlor 1254	**0.2**	**75.84**	**0.0007**	**ND**	**0.060**	**34.000**	**15.61**
Arochlor 1260	**0.2**	**75.84**	**0.0006**	**ND**	**0.005**	**24.000**	**15.61**
Total PCB	**0.2**	**75.84**	**0.0128**	**ND**	**0.070**	**530.000**	**15.61**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.07
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 4 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.99**	**0.0018**	**ND**	**0.007**	**53.000**	**15.11**
Arochlor 1221	**0.2**	**81.99**	**0.0033**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1232	**0.2**	**81.99**	**0.0023**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1242	**0.2**	**81.99**	**0.0026**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1248	**0.2**	**81.99**	**0.0010**	**ND**	**0.030**	**150.000**	**15.11**
Arochlor 1254	**0.2**	**81.99**	**0.0006**	**ND**	**0.060**	**34.000**	**15.11**
Arochlor 1260	**0.2**	**81.99**	**0.0006**	**ND**	**0.005**	**24.000**	**15.11**
Total PCB	**0.2**	**81.99**	**0.0122**	**ND**	**0.070**	**530.000**	**15.11**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 4 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	77.17	0.0019	ND	0.007	53.000	15.63
Arochlor 1221	0.2	77.17	0.0034	ND	NA	NA	15.63
Arochlor 1232	0.2	77.17	0.0023	ND	NA	NA	15.63
Arochlor 1242	0.2	77.17	0.0027	ND	NA	NA	15.63
Arochlor 1248	0.2	77.17	0.0011	ND	0.030	150.000	15.63
Arochlor 1254	0.2	77.17	0.0007	ND	0.060	34.000	15.63
Arochlor 1260	0.2	77.17	0.0006	ND	0.005	24.000	15.63
Total PCB	0.2	77.17	0.0126	ND	0.070	530.000	15.63

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.09
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 5 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**84.87**	**0.0017**	**ND**	**0.007**	**53.000**	**15.64**
Arochlor 1221	**0.2**	**84.87**	**0.0031**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1232	**0.2**	**84.87**	**0.0021**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1242	**0.2**	**84.87**	**0.0024**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1248	**0.2**	**84.87**	**0.0010**	**ND**	**0.030**	**150.000**	**15.64**
Arochlor 1254	**0.2**	**84.87**	**0.0006**	**ND**	**0.060**	**34.000**	**15.64**
Arochlor 1260	**0.2**	**84.87**	**0.0005**	**ND**	**0.005**	**24.000**	**15.64**
Total PCB	**0.2**	**84.87**	**0.0114**	**ND**	**0.070**	**530.000**	**15.64**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 5 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	82.46	0.0018	ND	0.007	53.000	14.97
Arochlor 1221	0.2	82.46	0.0033	ND	NA	NA	14.97
Arochlor 1232	0.2	82.46	0.0023	ND	NA	NA	14.97
Arochlor 1242	0.2	82.46	0.0026	ND	NA	NA	14.97
Arochlor 1248	0.2	82.46	0.0010	ND	0.030	150.000	14.97
Arochlor 1254	0.2	82.46	0.0006	ND	0.060	34.000	14.97
Arochlor 1260	0.2	82.46	0.0006	ND	0.005	24.000	14.97
Total PCB	0.2	82.46	0.0123	ND	0.070	530.000	14.97

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.11
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	80.67	0.0018	ND	0.007	53.000	15.51
Arochlor 1221	0.2	80.67	0.0033	ND	NA	NA	15.51
Arochlor 1232	0.2	80.67	0.0022	ND	NA	NA	15.51
Arochlor 1242	0.2	80.67	0.0026	ND	NA	NA	15.51
Arochlor 1248	0.2	80.67	0.0010	ND	0.030	150.000	15.51
Arochlor 1254	0.2	80.67	0.0006	ND	0.060	34.000	15.51
Arochlor 1260	0.2	80.67	0.0006	ND	0.005	24.000	15.51
Total PCB	0.2	80.67	0.0121	ND	0.070	530.000	15.51

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**77.46**	**0.0019**	**ND**	**0.007**	**53.000**	**15.47**
Arochlor 1221	**0.2**	**77.46**	**0.0034**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1232	**0.2**	**77.46**	**0.0023**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1242	**0.2**	**77.46**	**0.0027**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1248	**0.2**	**77.46**	**0.0011**	**ND**	**0.030**	**150.000**	**15.47**
Arochlor 1254	**0.2**	**77.46**	**0.0007**	**ND**	**0.060**	**34.000**	**15.47**
Arochlor 1260	**0.2**	**77.46**	**0.0006**	**ND**	**0.005**	**24.000**	**15.47**
Total PCB	**0.2**	**77.46**	**0.0127**	**ND**	**0.070**	**530.000**	**15.47**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.13
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.38**	**0.0018**	**ND**	**0.007**	**53.000**	**15.54**
Arochlor 1221	**0.2**	**81.38**	**0.0033**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1232	**0.2**	**81.38**	**0.0022**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1242	**0.2**	**81.38**	**0.0025**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1248	**0.2**	**81.38**	**0.0010**	**ND**	**0.030**	**150.000**	**15.54**
Arochlor 1254	**0.2**	**81.38**	**0.0006**	**ND**	**0.060**	**34.000**	**15.54**
Arochlor 1260	**0.2**	**81.38**	**0.0006**	**ND**	**0.005**	**24.000**	**15.54**
Total PCB	**0.2**	**81.38**	**0.0120**	**ND**	**0.070**	**530.000**	**15.54**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**77.34**	**0.0019**	**ND**	**0.007**	**53.000**	**15.33**
Arochlor 1221	**0.2**	**77.34**	**0.0035**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1232	**0.2**	**77.34**	**0.0024**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1242	**0.2**	**77.34**	**0.0027**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1248	**0.2**	**77.34**	**0.0011**	**ND**	**0.030**	**150.000**	**15.33**
Arochlor 1254	**0.2**	**77.34**	**0.0007**	**ND**	**0.060**	**34.000**	**15.33**
Arochlor 1260	**0.2**	**77.34**	**0.0006**	**ND**	**0.005**	**24.000**	**15.33**
Total PCB	**0.2**	**77.34**	**0.0128**	**ND**	**0.070**	**530.000**	**15.33**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.15
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	78.43	0.0018	ND	0.007	53.000	15.63
Arochlor 1221	0.2	78.43	0.0034	ND	NA	NA	15.63
Arochlor 1232	0.2	78.43	0.0023	ND	NA	NA	15.63
Arochlor 1242	0.2	78.43	0.0026	ND	NA	NA	15.63
Arochlor 1248	0.2	78.43	0.0010	ND	0.030	150.000	15.63
Arochlor 1254	0.2	78.43	0.0007	ND	0.060	34.000	15.63
Arochlor 1260	0.2	78.43	0.0006	ND	0.005	24.000	15.63
Total PCB	0.2	78.43	0.0124	ND	0.070	530.000	15.63

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/ 25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	78.64	0.0019	ND	0.007	53.000	14.99
Arochlor 1221	0.2	78.64	0.0035	ND	NA	NA	14.99
Arochlor 1232	0.2	78.64	0.0024	ND	NA	NA	14.99
Arochlor 1242	0.2	78.64	0.0027	ND	NA	NA	14.99
Arochlor 1248	0.2	78.64	0.0011	ND	0.030	150.000	14.99
Arochlor 1254	0.2	78.64	0.0007	ND	0.060	34.000	14.99
Arochlor 1260	0.2	78.64	0.0006	ND	0.005	24.000	14.99
Total PCB	0.2	78.64	0.0129	ND	0.070	530.000	14.99

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

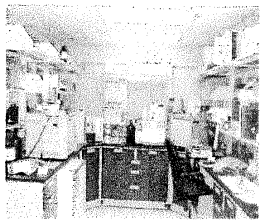
ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

(C)

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: Stream Sediments

M5/Landfill

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M5/ 1 0-6"	5344.01	Sediment	13-Apr-00 13:59	04/13/00
M5/ 1 6-12"	5344.02	Sediment	13-Apr-00 14:01	04/13/00
M5/ 2 0-6"	5344.03	Sediment	13-Apr-00 14:10	04/13/00
M5/ 2 6-12"	5344.04	Sediment	13-Apr-00 14:12	04/13/00
M5/ 3 0-6"	5344.05	Sediment	13-Apr-00 14:13	04/13/00
M5/ 3 6-12"	5344.06	Sediment	13-Apr-00 14:15	04/13/00
M5/ 4 0-6"	5344.07	Sediment	13-Apr-00 14:19	04/13/00
M5/ 4 6-12"	5344.08	Sediment	13-Apr-00 14:21	04/13/00
M5/ 5 0-6"	5344.09	Sediment	13-Apr-00 14:23	04/13/00
M5/ 5 6-12"	5344.10	Sediment	13-Apr-00 14:25	04/13/00
M5/ 6 0-6"	5344.11	Sediment	13-Apr-00 14:28	04/13/00
M5/ 6 6-12"	5344.12	Sediment	13-Apr-00 14:30	04/13/00
M5/ 6 18-24"	5344.13	Sediment	13-Apr-00 14:32	04/13/00
DUP. 0-6"	5344.14	Sediment	13-Apr-00	04/13/00
DUP. 6-12"	5344.15	Sediment	13-Apr-00	04/13/00
DUP. 18-24"	5344.16	Sediment	13-Apr-00	04/13/00

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
PCB's, %SOLIDS

ENCLOSURE:
RESULT
CHAIN OF CUSTODY

5-15-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: J. Fallon
Phone #: X26223
(X)DERA ( )OMA ( )Other:

Project No:
Location: MS Landfill
Stream Sediments

Samplers Name / Company: Corey McCormack, TVS

Analysis Parameters: TCL VOA

Comments: < 4°C

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Remarks / Preservation Method
5344 .01	MS 1 0-6"	4/13/00	1359	Sed	1	
.02	" 1 6-12"		1401			
.03	MS 2 0-6"		1410			
.04	" 2 6-12"		1412			
.05	MS 3 0-6"		1413			
.06	" 3 6-12"		1415			
.07	MS 4 0-6"		1419			
.08	" 4 6-12"		1421			
.09	MS 5 0-6"		1423			
.10	" 5 6-12"		1425			
.11	MS 6 0-6"		1428			
.12	" 6 6-12"		1430			
.13	" 6 18-24"		1432			
.14	Dupe 0-6	↓	—	↓	↓	

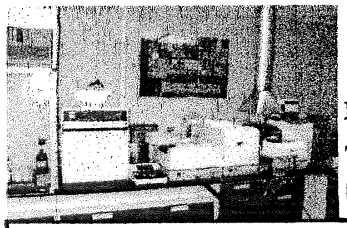
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/13/00 1500				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: ( )Standard 3 wks, (X)Rush 1WK Days, ( )ASAP Verbal ___ Hrs.

Remarks: Tide: Low

print legibly

Coc.xls3/27/00



Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer:

Phone #:

(X)DERA ( )OMA ( )Other:_____

Project No:

Location: MS Landfill
Stream Sediments

Samplers Name / Company: Corey McCormack, TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	PCB's								Comments: / Remarks / Preservation Method
15 Dup	Pipe 6-12"	4/13/00	—	Sed	1	✓								4°C
16	Pipe 18-24"	"	—	"	1	✓								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/13/00				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD

Turnaround time: ( )Standard 3 wks, (X)Rush 10 Days, ( )ASAP Verbal ___ Hrs.

Remarks:
Tide: Low

print legibly

Coc.xls4/11/00

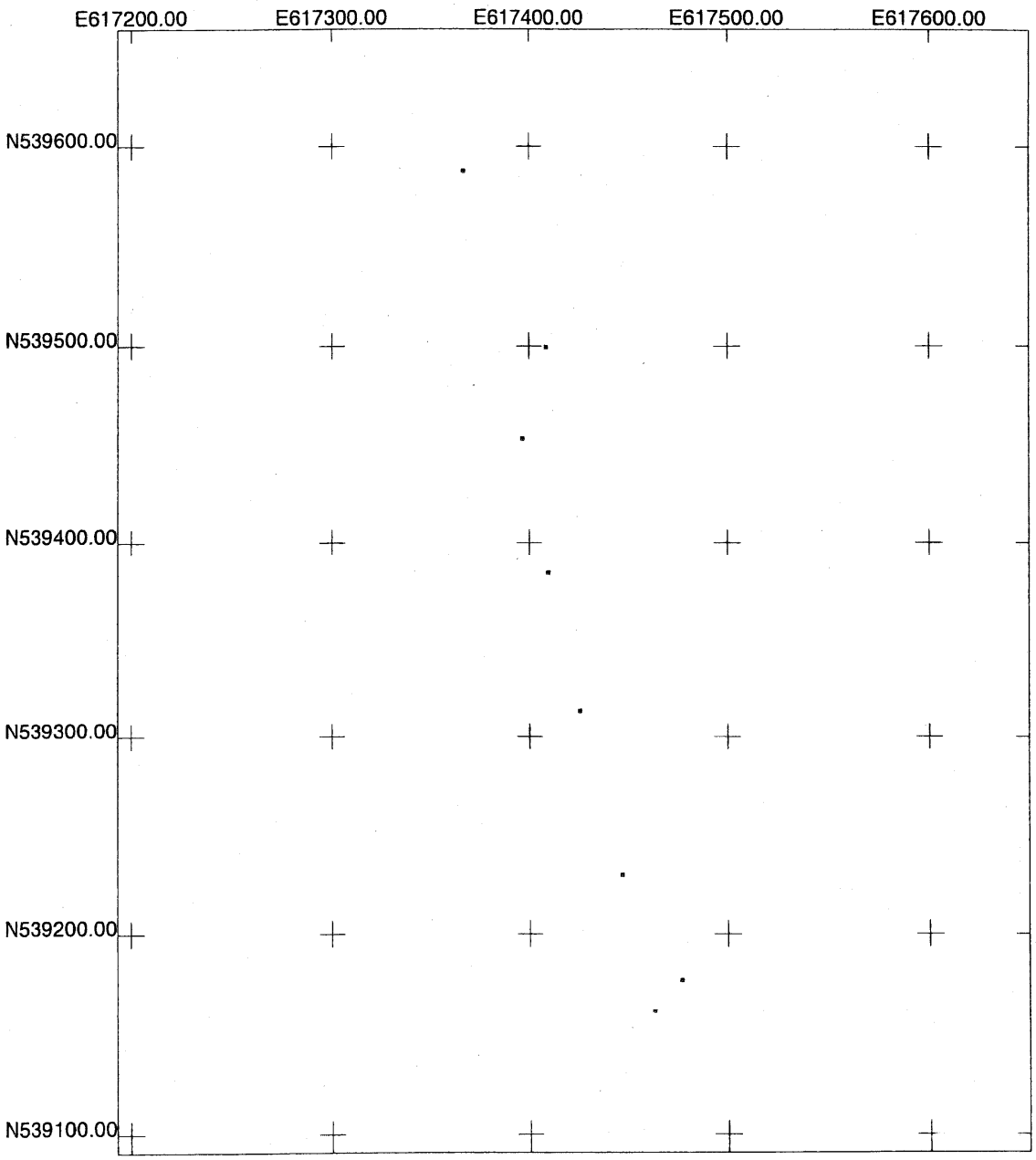
Landfill Stream Sediment PCB's Sample Event Site Field Summary for M5

Mill Creek runs along the western side of the M5 landfill for approximately 570 feet. The entire length of the bank has been worked on as part of the stream bank restoration project. The bank is now covered in large rock, and rip-rap. Previously, it was just grass, with man made materials exposed and falling in to the creek. The streambed has some of this debris still in it.

Flow here is constant and depth varies with the tides. Yet even at low tide there were various pools of about 2-3 feet deep. Weather at the time of sampling was cool, and sunny. Tide was low. There was a rain event two days prior to sampling.

Depositional areas were scattered between pools. Sampling targeted these areas. Where depositional areas were not found, 1 sample per 100 feet was taken.

GPS



M5 Landfill Stream Sediments PCB Samples GPS Map

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

N

Scale 1:1000
0 125.0
US Survey Feet

m5 r042618a.cor
04/27/2000
Pathfinder Office
Trimble

M5 LANDFILL STREAM SEDIMENT PCB'S SAMPLE GPS POSITIONS & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
1	539587.918	617365.81
2	539453.393	617396.056
3	539384.351	617409.493
4	539313.293	617425.252
5	539230.391	617446.732
6	539161.578	617463.032

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
M5 MW14	539177.401	617476.983
M5 MW12	539499.687	617408.478

PCB's

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

Client :	U.S. Army	**Lab. ID # :**	PBLK510
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	
Matrix:	Sediment		
Analyst:	T. Frankovich	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**100.00**	**0.0015**	**ND**	**0.007**	**53.000**	**15.00**
Arochlor 1221	**0.2**	**100.00**	**0.0027**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1232	**0.2**	**100.00**	**0.0019**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1242	**0.2**	**100.00**	**0.0021**	**ND**	**NA**	**NA**	**15.00**
Arochlor 1248	**0.2**	**100.00**	**0.0009**	**ND**	**0.030**	**150.000**	**15.00**
Arochlor 1254	**0.2**	**100.00**	**0.0005**	**ND**	**0.060**	**34.000**	**15.00**
Arochlor 1260	**0.2**	**100.00**	**0.0005**	**ND**	**0.005**	**24.000**	**15.00**
Total PCB	**0.2**	**100.00**	**0.0101**	**ND**	**0.070**	**530.000**	**15.00**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	PBLK511
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	
Matrix:	Sediment		
Analyst:	T. Frankovich	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	100.00	0.0015	ND	0.007	53.000	15.00
Arochlor 1221	0.2	100.00	0.0027	ND	NA	NA	15.00
Arochlor 1232	0.2	100.00	0.0019	ND	NA	NA	15.00
Arochlor 1242	0.2	100.00	0.0021	ND	NA	NA	15.00
Arochlor 1248	0.2	100.00	0.0009	ND	0.030	150.000	15.00
Arochlor 1254	0.2	100.00	0.0005	ND	0.060	34.000	15.00
Arochlor 1260	0.2	100.00	0.0005	ND	0.005	24.000	15.00
Total PCB	0.2	100.00	0.0101	ND	0.070	530.000	15.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.01
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 1 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**75.82**	**0.0019**	**ND**	**0.007**	**53.000**	**15.40**
Arochlor 1221	**0.2**	**75.82**	**0.0035**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1232	**0.2**	**75.82**	**0.0024**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1242	**0.2**	**75.82**	**0.0027**	**ND**	**NA**	**NA**	**15.40**
Arochlor 1248	**0.2**	**75.82**	**0.0011**	**ND**	**0.030**	**150.000**	**15.40**
Arochlor 1254	**0.2**	**75.82**	**0.0007**	**ND**	**0.060**	**34.000**	**15.40**
Arochlor 1260	**0.2**	**75.82**	**0.0006**	**ND**	**0.005**	**24.000**	**15.40**
Total PCB	**0.2**	**75.82**	**0.0130**	**ND**	**0.070**	**530.000**	**15.40**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 1 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**76.07**	**0.0019**	**ND**	**0.007**	**53.000**	**15.30**
Arochlor 1221	**0.2**	**76.07**	**0.0035**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1232	**0.2**	**76.07**	**0.0024**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1242	**0.2**	**76.07**	**0.0027**	**ND**	**NA**	**NA**	**15.30**
Arochlor 1248	**0.2**	**76.07**	**0.0011**	**ND**	**0.030**	**150.000**	**15.30**
Arochlor 1254	**0.2**	**76.07**	**0.0007**	**ND**	**0.060**	**34.000**	**15.30**
Arochlor 1260	**0.2**	**76.07**	**0.0006**	**ND**	**0.005**	**24.000**	**15.30**
Total PCB	**0.2**	**76.07**	**0.0130**	**ND**	**0.070**	**530.000**	**15.30**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.03
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/18/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/20/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 2 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.74**	**0.0018**	**ND**	**0.007**	**53.000**	**15.09**
Arochlor 1221	**0.2**	**81.74**	**0.0033**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1232	**0.2**	**81.74**	**0.0023**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1242	**0.2**	**81.74**	**0.0026**	**ND**	**NA**	**NA**	**15.09**
Arochlor 1248	**0.2**	**81.74**	**0.0010**	**ND**	**0.030**	**150.000**	**15.09**
Arochlor 1254	**0.2**	**81.74**	**0.0006**	**0.054**	**0.060**	**34.000**	**15.09**
Arochlor 1260	**0.2**	**81.74**	**0.0006**	**ND**	**0.005**	**24.000**	**15.09**
Total PCB	**0.2**	**81.74**	**0.0123**	**0.054**	**0.070**	**530.000**	**15.09**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 2 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**78.21**	**0.0018**	**ND**	**0.007**	**53.000**	**15.92**
Arochlor 1221	**0.2**	**78.21**	**0.0033**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1232	**0.2**	**78.21**	**0.0022**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1242	**0.2**	**78.21**	**0.0026**	**ND**	**NA**	**NA**	**15.92**
Arochlor 1248	**0.2**	**78.21**	**0.0010**	**ND**	**0.030**	**150.000**	**15.92**
Arochlor 1254	**0.2**	**78.21**	**0.0006**	**ND**	**0.060**	**34.000**	**15.92**
Arochlor 1260	**0.2**	**78.21**	**0.0006**	**ND**	**0.005**	**24.000**	**15.92**
Total PCB	**0.2**	**78.21**	**0.0122**	**ND**	**0.070**	**530.000**	**15.92**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.05
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 3 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	80.14	0.0018	ND	0.007	53.000	15.39
Arochlor 1221	0.2	80.14	0.0033	ND	NA	NA	15.39
Arochlor 1232	0.2	80.14	0.0023	ND	NA	NA	15.39
Arochlor 1242	0.2	80.14	0.0026	ND	NA	NA	15.39
Arochlor 1248	0.2	80.14	0.0010	ND	0.030	150.000	15.39
Arochlor 1254	0.2	80.14	0.0006	ND	0.060	34.000	15.39
Arochlor 1260	0.2	80.14	0.0006	ND	0.005	24.000	15.39
Total PCB	0.2	80.14	0.0123	ND	0.070	530.000	15.39

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 3 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**75.84**	**0.0019**	**ND**	**0.007**	**53.000**	**15.61**
Arochlor 1221	**0.2**	**75.84**	**0.0035**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1232	**0.2**	**75.84**	**0.0024**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1242	**0.2**	**75.84**	**0.0027**	**ND**	**NA**	**NA**	**15.61**
Arochlor 1248	**0.2**	**75.84**	**0.0011**	**ND**	**0.030**	**150.000**	**15.61**
Arochlor 1254	**0.2**	**75.84**	**0.0007**	**ND**	**0.060**	**34.000**	**15.61**
Arochlor 1260	**0.2**	**75.84**	**0.0006**	**ND**	**0.005**	**24.000**	**15.61**
Total PCB	**0.2**	**75.84**	**0.0128**	**ND**	**0.070**	**530.000**	**15.61**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.07
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 4 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.99**	**0.0018**	**ND**	**0.007**	**53.000**	**15.11**
Arochlor 1221	**0.2**	**81.99**	**0.0033**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1232	**0.2**	**81.99**	**0.0023**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1242	**0.2**	**81.99**	**0.0026**	**ND**	**NA**	**NA**	**15.11**
Arochlor 1248	**0.2**	**81.99**	**0.0010**	**ND**	**0.030**	**150.000**	**15.11**
Arochlor 1254	**0.2**	**81.99**	**0.0006**	**ND**	**0.060**	**34.000**	**15.11**
Arochlor 1260	**0.2**	**81.99**	**0.0006**	**ND**	**0.005**	**24.000**	**15.11**
Total PCB	**0.2**	**81.99**	**0.0122**	**ND**	**0.070**	**530.000**	**15.11**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 4 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	77.17	0.0019	ND	0.007	53.000	15.63
Arochlor 1221	0.2	77.17	0.0034	ND	NA	NA	15.63
Arochlor 1232	0.2	77.17	0.0023	ND	NA	NA	15.63
Arochlor 1242	0.2	77.17	0.0027	ND	NA	NA	15.63
Arochlor 1248	0.2	77.17	0.0011	ND	0.030	150.000	15.63
Arochlor 1254	0.2	77.17	0.0007	ND	0.060	34.000	15.63
Arochlor 1260	0.2	77.17	0.0006	ND	0.005	24.000	15.63
Total PCB	0.2	77.17	0.0126	ND	0.070	530.000	15.63

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.09
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 5 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**84.87**	**0.0017**	**ND**	**0.007**	**53.000**	**15.64**
Arochlor 1221	**0.2**	**84.87**	**0.0031**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1232	**0.2**	**84.87**	**0.0021**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1242	**0.2**	**84.87**	**0.0024**	**ND**	**NA**	**NA**	**15.64**
Arochlor 1248	**0.2**	**84.87**	**0.0010**	**ND**	**0.030**	**150.000**	**15.64**
Arochlor 1254	**0.2**	**84.87**	**0.0006**	**ND**	**0.060**	**34.000**	**15.64**
Arochlor 1260	**0.2**	**84.87**	**0.0005**	**ND**	**0.005**	**24.000**	**15.64**
Total PCB	**0.2**	**84.87**	**0.0114**	**ND**	**0.070**	**530.000**	**15.64**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 5 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	82.46	0.0018	ND	0.007	53.000	14.97
Arochlor 1221	0.2	82.46	0.0033	ND	NA	NA	14.97
Arochlor 1232	0.2	82.46	0.0023	ND	NA	NA	14.97
Arochlor 1242	0.2	82.46	0.0026	ND	NA	NA	14.97
Arochlor 1248	0.2	82.46	0.0010	ND	0.030	150.000	14.97
Arochlor 1254	0.2	82.46	0.0006	ND	0.060	34.000	14.97
Arochlor 1260	0.2	82.46	0.0006	ND	0.005	24.000	14.97
Total PCB	0.2	82.46	0.0123	ND	0.070	530.000	14.97

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.11
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	80.67	0.0018	ND	0.007	53.000	15.51
Arochlor 1221	0.2	80.67	0.0033	ND	NA	NA	15.51
Arochlor 1232	0.2	80.67	0.0022	ND	NA	NA	15.51
Arochlor 1242	0.2	80.67	0.0026	ND	NA	NA	15.51
Arochlor 1248	0.2	80.67	0.0010	ND	0.030	150.000	15.51
Arochlor 1254	0.2	80.67	0.0006	ND	0.060	34.000	15.51
Arochlor 1260	0.2	80.67	0.0006	ND	0.005	24.000	15.51
Total PCB	0.2	80.67	0.0121	ND	0.070	530.000	15.51

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**77.46**	**0.0019**	**ND**	**0.007**	**53.000**	**15.47**
Arochlor 1221	**0.2**	**77.46**	**0.0034**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1232	**0.2**	**77.46**	**0.0023**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1242	**0.2**	**77.46**	**0.0027**	**ND**	**NA**	**NA**	**15.47**
Arochlor 1248	**0.2**	**77.46**	**0.0011**	**ND**	**0.030**	**150.000**	**15.47**
Arochlor 1254	**0.2**	**77.46**	**0.0007**	**ND**	**0.060**	**34.000**	**15.47**
Arochlor 1260	**0.2**	**77.46**	**0.0006**	**ND**	**0.005**	**24.000**	**15.47**
Total PCB	**0.2**	**77.46**	**0.0127**	**ND**	**0.070**	**530.000**	**15.47**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.13
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M5 6 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**81.38**	**0.0018**	**ND**	**0.007**	**53.000**	**15.54**
Arochlor 1221	**0.2**	**81.38**	**0.0033**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1232	**0.2**	**81.38**	**0.0022**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1242	**0.2**	**81.38**	**0.0025**	**ND**	**NA**	**NA**	**15.54**
Arochlor 1248	**0.2**	**81.38**	**0.0010**	**ND**	**0.030**	**150.000**	**15.54**
Arochlor 1254	**0.2**	**81.38**	**0.0006**	**ND**	**0.060**	**34.000**	**15.54**
Arochlor 1260	**0.2**	**81.38**	**0.0006**	**ND**	**0.005**	**24.000**	**15.54**
Total PCB	**0.2**	**81.38**	**0.0120**	**ND**	**0.070**	**530.000**	**15.54**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**0.2**	**77.34**	**0.0019**	**ND**	**0.007**	**53.000**	**15.33**
Arochlor 1221	**0.2**	**77.34**	**0.0035**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1232	**0.2**	**77.34**	**0.0024**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1242	**0.2**	**77.34**	**0.0027**	**ND**	**NA**	**NA**	**15.33**
Arochlor 1248	**0.2**	**77.34**	**0.0011**	**ND**	**0.030**	**150.000**	**15.33**
Arochlor 1254	**0.2**	**77.34**	**0.0007**	**ND**	**0.060**	**34.000**	**15.33**
Arochlor 1260	**0.2**	**77.34**	**0.0006**	**ND**	**0.005**	**24.000**	**15.33**
Total PCB	**0.2**	**77.34**	**0.0128**	**ND**	**0.070**	**530.000**	**15.33**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.15
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	78.43	0.0018	ND	0.007	53.000	15.63
Arochlor 1221	0.2	78.43	0.0034	ND	NA	NA	15.63
Arochlor 1232	0.2	78.43	0.0023	ND	NA	NA	15.63
Arochlor 1242	0.2	78.43	0.0026	ND	NA	NA	15.63
Arochlor 1248	0.2	78.43	0.0010	ND	0.030	150.000	15.63
Arochlor 1254	0.2	78.43	0.0007	ND	0.060	34.000	15.63
Arochlor 1260	0.2	78.43	0.0006	ND	0.005	24.000	15.63
Total PCB	0.2	78.43	0.0124	ND	0.070	530.000	15.63

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/ 25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

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

Client :	U.S. Army	**Lab. ID # :**	5344.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/13/00
	Bldg. 173	**Extraction Date:**	4/19/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/21/00
Analysis:	SW-846 Method 8082	**Location :**	M5 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	0.2	78.64	0.0019	ND	0.007	53.000	14.99
Arochlor 1221	0.2	78.64	0.0035	ND	NA	NA	14.99
Arochlor 1232	0.2	78.64	0.0024	ND	NA	NA	14.99
Arochlor 1242	0.2	78.64	0.0027	ND	NA	NA	14.99
Arochlor 1248	0.2	78.64	0.0011	ND	0.030	150.000	14.99
Arochlor 1254	0.2	78.64	0.0007	ND	0.060	34.000	14.99
Arochlor 1260	0.2	78.64	0.0006	ND	0.005	24.000	14.99
Total PCB	0.2	78.64	0.0129	ND	0.070	530.000	14.99

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

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

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um