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

Installation Restoration Program
Sediment Sampling Plan for
Nine Former Landfill Sites

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SITE INVESTIGATION PLAN

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Sediment Sampling Plan for Nine Former Landfill Sites

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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 use of our Global Positioning System (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