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Formerly Utilized Sites Remedial  
Action Program (FUSRAP)

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**Maywood Chemical Company Superfund Site**

**ADMINISTRATIVE RECORD**

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**Document Number**

**MISS- 128.**

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**US Army Corps  
of Engineers®**

**Time-Critical Removal Action Work Plan  
FUSRAP Maywood Superfund Site  
Maywood, Lodi, and Rochelle Park, New Jersey**

**Site-Specific Environmental Restoration  
Contract No. DACW41-99-D-9001  
Task Order No. 0002  
WAD 02, WBS 06**

**Submitted to:**

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U.S. Army Engineer District, Kansas City  
Corps of Engineers  
700 Federal Building  
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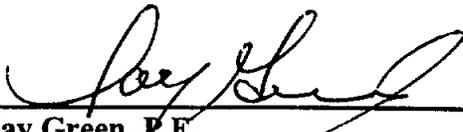
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**January, 2000**

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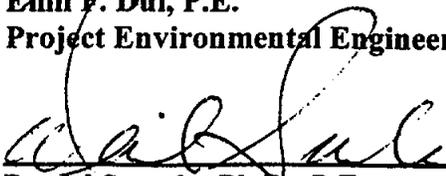
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## **TABLE OF CONTENTS**

### **LIST OF ACRONYMS AND ABBREVIATIONS**

### **EXECUTIVE SUMMARY**

#### **1.0 INTRODUCTION**

- 1.1 FUSRAP Maywood Superfund Site Overview
- 1.2 Overview of USACE Time-Critical Removal Action
- 1.3 Scope of Work
- 1.4 Time-Critical Remedial Action Work Plan Organization

#### **2.0 SITE LOCATION AND CONDITIONS**

- 2.1 Site Location and Physical Setting
- 2.2 Site Radiological Conditions
- 2.3 Site Chemical Conditions
- 2.4 Site Groundwater Conditions

#### **3.0 ROLES AND RESPONSIBILITIES**

- 3.1 USACE
- 3.2 Borough of Maywood
- 3.3 Stone & Webster Team

#### **4.0 AUTHORIZATIONS AND APPROVALS**

#### **5.0 DATA QUALITY OBJECTIVES**

- 5.1 Statement of the Problem
- 5.2 Identifying the Decision
- 5.3 Identifying Inputs to the Decision
- 5.4 Defining the Boundaries of the Work
- 5.5 Developing a Decision Role
- 5.6 Specifying Limits on Decision Errors
- 5.7 Optimizing the Design
- 5.8 Standards/Controls to Ensure Objectives are Met

#### **6.0 REMOVAL ACTION**

- 6.1 Site Preparation/Layout
- 6.2 Soil Excavation and Loading
- 6.3 Swale Stabilization
- 6.4 Stormwater Pipe Cleaning
- 6.5 Site Restoration

#### **7.0 WASTE TRANSPORTATION AND TEMPORARY STORAGE AT MISS**

**8.0 ENVIRONMENTAL MONITORING**

- 8.1 Soil
- 8.2 Surface Water
- 8.3 Air
- 8.4 Analytical Test Methods
- 8.5 Quality Control/Quality Assurance

**9.0 AS-BUILT SURVEY/DRAWINGS**

**10.0 ACCEPTANCE BY BOROUGH OF MAYWOOD**

**11.0 HEALTH & SAFETY**

**12.0 QUALITY ASSURANCE/QUALITY CONTROL**

- 12.1 Field Sampling Quality Control
- 12.2 Laboratory Quality Control
- 12.3 Checklists

**13.0 COMMUNITY RELATIONS**

**14.0 REFERENCES**

## **Figures**

Figure 1 - Location of TCRA

Figure 2 - 1999 Swale/Lodi Brook Sampling Locations

## **Tables**

Table 1 - 1999 Swale/Lodi Brook Sediment Sampling Radiological Analyses

Table 2 - 1999 Swale/Lodi Brook Surface Water Sampling Radiological Analyses

Table 3 - 1999 Swale/Lodi Brook Sediment Sampling Chemical Analyses

## **Appendices**

Appendix A - Action Memorandum, Time-Critical Removal Action, Removal of Contaminated Sediments at Vicinity Properties of the Maywood Interim Storage Site (MISS)  
CERCLIS #NJD980529762

Appendix B - Memorandum of Understanding (Between USACE and Borough of Maywood)

Appendix C - Plan and Profile for the Improvement of Howcroft Road

Appendix D - Permit Equivalency Documents

Appendix E - Standard Operating Procedures

Appendix F - Excavation Work Permit and Hazardous Work Permit

Appendix G - CQCP Checklists

Appendix H - TCRA Schedule/Design Drawings

## List of Acronyms and Abbreviations

CDQMP	FUSRAP Maywood Superfund Site Chemical Data Quality Management Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980, as amended
CQCP	FUSRAP Maywood Superfund Site Contractor Quality Control Plan
DOE	United States Department of Energy
DQO	Data quality objectives
FUSRAP	Formerly Utilized Sites Remedial Action Program
GEPP	FUSRAP Maywood Superfund Site General Environmental Protection Plan
mg/m <sup>3</sup>	Milligrams per cubic meter
MHT&D	FUSRAP Maywood Superfund Site Materials Handling/Transportation and Disposal Plan
MISS	Maywood Interim Storage Site
MOU	Memorandum of Understanding
MS/MD	Matrix spike/matrix duplicate
MS/MSD	Matrix spike/matrix spike duplicate
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NJDEP	New Jersey Department of Environmental Protection
pCi/l	Picocuries per liter
pCi/g	Picocuries per gram
ppm	Parts per million
PRG	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
Ra	Radium
SEC	Safety and Ecology Corporation
SCS	Soil Conservation Service
SOP	Standard Operating Procedure
SOR	Sum of ratios
SLS	Sears Logistical Services
SSHPP	FUSRAP Maywood Superfund Site Safety and Health Plan
SVOC	Semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TCRA	Time-Critical Removal Action
TCRAWP	Time-Critical Removal Action Work Plan
Th	Thorium
U	Uranium
USACE	United States Army Corps of Engineers

USEPA  
VOC

United States Environmental Protection Agency  
Volatile Organic Compound

## **EXECUTIVE SUMMARY**

The United States Army Corps of Engineers (USACE), under Site-Specific Environmental Restoration Contract (SSERC) No. DACW41-99-D-9001, has contracted Stone & Webster Environmental Technology & Services (Stone & Webster), a division of Stone & Webster Engineering Corporation, to perform remediation of the Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Superfund Site, in the Boroughs of Maywood and Lodi, and the Township of Rochelle Park, New Jersey.

Six of the 24 properties that comprise the FUSRAP Maywood Superfund Site abut Lodi Brook and a drainage feature hereinafter referred to as the "swale". Maywood area stormwater empties to the swale at the terminus of West Howcroft Road. Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999 created regional and localized flooding. The extremely heavy rainfall resulted in the backup of stormwater due to sedimentation within the swale and Lodi Brook. Some of the sediments in the swale and Lodi Brook contain elevated levels of radium-226, thorium-232, and uranium-238. These contaminants are associated with the FUSRAP Maywood Superfund Site.

The sediments require removal because additional rainfall has the potential to cause the migration and release of these sediments onto adjacent and nearby properties. The USACE will perform a Time-Critical Removal Action (TCRA) at the swale and Lodi Brook pursuant to the requirements of the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Formal authorization for USACE actions on this matter is presented in the Action Memorandum (Appendix A).

The TCRA addresses the removal of sediments within the swale and Lodi Brook and the stabilization of the swale to reduce the potential for further release. To ensure the proper conduct of work, Stone & Webster has developed this TCRA Work Plan (TCRAWP). The TCRAWP and related design drawings specify how Stone & Webster will implement the TCRA.

## 1.0 INTRODUCTION

### 1.1 FUSRAP Maywood Superfund Site Overview

The Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Superfund Site (hereafter referred to as the Maywood Site) is located in a highly developed area of northeastern New Jersey, in the boroughs of Maywood and Lodi and the Township Rochelle Park. Radiological and chemical contamination occurred as the result of thorium processing from monazite sand and its use in the manufacture of gas mantles by the Maywood Chemical Works from the early 1900s through 1959. The site consists of 88 designated residential, commercial, municipal, and state or federal properties. To date, 64 properties (including all residential and municipal properties) have either been remediated by the U.S. Department of Energy (DOE) or U.S. Army Corps of Engineers (USACE) or are currently being addressed under the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (or National Contingency Plan, NCP, 40 CFR Part 300).

On December 29, 1998, the USACE (New York and Kansas City Districts) issued a Scope of Services to address the remaining 24 commercial and governmental properties which potentially contain deposits of radioactive residues and/or hazardous chemicals in surface and subsurface soil associated with operations from the former Maywood Chemical Works. The objective of the Scope of Services includes all activities necessary to complete a remedial design and remedial action at each remaining property; these have been designated as the Phase II properties.

Each Phase II property has been subject to previous investigations conducted by DOE contractors and/or the New Jersey Department of Environmental Protection (NJDEP). Their investigations have consisted of various amounts and types of data collection activities. The properties are in some cases contiguous. They vary in size and land use development. Radiological conditions vary greatly, both in the estimated volumes requiring remedial action and in the magnitude of the soil concentrations of the radionuclides of concern.

Six of the 24 Phase II properties abut Lodi Brook and a drainage feature hereafter referred to as the "swale" (see Figure 1). Maywood area stormwater empties to the swale at a point at West Howcroft Road. These properties include:

- 23 West Howcroft Road (Maywood Furniture Corp./Maywood Equipment Corp.)
- 29 NJ Route 17 N (FedEx Building)
- 85-101 NJ Route 17 N (Architectural Windows Building)
- 137 NJ Route 17 N (Uniform Fashions Building)
- 167 NJ Route 17 N (Former Sunoco Gas Station)

- 149-151 Maywood Avenue (Sears Logistical Services (SLS))

## 1.2 Overview of USACE Time-Critical Removal Action

Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999, and additional heavy rains over the following two weeks created regional and localized flooding. The extremely heavy rainfall caused the swale and Lodi Brook to backup due to sedimentation within the swale and Lodi Brook. Some of the sediments in the swale and Lodi Brook contain elevated levels of radium-226, thorium-232, and uranium-238. The sediments require removal, because additional rainfall has the potential to cause the migration, and release, of hazardous contaminants onto adjacent and nearby properties.

Given this situation, the USACE has determined the need to perform a time-critical removal action (TCRA) (see Appendix A for a copy of the Action Memorandum) to remove contaminated sediments. The sediments will be removed from the swale and Lodi Brook in the vicinity of the Maywood Interim Storage Site (MISS) so that the flow can be restored. The TCRA was developed pursuant to the requirements of CERCLA and the NCP. Section 300.415(b)(2) of the NCP provides eight criteria, any one of which can justify the need for a removal action to be considered in determining whether a removal action is warranted for a release of a hazardous substance or pollutant or contaminant. The situation at the swale and Lodi Brook satisfies at least one of the eight criteria: "weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released." The sedimentation in the swale and Lodi Brook resulted from flooding. Additional flooding or rainfall in the area could result in additional sedimentation, and obstructed flow of surface water may cause additional releases of these hazardous contaminants from the site.

## 1.3 Scope of Work

This work plan has been prepared to implement the *Action Memorandum, Time-Critical Removal Action, Removal of Contaminated Sediments at Vicinity Properties of the Maywood Interim Storage Site (MISS) CERCLIS #NJD980529762*. The memorandum is included in Appendix A.

FUSRAP contaminated and non-contaminated sediments within the swale and portions of Lodi Brook will be removed as defined by this TCRA Work Plan (TCRAWP) and related design drawings. All FUSRAP contaminated soil, vegetation, and debris will be transported to the MISS for storage pending characterization and final disposal at a permitted facility. After the removal of the sediments, additional measures will be taken in the swale to stabilize surfaces and reduce the potential for future FUSRAP material erosion and transport downstream. Non-FUSRAP but otherwise contaminated soils will not be reused on-site, but will be disposed by the USACE.

In aggregate, the measures to be taken under this scope include the following:

- Obtaining all necessary approvals for initiation of site activities,
- Assuring Community Relations and information services related to project activities,
- Site preparation,
- Coordinating with PSE&G and others for relocation or stabilization of overhead utilities,
- Clean out of stormwater pipes contributing to the swale flow (to be performed by the Borough of Maywood) consistent with the established Memorandum of Understanding (MOU), included in Appendix B,
- Reestablishing effective hydraulic flow, through excavation and filling, consistent with the enclosed engineering drawings,
- Establishing the horizontal alignment and side slopes of the swale consistent, to the extent possible, with the original plan (Plan and Profile for the Improvement of Howcroft Road, Sheet 1 of 3, Circa 1961, included in Appendix C),
- Installing geosynthetic fabric and riprap or gabion baskets in the swale to minimize the potential for further entrainment and erosion,
- Installing scour and sediment control areas (areas of extremely low velocity),
- Disposing of all non-FUSRAP, but otherwise contaminated materials at a permitted facility.
- Transporting all FUSRAP contaminated materials to the MISS for temporary storage pending characterization and final disposal at a permitted facility,
- Placing non-contaminated sediments along the swale banks,
- Restoring areas disturbed by the project activities,
- Monitoring the soil, surface water, and air for potential releases of hazardous contaminants onto adjacent or nearby properties during the removal action.

## 1.4 Time-Critical Removal Action Work Plan Organization

The TCRAWP is organized into various sections as described below:

- Section 1.0, **Introduction**, presents a generalized overview of the time-critical removal action.
- Section 2.0, **Site Location and Conditions**, provides information on the properties affected by the time-critical removal action.
- Section 3.0, **Roles and Responsibilities**, summarizes the organization and approach of the work, defines responsibilities and proposed project schedule for the fieldwork.
- Section 4.0, **Authorizations and Approvals**, discusses authorizations and approvals that are required to implement the TCRAWP.
- Section 5.0, **Data Quality Objectives**, specifies the quality of data required to support decisions made during investigation and construction activities, based on the end uses of the data being collected.
- Section 6.0, **Removal Action**, provides information on how the removal action will occur, including mobilization, soil excavation, installation of erosion control measures, and demobilization.
- Section 7.0, **Waste Transportation and Temporary Storage at MISS**, identifies the route and method for transportation of all FUSRAP contaminated materials to the MISS.
- Section 8.0, **Environmental Monitoring**, describes the measures that will be undertaken to monitor the environment prior to, during, and following the time-critical removal action.
- Section 9.0, **As-built Survey/Drawings**, describes how an as-built survey will be prepared for the completed work in the swale and portions of Lodi Brook following the completion of all sediment removal and stabilization activities.
- Section 10.0, **Acceptance by Borough of Maywood**, provides information on the project transfer to and acceptance by the Borough of Maywood.
- Section 11.0, **Health and Safety**, summarizes the health and safety measures that will be required during all phases of the project.

- Section 12.0, **Quality Assurance/Quality Control**, summarizes the quality assurance/quality control (QA/QC) requirements for all phases of the project.
- Section 13.0, **Community Relations**, summarizes the community relations activities that will be performed as part of the TCRAWP.
- Section 14.0, **References**, identifies documents used to prepare this plan or are essential to its implementation.

## **2.0 SITE LOCATION AND CONDITIONS**

### **2.1 Site Location and Physical Setting**

The location of the TCRA is on or adjacent to six of the 24 commercial and government properties that comprise the Phase II properties, as shown on Figure 1. The drainage swale originates at a culvert near 23 West Howcroft Road and runs through/adjacent to the properties listed below before discharging to Lodi Brook:

- 23 West Howcroft Road (Maywood Furniture Corp./Maywood Equipment Corp.)
- 29 NJ Route 17 N (FedEx Building)
- 85-101 NJ Route 17 N (Architectural Windows Building)
- 137 NJ Route 17 N (Uniform Fashions Building)
- 167 NJ Route 17 N (Former Sunoco Gas Station)
- 149-151 Maywood Avenue (SLS)

Only that portion of Lodi Brook that runs through 167 NJ Route 17 North will be disturbed as part of the planned action.

The TCRAWP Design Drawing No. TCRA-2 (included in Appendix H) shows the property survey for the swale and Lodi Brook.

The swale is an engineered feature dating back nearly four (4) decades, as shown by a design drawing provided by the Borough of Maywood, dated March 1961 (see Appendix C for a copy of the drawing, Sheet 1 of 3). The drawing shows the proposed design of the stormwater pipe from the corner of Maywood Avenue and West Howcroft Road, west to the end of West Howcroft Road. In addition, it shows the design of a typical section of the proposed drainage ditch (i.e., swale). The swale was designed to be two feet wide at the base with sides slopes of two feet horizontal and one foot vertical. No other swale enhancement features are shown (e.g., riprap) and the horizontal alignment is not delineated on that drawing or the other two companion drawings. The USACE has overlain, thereon, the current routing of the swale. This information is contained in Appendix C, Sheet 1 of 3, Approximate Limits of Swale (1999) Superimposed.

Historic information about any engineering features of Lodi Brook was not available.

## 2.2 Site Radiological Conditions

After Hurricane Floyd in September 1999 and additional heavy rains thereafter, the USACE collected a total of 52 sediment samples from 15 discrete locations (see Figure 2) along the swale and in a small section of Lodi Brook (just above their confluence and downstream of the confluence). Sample locations were obtained at approximately 100-ft. intervals beginning from the stormwater culvert at West Howcroft Road. Samples were collected in the sediment/silt layers. Samples were collected at 6-inch intervals down to firm, native soil or clay, using a hand auger. Sampling was complete in each area once firm, native soil or clay was encountered. The sediment layer was 3 ft. at the deepest location (sample identification - 1A).

The sample identification numerical nomenclature indicates the sample locations in approximately 100 ft. intervals from the outfall at West Howcroft Road; sample identification "1" indicates that the sample was collected approximately 100 feet from the outfall; sample identification "2" indicates that the sample was collected approximately 200 feet from the outfall and so forth (NOTE: Samples 12, 13, 14 & 15 were actually collected after the initial sampling effort; thus, their numeric value is *not* representative of their distance from the outfall at West Howcroft Rd).

The "A, B, C" designation refers to the actual side of the swale or Lodi Brook from which the samples were collected. For sample locations 1-7, 14, and 15, "A" refers to south bank, "B" refers to center, & "C" refers to north bank. For sample locations 8-13, "A" refers to east bank, "B" refers to center, and "C" refers to west bank. All 52 samples were dried, pulverized, and analyzed with the on-site gamma spectrometry system.

Radioactivity concentrations (see Table 1) in the sediment at locations 1, 2, and 3 (along the first 300 feet of the swale from the West Howcroft Road culvert) were at or near background levels. Elevated (i.e., above background) levels of all three radioisotopes of concern were detected in the swale beyond location 3 with the highest concentrations extending just past location 3 and up to location 7. Radioactivity concentrations in the sediment layer of Lodi Brook upstream of the point of confluence revealed levels of thorium-232 up to 16.3 pCi/g (sample identification - 13A). At present, levels of thorium-232 above 5 pCi/g are considered to require management.

In addition to the sediment samples, 15 surface water samples were collected from the subject area. One-gallon containers of water were collected from the swale and from Lodi Brook. Sample ID numerical nomenclature is consistent with the soil sample locations. All surface water samples were shipped to Severn Trent Laboratories in Whippany NJ for alpha spectrometry analysis for radium-226, thorium-232, and uranium-238. The surface water samples were filtered at the laboratory, preserved, and then analyzed.

Radioactivity concentrations of thorium-232 and radium-226 in surface water are shown in Table 2. All results for these two radioisotopes were < 1 pCi/L with the exception of

sample location 12 that showed thorium-232 at 1.2 pCi/L. Uranium-238 water analyses revealed concentrations up to the 11.8 pCi/L encountered at sample location 7. This is also the location with the highest uranium-238 concentration in the sediment.

### 2.3 Site Chemical Conditions

Eleven additional sediment samples were collected during November 1999 to determine the chemical characteristics of the soil sediment in the swale and portions of Lodi Brook. The locations were at or adjacent to those areas sampled for radiological analysis (see Figure 2). Other samples were collected for QA/QC purposes. All samples were shipped to Severn Trent Laboratories in Whippany NJ. Each sample was analyzed for Target Compound List (TCL) and Target Analyte List (TAL) constituents in accordance with the appropriate SW-846 methods.

Initial inspection of the data indicates that the concentrations of the following PAHs: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)anthracene exceeded the NJDEP Residential Direct Contact Soil Cleanup Criteria (proposed NJAC 7:26) in sample locations 1, 2, 3, 4, and 8. In addition, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene exceeded the same criteria in samples 2 and 3 and indeno(1,2,3-cd)pyrene only exceeded its' criterion in sample 1. For pesticides, the NJDEP Residential Direct Contact Soil Cleanup Criteria were exceeded for dieldrin in samples 2, 4, and 5. The concentration of the PCB Aroclor-1254 exceeded the residential screening level in samples 4 and 5. Acetone was detected in all samples analyzed for the presence of volatile organic compounds. However, this is believed to be due to a combination of laboratory contamination and acidification of samples with bisulfate, which has been shown to trigger decomposition of natural biologically produced compounds. Methylene chloride and methylethyl ketone (or 2-butanone), both common laboratory contaminants, were present in low parts-per-billion (ppb) levels.

For metals several parameters exceeded the residential soil cleanup criteria, as shown on Table 3. Arsenic was above the residential screening criteria in three samples; chromium was above the residential screening criteria in five samples based on hexavalent criteria but below trivalent criteria for all samples; lead was above the residential screening criteria in five samples; and thallium was above the residential screening criteria in six samples.

### 2.4 Site Groundwater Conditions

Two groundwater monitoring wells are located approximately 360 feet north of the swale. Based on measurements from these monitoring wells during November 1999, the groundwater level is at an elevation of 43.86 feet National Geodetic Vertical Datum 1929 (NGVD). Two additional wells are located approximately 40 feet north of the swale. Based on historical data (1992) from the Maywood Chemical Company Site - *Final*

*Remedial Investigation Report*, the groundwater level from these wells varies between an elevation of 41.14 and 43.40 feet NGVD. The flow of groundwater is generally believed to be in a southerly direction in the vicinity of the swale.

The potential for encountering groundwater in the open excavation is considered likely because the swale and Lodi Brook inverts are between 40.59 and 42.99 feet NGVD. Therefore during construction, appropriate measures must be taken to mitigate any adverse effects to the excavation base. Measures to be implemented include working downgradient to upgradient in the swale and Lodi Brook, stabilizing the base and side slopes of the swale with filter fabric and riprap immediately following the removal of sediment, and preventing the build-up of water within the excavation.

### **3.0 ROLES AND RESPONSIBILITIES**

#### **3.1 USACE**

The 1998 Energy and Water Development Appropriations Act assigned FUSRAP, including the FUSRAP Maywood Superfund Site, to the USACE for remediation under CERCLA and the NCP. The USACE will be the overall project manager for the TCRAWP.

#### **3.2 Borough of Maywood**

The MOU between the USACE and the Borough of Maywood identifies the role the Borough will play in implementing the TCRAWP. The MOU is included in Appendix B.

#### **3.3 Stone & Webster Team**

As USACE's contractor, Stone & Webster Environmental Technology & Services is responsible for preparing the TCRAWP. In addition, the TCRAWP will be implemented by the Stone & Webster Team Site Superintendent who will have full authority to direct project scope and schedule for all activities. Stone & Webster will be responsible for the overall direction of the removal action. Several Stone & Webster subcontractors will support the Task as follows:

- Franklin Environmental Services, Inc.: will be responsible for all construction and transportation activities related to the removal action.
- Safety and Ecology Corporation (SEC): will be responsible for radiological and chemical monitoring of soil sediment prior to, during, and following the removal action. In addition, SEC will be responsible for collecting all soil, water, and air samples. SEC will also perform gamma spectrometry analysis in the MISS onsite laboratory on soil samples to determine if the soil is classified as a FUSRAP waste.
- Garden State Engineering Surveying & Planning: will provide horizontal and vertical survey control prior to, during, and following the removal action.
- Severn Trent Laboratories: will be responsible for analyzing all surface water samples for radiological and chemical constituents, all sediment samples for chemical analysis, and radiological soil sediment samples for QA/QC purposes. Duplicate samples will be collected from approximately 10% of the soil sediment sample locations.

### **3.3.1 Site Superintendent**

The Stone & Webster Site Superintendent is responsible for effective day-to-day management of all operations. The Site Superintendent has responsibilities that specifically include the following:

- Managing all scope, schedule, and budget issues related to the implementation of the TCRA Work Plan.
- Managing the Stone & Webster Team members towards unified, productive project accomplishment
- Directing communication and liaison with the USACE
- Coordinating with the Borough of Maywood
- Managing FUSRAP contaminated materials at the MISS pending characterization, and disposal at a permitted facility.

### **3.3.2 Field Operations Leader**

The Field Operations Leader, reporting to the Site Superintendent, is responsible for the following:

- The appropriateness, adequacy, and timeliness of the construction services provided.
- The day-to-day conduct of the work, including the integration of subcontractors responsible for implementing the TCRA Work Plan.
- Ongoing QA/QC during performance of the work
- On-site decisions regarding waste removal, storage, and transportation.

### **3.3.3 Site Safety and Health Officer and Radiation Safety Officer**

The responsibilities of the site safety health personnel are discussed in the FUSRAP Maywood Superfund Site Safety and Health Plan (SSHP). Responsibilities of the Site Safety and Health Officer include the following:

- Advises the Site Superintendent and Field Operations Leader on all aspects of health and safety during the TCRA.

- Conducts inspections to determine if operations are being conducted in accordance with the SSHP, USACE requirements, and OSHA.
- Performs or provides oversight to all air monitoring performed during the TCRA.
- Suspends operations at the project site if there are nonconformances with the SSHP.

Responsibilities of the Radiation Safety Officer includes the following:

- Conducting and evaluating airborne radioactivity surveys.
- Establishing protective barriers and posting appropriate radiological signs.
- Performing and documenting personnel and equipment decontamination.
- Implementing the radiation protection program.
- Developing, approving, and issuing radiological work permits.

### **3.3.3 Sampling Coordinator**

The Sampling Coordinator will be responsible for overseeing all sampling and analysis activities, including: preparing sample containers for collection; managing field sampling records; laboratory chain-of-custody, and other sampling related documentation; coordinating laboratory sample pick-ups; and/or packaging and shipping samples.

#### 4.0 AUTHORIZATIONS AND APPROVALS

The *Action Memorandum, Time-Critical Removal Action, Removal of Contaminated Sediments at Vicinity Properties of the Maywood Interim Storage Site (MISS) CERCLIS #NJ0980529762* was approved by the USACE in December 1999 and cites Section 104(a)(1)(A) of CERCLA as the basis of authorization for the Removal Action. Section 104(a)(1)(A) provides that the President may undertake a removal action "...whenever any hazardous substance is released or there is a substantial threat of such release into the environment."

The United States Environmental Protection Agency (USEPA) and NJDEP Project Managers for the Maywood Site were notified of the TCRA. Both the USEPA and NJDEP were issued copies of the TCRAWP.

The Borough of Maywood has reviewed this TCRAWP. Review comments have been incorporated where appropriate. In addition, an approval letter from the Borough of Maywood Administrator has been received and is included in Appendix D.

The USACE has prepared a permit equivalency document for a Statewide General Permit No. 4 for the activities that will be performed as part of the TCRAWP. In addition, the permit equivalency document requested a Letter of No Jurisdiction, in accordance with New Jersey Administrative Code (NJAC) 7:7A *et seq* and 7.13 *et seq* from the NJDEP regarding stream encroachment regulations. The permit equivalency document is included in Appendix D. As part of the permit application process, Stone & Webster has notified property owners in the Boroughs of Maywood and Lodi, and the Township of Rochelle Park who are within 200 feet of the properties that abut the swale and affected parts of Lodi Brook of the activities to be performed as part of the TCRAWP.

A permit equivalency document for soil erosion and sediment control has been prepared and filed with the Soil Conservation Service (SCS). A copy of this document is included in Appendix D.

USACE approval of the TCRAWP, preparation of the permit equivalency documents and other approvals discussed above authorizes the Stone & Webster Team to implement the TCRA per the TCRAWP.

## 5.0 DATA QUALITY OBJECTIVES

The Data Quality Objective process is described in the FUSRAP Maywood Superfund Site Chemical Data Quality Management Plan (CDQMP) and is addressed in Sections 5.1 through 5.8 below.

### 5.1 Statement of the Problem

This action is being pursued due to the potential migration and release of FUSRAP hazardous contaminants onto adjacent and nearby properties. The problem can be remediated by removing the surface contaminated layers and reestablishing the hydraulic capability of the engineered swale and Lodi Brook, through excavation and filling within the swale and excavation within Lodi Brook; a secondary objective is to stabilize the swale. This is not considered a final remediation. The DQO scoping team includes the TCRAWP Task Manager, Contractor Quality Control System Manager, and the Project Chemist. The Site Superintendent will make all soil removal and field implementation decisions.

#### 5.1.1 Conceptual Model Development

As stated in Section 1.2, extremely heavy rainfall from Hurricane Floyd in mid-September of 1999 and subsequent rainfall events caused the swale water to backup due to sedimentation within the swale and Lodi Brook. Some of the sediments in the swale and Lodi Brook contain elevated levels of radium-226, thorium-232, and uranium-238. The sediments require removal because additional rainfall has the potential to cause the migration, and release of FUSRAP wastes onto adjacent and nearby properties. Past data (see Tables 1 and 2) indicate that the radionuclide contamination is expected to fall between the following ranges in sediment and surface water:

	<u>Sediment (pCi/g)</u>	<u>Surface Water (pCi/l)</u>
Thorium-232	0 to 124	0 to 1.2
Radium-226	0 to 7	0 to 0.4
Uranium-238	0 to 23	0 to 12

#### 5.1.2 Potential Receptors

There exists the potential for migration or dispersion of the swale and Lodi Brook contamination and potential exposure of the public to radiological contamination via the air pathway should the swale or affected areas of Lodi Brook become dry or via direct contact by individuals who may be passing through or congregating in this area.

### **5.1.3 Funding and Schedule**

The USACE has obligated sufficient funds to implement the TCRAWP and dispose of all contaminated materials generated as a result of the TCRA.

The TCRA will be completed within approximately 30 days from the USACE Notice to Proceed. An additional 7 days will be required to perform post-TCRA environmental monitoring. Further laboratory analysis of surface water and sediment samples will continue for approximately 30 days following the collection of the last surface water sample. A project schedule is provided in Appendix H. A project close-out report will be prepared within three months of receipt of the USACE Notice to Proceed.

### **5.2 Identifying the Decision**

The decision is: soil, vegetation, and debris within the swale and Lodi Brook will be removed to establish an appropriate hydraulic grade. This is the objective of the TCRAWP. Those swale and Lodi Brook sediments above the appropriate hydraulic grade line and within the horizontal alignment will be excavated. FUSRAP contaminated sediments will be shipped to the MISS for storage pending characterization and final disposal at a permitted facility. Non-contaminated soils may be used as fill on-site. Non-contaminated soils that are not used onsite and Non-FUSRAP but otherwise contaminated soils will be removed by the USACE for off-site disposal.

### **5.3 Identifying Inputs to the Decision**

The information required to resolve the decision as to what sediment must be removed to produce the appropriate hydraulic grade has been obtained from surveying the area, specifically the culverts at West Howcroft Road, the confluence of the swale and Lodi Brook, and NJ Route 17 North and reviewing original design information presented in Appendix C.

### **5.4 Defining the Boundaries of the Work**

The boundaries of the work are limited to the areas in and around the swale and Lodi Brook that have been identified as being above the appropriate hydraulic grade line and within the planned horizontal alignment of the swale. The sediment to be removed is defined as sediments to a depth to establish a hydraulic grade and surrounding swale bank material consistent with a need to produce continued hydraulic flow.

### **5.5 Developing a Decision Rule**

There is no decision rule for establishing the hydraulic grade. This decision to implement a Removal Action has already been made to reduce the likelihood of a swale or Lodi Brook overflow condition with potential migration of contaminated material.

### **5.6 Specifying Limits on Decision Errors**

The soil excavation line has been established as 0.1 feet below/outside the grade/alignment survey lines shown on the drawings to account for the maximum possible error incurred during surveying.

### **5.7 Optimizing the Design**

The objective of the removal action is to restore the hydraulic grade and to prevent offsite migration of contaminants caused by potential flooding. Thus, "optimizing" the design is not an issue for this action. The hydraulic grade will be restored based on survey data previously collected, as shown on the TCRA Design Drawings.

### **5.8 Standards/Controls to Ensure Objectives Are Met**

The analytical data used as inputs to the DQO process must be of known and of sufficient quality to support the end use of the data. Analytical data of known and acceptable quality for the intended use were generated by the implementation of carefully chosen (QA/QC) protocols, which are described in Section 12.0 of this Work Plan.

## 6.0 REMOVAL ACTION

The TCRA Design Drawings in Appendix H detail the design and specifications for the removal action and include the following:

- TCRA-1: Cover Sheet and Index to Drawings
- TCRA-2: Existing Site Layout Map
- TCRA-3: Site Preparation/Layout
- TCRA-4: Limits of Site Work
- TCRA-5: Miscellaneous Details
- TCRA-6: Construction Notes and Specifications

The design is not meant to be a permanent solution. The purpose of the design is to restore flow in the swale and Lodi Brook and protect FUSRAP contaminated soils in the swale from migrating or being released.

Waste handling will be in conformance with the FUSRAP Maywood Superfund Site Materials Handling/Transportation and Disposal Plan (MHT&D). The plan addresses the actions necessary to ensure compliance for the management of waste generated from the FUSRAP Maywood Superfund Site.

Discussed below are key steps in the removal action.

### 6.1 Site Preparation/Layout

To prepare for the removal action it will be necessary to perform various activities. These will include the following:

- Constructing a laydown area
- Constructing ingress/egress pathways from existing roads
- Installing temporary construction fencing, silt fencing, and other erosion control measures
- Constructing a temporary downgradient dam at the point where the swale meets Lodi Brook and constructing a temporary dam in front of the storm inlet line at West Howcroft Road to temporarily bypass the existing swale flow around the removal action

- Placing appropriate signage around the construction area
- Establishing survey baseline control alongside the swale and Lodi Brook, and
- Relocating or stabilizing utility pole 61071MW, pursuant to PSE&G requirements.

TCRAWP Design Drawing No. TCRA-3 shows where these activities will be performed.

## 6.2 Soil Excavation and Loading

To establish the appropriate hydraulic grade within the swale and Lodi Brook, soil, vegetation, and debris will be removed. Depending on the moisture content of the removed soil, the soil may be placed temporarily adjacent to the excavation on filter fabric or loaded directly into trucks. This will be determined in the field. Any soils with free water will be allowed to dry by placing the soil adjacent to the swale or Lodi Brook prior to loading and transporting to the MISS. Silt fence will prevent suspended solids from the draining water to migrate off the work area. Unless watertight trucks are available, only non-saturated soils will be directly loaded onto trucks for transport to the MISS. Wherever materials are loaded onto trucks filter fabric will be placed on the ground surface, in the immediate loading area to collect and contain spilled material.

As the sediment removal activity progresses, the swale base will be surveyed to assure that the appropriate hydraulic grade and alignment is achieved, consistent with the enclosed drawings. In areas that have been over-excavated, clean soil will be placed to raise the grade. One sample analysis for Target Compound List (TCL), Target Analyte List (TAL), Ra-226, Th-232, and U-238 must be submitted for each borrow source. All efforts will be made to reduce areas where ponding could occur within the swale.

FUSRAP contaminated soils will be segregated from non-contaminated soils. Only FUSRAP contaminated soils will be transported to the MISS (material that is contaminated will be determined, as described in Section 8.1). Non-contaminated excavated material, supplemented by clean material from an off-site source will be used to backfill overexcavated areas. Non-FUSRAP but otherwise contaminated soils will not be reused on-site, but will be disposed by the USACE at a permitted facility.

The temporary downstream dam at the confluence of the swale and Lodi Brook will be used to control the migration of suspended solids from the swale to Lodi Brook. Filter fabric will be laid across the dam to collect potentially contaminated particles. The fabric will be monitored and routinely replaced as necessary.

### **6.3 Swale Stabilization**

Following the excavation of all sediments and the development of the hydraulic grade, a geosynthetic fabric will be placed along the length of the drainage swale. Riprap or gabion baskets (clean gravel and/or cobble that is placed in a metal or wire cage) will then be placed over the fabric. The riprap or gabion baskets will serve to protect the fabric and reduce the potential for erosion to occur within the swale. If there is groundwater intrusion into the swale or heavy rains are anticipated during the construction, the bottom will be covered immediately with the fabric and stabilization materials. Otherwise the fabric and riprap or gabion baskets will be placed along the swale once all sediment have been removed.

### **6.4 Stormwater Pipe Cleaning**

During this phase of the work the Borough of Maywood consistent with the MOU will remove sediments in all contributing stormwater piping. This will be accomplished by power washing all sediments from catch basins and piping into the drainage swale. Power washing the pipe and catch basins will address the current problem of sediment build-up in the upgradient piping. This work needs to be performed following construction of the temporary dam at the confluence of Lodi Brook and the swale and prior to the initiation of excavation activities in the swale.

The non-contaminated sediments will be collected and used as on-site fill or removed for off-site disposal by the Borough of Maywood consistent with the MOU. It is assumed that all sediments upgradient from the West Howcroft Road culvert are not radiologically contaminated soils. Whenever it is determined that FUSRAP contaminated soils are present, then the USACE will manage these materials appropriately.

A clean transition will be made between all existing pipes that discharge into the swale and the stabilized swale. Depending on the condition of the existing pipes, some pipe sections may need to be replaced, extended, and/or reduced. This will be determined in the field based on field observations.

### **6.5 Site Restoration**

Following the completion of all construction activities, the surrounding work area that is disturbed by the removal action will be restored to previous site conditions. Areas disturbed by mechanical or other means will be revegetated and/or protected to prevent soil erosion. All temporary fencing and other structures will be removed. For erosion control, silt fencing will be left in place and maintained by the USACE until a vegetative cover is established. The temporary gravel roadways will be left in place to support future USACE activities. These roadways will provide additional erosion control in areas where there is surface runoff.

## 7.0 WASTE TRANSPORTATION AND TEMPORARY STORAGE AT MISS

Soil transportation will be in conformance with the MHT&D that addresses the actions necessary to ensure compliance for the management of waste generated from the FUSRAP Maywood Superfund Site.

All excavated FUSRAP contaminated soils, vegetation, and debris will be transported to the MISS for temporary storage pending characterization and final disposal at a permitted facility. Each truck leaving the Removal Action work area site will be decontaminated and surveyed to assure that no contaminated materials leave in an uncontrolled manner. When appropriate, each truck will be washed or brush cleaned per the CDQMP Field Standard Procedure, SW-MDW-506. The decontamination stations are shown on TCRA Design Drawing No. TCRA-3.

All trucks will follow designated routes to and from the MISS. The routes have been established for safety and to reduce encumbrances to adjacent property owners. Trucks that are loaded north of the swale will proceed as described below; they will return to the work area by following the route in reverse:

- Exit the work area and follow the SLS Private Road (Block 124 Lot 30) to Maywood Avenue.
- Turn left onto Maywood Avenue and proceed north on Maywood Avenue.
- Turn left onto West Hunter Avenue and proceed west on West Hunter Avenue.
- Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

Trucks that are loaded south of the swale will proceed as described below; they will return to the work area by following the route in reverse:

- Exit the work area in an easterly direction and follow West Howcroft Avenue to Maywood Avenue.
- Turn left onto Maywood Avenue and proceed north on Maywood Avenue.
- Turn left onto West Hunter Avenue and proceed west on West Hunter Avenue.
- Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

Trucks that are loaded west of Lodi Brook (former Sunoco, Block 124 Lot 2) will proceed as follows:

- Exit the work area and proceed onto NJ Route 17 North
- Follow NJ Route 17 North
- Turn right onto Hergesell Avenue and proceed to West Central Avenue.

- Turn left onto West Central Avenue and proceed east to Maywood Avenue.
- Turn right onto Maywood Avenue and proceed south to West Hunter Avenue.
- Turn right onto West Hunter Avenue and proceed west on West Hunter Avenue. Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

Trucks returning to the former Sunoco, Block 124 Lot 2, will proceed as follows:

- Exit the MISS and Stepan Company gates onto West Hunter Avenue.
- Proceed east on West Hunter Avenue to Maywood Avenue.
- Turn right onto Maywood Avenue and proceed south to Essex Street.
- Turn right onto Essex Street and proceed west to the NJ Route 17 North on-ramp.
- Turn right onto the NJ Route 17 North on-ramp.
- Follow the on-ramp to Block 124 Lot 2.
- Turn right onto Block 124 Lot 2.

At the MISS the FUSRAP materials will be off-loaded per the direction of the MISS Site Superintendent. The MISS Site Superintendent will obtain custody of the materials and manage them appropriately.

Each truck leaving the MISS will be decontaminated and surveyed to assure that no contaminated materials leave the MISS in an uncontrolled manner. When appropriate, each truck will be washed or brush cleaned.

## 8.0 ENVIRONMENTAL MONITORING

Environmental Monitoring will be in conformance with the CDQMP and the FUSRAP Maywood Superfund Site General Environmental Protection Plan (GEPP). Media to be monitored during the remedial action include soil, surface water, and air.

### 8.1 Soil

Excavation at the swale and Lodi Brook will generate waste soils, vegetation, and debris. Only FUSRAP contaminated materials will be transported to the MISS. Therefore it will be necessary to both monitor and sample excavated materials during the excavation. Each bucket full of soil will be monitored prior to loading onto a truck or stockpiled on-site. For radiological monitoring, soil will be surveyed with a sodium iodide meter per CDQMP procedure SW-MWD-404. For chemical monitoring, soil will be surveyed with a photoionization detector per CDQMP procedure SW-MWD-401 or a flame ionization detector per CDQMP procedure SW-MWD-402.

After the appropriate hydraulic grade and alignment have been developed, and no additional excavation is required, soil samples will be collected from the base and side slopes for radiological and chemical analysis. This information will be used during the future remedial design phase to determine if any additional remedial activities will be necessary in the removal action area.

Soil samples for radiological analysis will be collected every 25 linear feet. Individual samples will be taken from the base and side slopes. These samples will be analyzed in the MISS on-site gamma spectroscopy laboratory using a Canberra Model 3020, 30% P-Type Coaxial HPGe Detector. Ten percent of the radiological samples will be sent off-site for laboratory analysis. These samples will be for QA/QC purposes.

In addition, in areas where FUSRAP contamination will remain (based on radiological sample analysis), soil samples will be taken approximately every 100 feet for chemical analysis. Sample containers and preservatives will be selected based on Tables 4-1 and 4-2 of the CDQMP Quality Assurance Project Plan (QAPP). Encore samplers will be used to collect samples for volatile organic compound (VOC) analysis. Each chemical sample will be consigned to Severn Trent Laboratories (or the approved project laboratory) for pickup at the MISS, the day the samples are collected. Samples will be analyzed for target compound list (TCL) and target analyte list (TAL) constituents in accordance with the appropriate SW-846 methods (see section 8.4 of the TCRAWP). A 30-day turnaround time will be specified. Testing of samples shall be performed in accordance with the Contract Laboratory standard operating procedures (SOPs) contained in Appendix D of the CDQMP.

To meet QA/QC sampling requirements for chemical constituents, one duplicate sample will be obtained for every 10 samples collected. These samples will also be sent to an

off-site laboratory for analysis. In addition, one trip, and one rinsate blank sample will be collected for each day of chemical sampling.

All soil sampling and related activities will be in accordance with the CDQMP. The following CDQMP procedures will be implemented:

- SW-MWD-301 – Sediment Sampling
- SW-MWD-504 – Labeling, Packaging and Shipping Environmental Samples
- SW-MWD-506 – Decontamination
- SW-MWD-507 – Field Notebook Content and Control
- SW-MWD-508 – Procedure for Shipping Radiologically Contaminated Environmental Samples

The radiological and chemical analysis will aid the pre-design investigation (PDI) and remedial design efforts. The analysis will determine if any additional remedial actions are necessary at the swale and/or within the removal action affected portions of Lodi Brook. If it is determined that additional action is necessary, the decision document and remedial design will document these requirements.

## **8.2 Surface Water**

Downgradient surface water will be monitored to determine the surface water quality. Surface water samples will be collected within Lodi Brook immediately north of NJ Route 17 North. The location will be the same as that sampled as part of the GEPP environmental monitoring program. Surface water samples will be collected one day prior to and at the end of each day sediment soils are disturbed when there is flow in the swale. An additional surface water sample will be collected immediately following the completion of the removal action and one-week thereafter.

Sample containers and preservatives will be selected based on Tables 4-1 and 4-2 of the CDQMP QAPP. Each surface water sample will be consigned to Severn Trent Laboratories (or the existing project laboratory) for pickup at the MISS, the day the samples are collected. Each filtered sample will be analyzed for radium-226, thorium-232, and uranium-238. A 30-day turnaround time will be required. Testing of samples shall be performed in accordance with the Contract Laboratory standard operating procedures (SOPs) contained in Appendix D of the CDQMP.

All surface water sampling will be in accordance with the CDQMP. The following CDQMP procedures will be implemented:

- SW-MWD-302 – Surface Water Sampling
- SW-MWD-504 – Labeling, Packaging and Shipping Environmental Samples
- SW-MWD-506 – Decontamination
- SW-MWD-507 – Field Notebook Content and Control
- SW-MWD-508 – Procedure for Shipping Radiologically Contaminated Environmental Samples

### 8.3 Air

Air monitoring will be conducted in accordance with the FUSRAP Maywood Superfund Site Safety and Health Plan (SSHP), Section 8.0 “Air Monitoring Program.” Both personal and ambient air monitoring will be performed. Real-time (direct reading) instruments will measure the following:

- Oxygen
- Flammable/combustible vapors
- Organic vapors
- Dust

Action levels above background have been established for oxygen, flammable and combustible vapors, organic vapors, and dust. Those levels and associated actions are:

- Oxygen (At work site) < 20% - stop work
- Lower explosive level (At work site) > 10% - stop work
- Organic Vapors (At work site) 5 ppm – upgrade PPE  
10 ppm – stop work
- Dust (At work site) 1 mg/m<sup>3</sup> – upgrade PPE

In addition, both personal and ambient air monitoring will be performed for airborne radioactive particulate using the appropriate air sampling equipment. Radioactive air sample analysis will be accomplished by gross alpha counting utilizing a low background gas flow proportional detector, and/or by alpha spectroscopy.

#### **8.4 Analytical Test Methods**

For the radiological parameters, laboratory analytical test methods to be used shall be as follows:

- RAS01901 – Radium-226 in Water by Radon Emanation
- RAS08800 – Rapid HF Soil Dissolution
- RAS09100 – Isotopic Thorium, Uranium, Plutonium and Americium
- RAS02001 – Gamma Emitters in Water
- RAS02501 – Gamma Emitters in Soil

A combination of RAS08800 and RAS01901 shall be used for Radium-226 in soil.

For the TCL/TAL analytes, the analytical methods to be used shall be as follows:

- SVOCs - SW-846 8270C
- VOCs - SW-846 8260B
- Pesticides/PCBs - SW-846 8081A/8082
- Metals - SW-846 6010B
- Cyanide - SW-846 9010B

#### **8.5 Quality Control/Quality Assurance**

The FUSRAP Maywood Superfund Site Contractor Quality Control Plan (CQCP) presents project quality protocols for the entire project. All monitoring and sampling efforts will be in conformance with this plan. Section 12 of this TCRAWP summarizes QA/QC requirements for this effort based on the CQCP.

## 9.0 AS-BUILT SURVEY/DRAWINGS

An as-built survey of the swale and Removal Action affected portions of Lodi Brook will be prepared and provided to the Borough of Maywood. Only those areas disturbed or modified will be surveyed. The as-built survey will be used for future remedial design purposes, as required. In addition, it will document what actions the USACE has taken to mitigate potential flooding and release of hazardous substances or pollutants or contaminants onto adjacent and nearby properties, consistent with the Action Memorandum.

Construction photos will be taken during and after the Removal Action to document changes that have been made.

## **10.0 ACCEPTANCE BY BOROUGH OF MAYWOOD**

Upon completion, a final inspection will be conducted with the Borough of Maywood to document that work has been completed in accordance with the TCRAWP and design drawings. In addition, the Borough of Maywood will be informed of what future measures the USACE will take to monitor the swale so that hazardous contaminants will not be released onto adjacent and nearby properties.

If future monitoring detects potentially releasable FUSRAP contaminated sediments within the swale, the Stone & Webster Team will manage these materials per the MHT&D Plan. The contaminated sediments will be removed from the swale, transported to the MISS, characterized, and disposed at a permitted facility.

## 11.0 HEALTH & SAFETY

The removal action will be performed in compliance with the SSHP. The SSHP describes the safety and health guidelines developed to protect onsite personnel, visitors, and the public from physical harm and exposure to hazardous materials during all project activities. In addition, the plan serves the following functions:

- Site-specific Safety and Health Plan
- Accident Prevention Plan
- Emergency Response Plan
- Emergency Action Plan
- Contingency Plan
- Fire Prevention Plan, and
- Radiation Protection Plan

The SSHP addresses all activities planned as part of the TCRAWP. Included in Appendix F is the completed Excavation Work Permit and the Hazardous Work Permit for the project.

## **12.0 QUALITY ASSURANCE/QUALITY CONTROL**

### **12.1 Field Sampling Quality Control**

Quality control guidelines described in Section 1.0 of the Maywood Field Sampling Plan (part of the CDQMP) shall be followed. Field QC sample types include trip blanks, temperature blanks, equipment rinsate blanks, and duplicates. At least one trip blank shall accompany each shipment of samples designated for volatile organic analysis. Equipment rinsate blanks must be collected each day that sampling occurs or each decontamination event, whichever is less, per matrix per parameter per field crew, per equipment type (assuming reusable sampling equipment is used). Field duplicate samples must be identified or numbered so that the laboratory does not know the samples are duplicates (thus the term "blind duplicates"), thus eliminating potential bias in the test measurement. Field duplicate samples must represent no less than 10 % of the total number of samples per matrix per parameter per area of study.

### **12.2 Laboratory Quality Control**

Matrix spike/matrix spike duplicates (MS/MSD) for organics and matrix spike/matrix duplicates (MS/MD) for inorganics and radionuclides are laboratory QC samples that will be collected in the field. The laboratory shall treat no less than 10% of all Maywood samples (per matrix) as MS/MSD pairs, analyze at least one blank spike (or LCS) with the entire analyte list for a given method per matrix per sample batch (a sample batch contains a maximum of 20 environmental samples), add surrogate spikes to all samples as required by the method, and analyze method blanks every 12 hours of analysis time or every batch, whichever is more frequent. For radiological parameters, the lab shall analyze method blanks, matrix spike samples (MSSs), LCSs, and replicates (also called lab duplicates) at a minimum frequency of 5% of field samples per matrix or per sample preparation batch, whichever is more frequent.

QC criteria for spike recoveries are provided in Sections 4.4.2.1 through 4.4.2.3 of the CDQMP QAPP. All other requirements within Sections 4.4.2.1 - 4.4.2.3, which have been provided to the contract laboratory, must be followed. In addition, the QC method requirements for the analytical methods to be employed (see list in Section 8.4) must be followed. The contract laboratory, Severn Trent Laboratory of Whippany, New Jersey, shall adhere to the requirements described in its Quality Assurance Management Plan, which is Appendix F of the CDQMP.

### **12.3 Checklists**

The CQCP presents project quality protocols for the entire project. In addition to the overall plan, the following specific checklists, included in Appendix G, will apply:

- Mobilization Checklist
- Utility Clearance
- Instrument Calibration
- Surveying
- Field Decontamination
- Demobilization/Decontamination
- Data Management
- Field Safety
- Sample Collection
- Packaging, Storing, and Shipment of Samples

### 13.0 COMMUNITY RELATIONS

In accordance with the NCP and USEPA guidance outlined in *Community Relations in Superfund: A Handbook* (January 1992), an administrative record file for the TCRA will be established within 60 days of the start of onsite removal action. The file will be located at the FUSRAP Public Information Center, 75A West Pleasant Avenue, Maywood, NJ. A Notice of Availability of the administrative record file will also be published in a major local newspaper. The notice will also designate a USACE spokesperson for the removal action.

In addition to these required actions, the USACE will publicize plans for the removal action in a fact sheet to be distributed to the community mailing list and made available at the Public Information Center. The USACE will also notify affected property owners of pending removal activities on their properties in accordance with existing Rights-of-Entry Agreements. Briefings on the removal action will also be provided to affected property owners, tenants and their employees as appropriate.

## 14.0 REFERENCES

- Borough of Maywood, 1961. *Plan and Profile for the Improvement of Howcroft Road (Sheet 1 of 3, 2 of 3, and 3 of 3)*, March 1961
- CH2M Hill, 1994. Maywood Chemical Company Site, Maywood, Bergen County, New Jersey: Administrative Order on Consent (Index No. II-CERCLA-70104) and Administrative Order (Index No. II-CERCLA-10105) - *Final Remedial Investigation Report*, November 1994
- Stone & Webster, 1999. *Chemical Data Quality Management Plan*, October 1999.
- Stone & Webster, 1999. *Contractor Quality Control Plan*, October 1999.
- Stone & Webster, 1999. *General Environmental Protection Plan*, November 1999.
- Stone & Webster, 1999. *Materials Handling/Transportation and Disposal Plan*, June 1999.
- Stone & Webster, 1999. *Site Safety and Health Plan*, August 1999.
- USACE, 1999. *Action Memorandum Time-Critical Removal Action Removal of Contaminated Sediments at Vicinity Properties of the Maywood Interim Storage Site (MISS) CERCLIS #NJD980529762*, December 1999.
- USEPA, 1992. *Community Relations in Superfund: A Handbook*, January 1992.

**Table 1**  
**1999 Swale/Lodi Brook Sediment Sampling**  
**Radiological Analyses (pCi/g)**

SAMPLE ID	Depth Interval (Average)																	
	0-0.5 Feet			0.5-1.0 Feet			1.0-1.5 Feet			1.5-2.0 Feet			2.0-2.5 Feet			2.5-3.0 Feet		
	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238
1A	0.468	0.947	ND	0.454	0.751	0.285	0.358	0.546	ND	0.372	0.631	ND				0.49	0.58	0
2C	0.466	0.595	ND	0.504	0.537	ND	0.411	0.525	ND	0.457	0.491	ND						
3C	0.585	2.21	0.952	0.6	1.12	0.922	0.637	0.961	2.39									
14C	0.436	0.733	ND	0.488	0.635	ND	0.555	0.828	2.881	0.523	0.672	ND	1.876	<b>8.249</b>	ND			
15C	<b>5.361</b>	<b>71.003</b>	22.556	1.999	<b>99.145</b>	17.94	1.276	<b>6.515</b>	0.685	1.232	<b>7.466</b>	ND						
4C	<b>7.185</b>	<b>80.1</b>	ND	4.175	<b>124.13</b>	39.1	1.71	<b>16.94</b>	7.3									
5C	<b>7.27</b>	<b>64.52</b>	ND	<b>5.94</b>	<b>51.37</b>	17.8	3.01	<b>19.73</b>	ND	1.45	<b>7.46</b>	0.75						
6B	3.86	<b>47.37</b>	13.26	3.87	<b>44.08</b>	14.59												
7B	2.42	<b>27.75</b>	22.74	1.72	<b>10.29</b>	14.96	0.599	1.25	1.9									
8A	1.54	<b>6.16</b>	8.25															
9C	1.62	<b>9.96</b>	7.66	1.41	<b>7.64</b>	4.32	0.739	1.86	ND									
10A	0.679	2.06	ND	0.586	0.818	ND	0.505	0.64	ND									
11A	0.504	1.94	ND	0.478	0.672	ND												
12A	2.823	<b>12.256</b>	2.585	1.538	1.548	1.398												
13A	2.811	<b>16.307</b>	ND	1.112	1.459	1.852												
Average	2.535	22.927	5.200	1.777	24.585	8.083	0.98	4.980	1.516	0.807	3.344	0.15	1.876	8.249		0.49	0.58	0

Notes: Results have not been corrected for background.

Bold indicates that the concentration exceeds 5 pCi/g for radium-226 and thorium-232, and 50 pCi/g for uranium-238.

Samples were collected in October 1999.

Areas shaded represent soils not sampled.

**Table 2**  
**1999 Swale/Lodi Brook Surface Water Samples**  
**Radiological Analyses (pCi/l)**

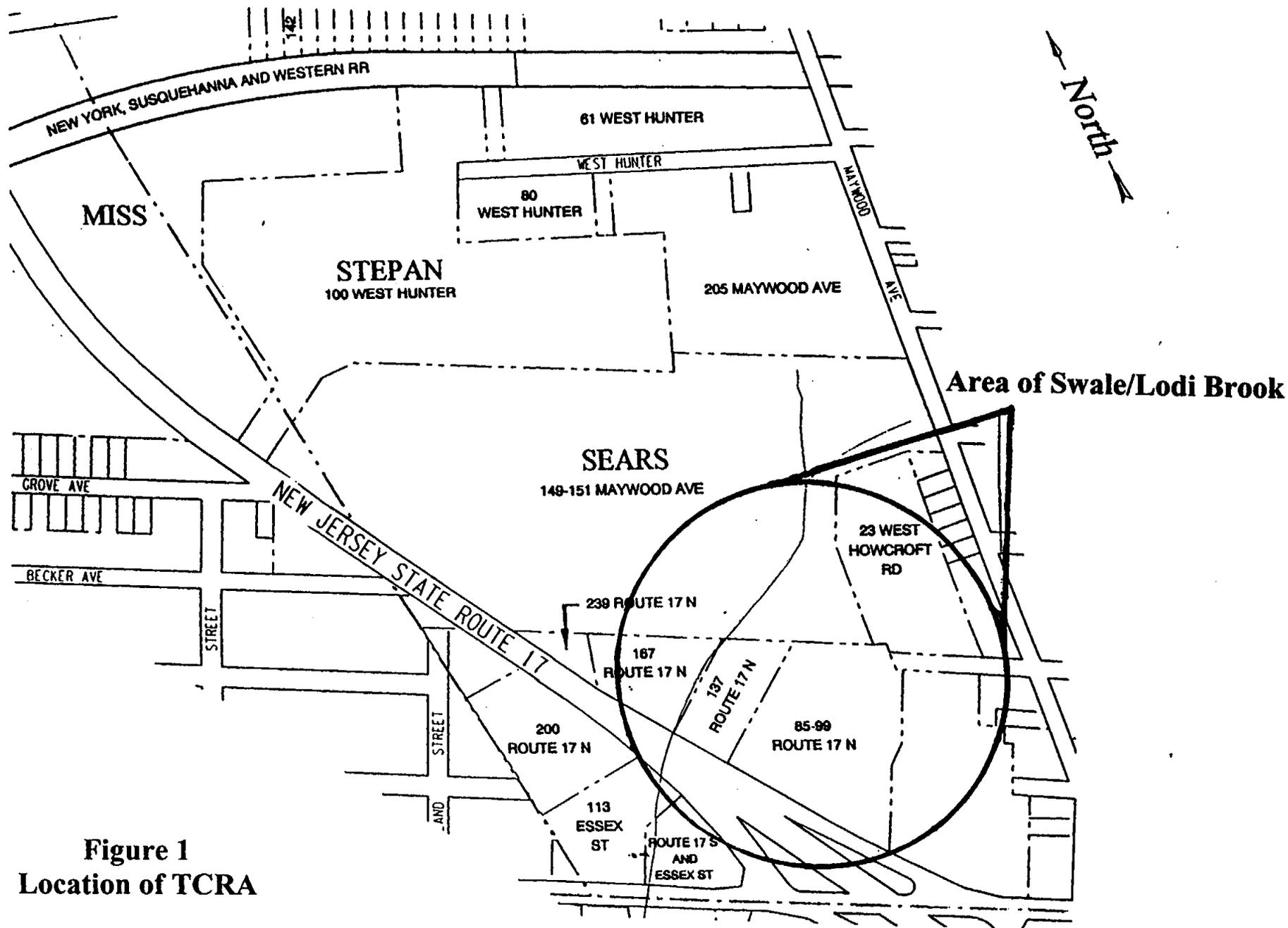
Sample ID	Radium-226	Thorium-232	Uranium-238
SWDH-1	0.27	0.21	0.06
SWDH-2	-0.01	0.04	0.17
SWDH-3	0.1	0.05	0.04
SWDH-4	-0.14	0.27	1.46
SWDH-5	0.18	0.65	1.69
SWDH-6	0.2	0.28	3.29
SWDH-7	0.25	0.1	11.78
SWDH-8	0.27	0.14	2.36
SWDH-9	0.1	-0.04	2.99
SWDH-10	-0.08	0.07	2.7
SWDH-11	0.09	0.03	3.08
SWDH-12	0.28	1.21	1.36
SWDH-13	0.35	0.07	0.96
SWDH-14	-0.02	0.05	0.11
SWDH-15	-0.25	0.25	0.14

Notes: Results have not been corrected for background.  
Water samples were filtered prior to analyzing.

**Table 3**  
**1999 Swale/Lodi Brook Sediment Samples**  
**Chemical Analyses<sup>(a)</sup>**

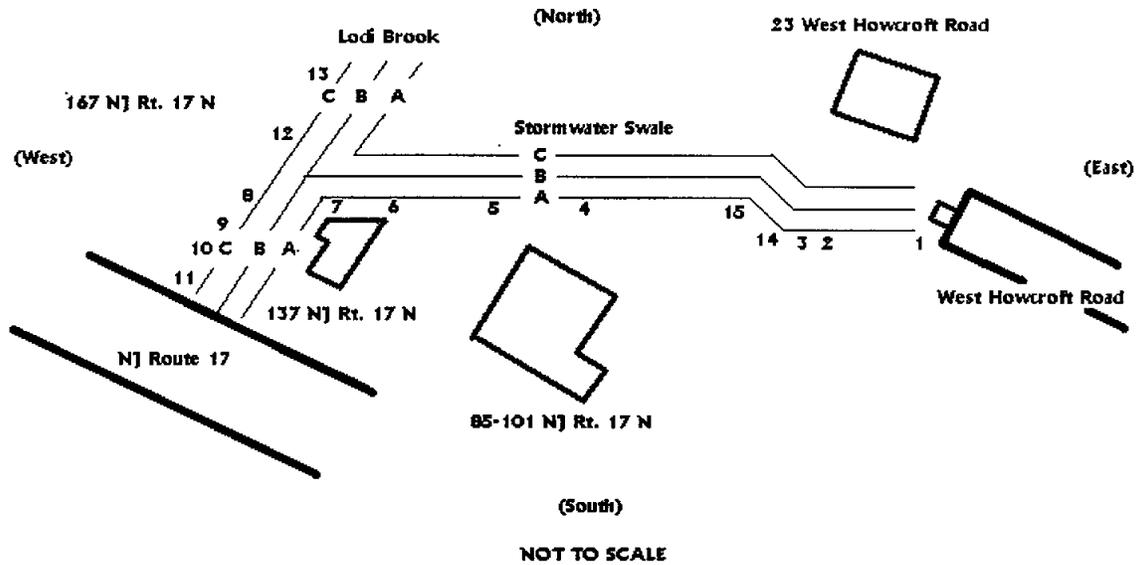
Sample ID	Lead <sup>(b)</sup> (mg/kg)	Total Chromium <sup>(c)</sup> (mg/kg)	Arsenic <sup>(d,e)</sup> (mg/kg)	Thallium <sup>(f,g)</sup> (mg/kg)
1	534			2.5
2	770			
3	502			
4	602	334	22.0	8.0
5				3.2
6		409	30.8	4.0
7		1300	29.5	4.7
8	428	432		
9				
10				4.8
11		282		

- Notes:
- (a) Results for selected metals which exceed NJ Residential Soil Cleanup Criteria, proposed rule, Cleanup Standards for Contaminated Sites, NJAC 7:26.
  - (b) NJ Residential Direct Contact Cleanup Criteria is 400 mg/kg.
  - (c) NJ Residential Direct Contact Cleanup Criteria is 240 mg/kg for hexavalent chromium and 120,000 mg/kg for trivalent chromium. For most of the results shown the hexavalent chromium contribution would have to be 30% or more for the criteria to be exceeded.
  - (d) NJ Residential Direct Contact Cleanup Criteria is 20 mg/kg.
  - (e) Cleanup standard proposed was based on natural background level.
  - (f) NJ Residential Direct Contact Cleanup Criteria is 2 mg/kg.
  - (g) Health criterion is lower than analytical limits; cleanup criterion is based on typical practical quantitation level.



**Figure 1**  
**Location of TCRA**

**Figure 2**  
**1999 Swale/Lodi Brook Sampling Locations**



**APPENDIX A**

**Action Memorandum  
Time-Critical Removal Action  
Removal of Contaminated Sediments at Vicinity Properties  
of the Maywood Interim Storage Site (MISS)  
CERCLIS #NJD980529762**



DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers  
WASHINGTON, D.C. 20314-1000

REPLY TO  
ATTENTION OF:

CEMP-R/CECW-B (200-1c)

0 6 DEC 1999

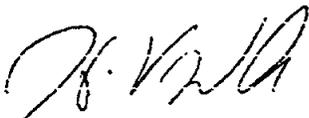
MEMORANDUM FOR COMMANDER, U.S. ARMY ENGINEER DIVISION,  
NORTH ATLANTIC

SUBJECT: Formerly Utilized Site Remedial Action Program (FUSRAP), Time Critical Action Memorandum for the Maywood Site, Maywood, New Jersey

1. Reference CENAN-PP memorandum, thru CENAD-PM, dated 15 November 1999, subject: FUSRAP, Request for Approval of an Action Memorandum on the Maywood FUSRAP Site Time Critical Removal Action.
2. The subject time critical action memorandum (enclosed) for removal of contaminated sediments from a drainage swale and culvert has been approved.
3. The Headquarters point of contact for this action is Ms. Tomiann McDaniel, 202-761-4363.

FOR THE COMMANDER:

Encl

  
HANS A. VAN WINKLE  
Major General, USA  
Deputy Commander for  
Civil Works

CF: w/o encl  
CECC-T (Simpson)  
CECW-BA (Moennig)  
CERE-A (Cribbin)  
CENAN-PP (Roos)  
CENAD-PM-M (Orgel)  
CENWO-HX (Roth)

**ACTION MEMORANDUM  
TIME-CRITICAL REMOVAL ACTION  
REMOVAL OF CONTAMINATED SEDIMENTS AT VICINITY PROPERTIES  
OF THE MAYWOOD INTERIM STORAGE SITE (MISS)  
CERCLIS<sup>1</sup> # NJD980529762**

**I. PURPOSE**

The purpose of this Action Memorandum is to document the approval of a time-critical removal action to remove contaminated sediments from a drainage swale in the vicinity of the Maywood Interim Storage Site (MISS), which is part of the Maywood Chemical Company site, located in and near Maywood, New Jersey. The U.S. Congress assigned the radiological portion of the site to the U.S. Department of Energy (DOE) in 1983 for cleanup as a decontamination research and development project for radioactive contamination. The DOE assigned this site to the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1984. The MISS and the vicinity properties containing FUSRAP wastes comprise the USACE area of responsibility ("The Site"). The 1998 Energy and Water Development Appropriations Act assigned FUSRAP, including the Maywood FUSRAP site, to the U.S. Army Corps of Engineers (USACE) for remediation under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (or National Contingency Plan, "NCP", 40 CFR Part 300). This time-critical removal action is selected pursuant to the requirements of CERCLA and the NCP.

**II. SITE CONDITIONS AND BACKGROUND**

**A. SITE DESCRIPTION**

**1. PHYSICAL LOCATION/SITE CHARACTERISTICS/BACKGROUND**

The Site is located in a highly developed area of northeastern New Jersey in the Boroughs of Maywood and Lodi and the Township of Rochelle Park. It is about 12 miles north/northwest of New York City and about 13 miles northeast of Newark, New Jersey. Land uses near the site include residential, commercial, industrial, governmental and other (recreational, schools, etc.).

FUSRAP wastes are defined in the DOE-EPA 1990 Federal Facilities Agreement for the Maywood Interim Storage Site (MISS). The FUSRAP Site is defined as the MISS (which DOE acquired in 1985 to serve as an interim storage facility) and 87 vicinity properties containing FUSRAP waste. FUSRAP waste is defined as:

"all contamination, both radiological and chemical, whether commingled or not, on the MISS and all radiological contamination above DOE's action levels related to past thorium processing at the Maywood Chemical Works (MCW) site occurring on any Vicinity Properties. Also included are any chemical or non-radiological contamination on Vicinity Properties that would satisfy either of the following requirements:

- (1) The chemical or non-radiological contaminants are mixed or commingled with radiological contamination above DOE's action levels; or
- (2) The chemical or non-radiological contaminants originated in the MISS or were associated with the specific thorium manufacturing or processing activities at the Maywood Chemical Works site which resulted in the radiological contamination."

All Chemical contamination falling outside the boundaries of the FUSRAP Waste definition at the Maywood Chemical Company Site is being addressed outside the scope of FUSRAP by the U.S. Environmental Protection Agency (EPA) and other parties.

The MISS is approximately 11.7 acres in size, and is currently fenced. Collectively, all of the properties in the Site cover approximately 180 acres. Although generally flat, some of the Site has some gently sloping

terrain. Much of the surface water runoff in the area comes from parking lots and streets in the area. Most of the surface water runoff in the area flows into storm sewers with discharges into Westerly Brook or Lodi Brook, which in turn flow into the Saddle River. In areas directly fronting these brooks, surface water runoff flows directly into the brooks.

The proposed removal action is being requested on a drainage swale located on the southern portions of the former Maywood Chemical Works. The swale currently is located on properties occupied by the DeSaussure Equipment Corp., FedEx, Architectural Window Manufacturing Corp., Uniform Fashions Shops, and the Sears Distribution Center. All of these properties have been identified as having FUSRAP wastes in USACE's Feasibility Study which is currently under development for the site. The swale receives surface runoff from the aforementioned properties and storm sewer discharges from the residential areas east of Maywood Ave. The swale discharges to Lodi Brook on the property located on the Uniform Fashions Shop. Lodi Brook subsequently discharges to the Saddle River.

## 2. REMOVAL SITE EVALUATION

Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999, and additional heavy rains over the following two weeks created regional and localized flooding. The extremely heavy rainfall caused a culvert and drainage swale, which drains surface water runoff from the Site, to backup and become silted in. Some of the sediments settling in the swale and culvert contain elevated levels of radium-226 (Ra-226), thorium-232 (Th-232) and uranium-238 (U-238). Sampling of the sediments revealed that concentrations of Ra-226 and Th-232 (combined) exceed 130 pCi/g at the most contaminated areas and generally average 30 pCi/g. The ratio of radionuclides is consistent with the ratio of known thorium processing wastes and the swale is located on the former property of the Maywood Chemical Works. Therefore, USACE has determined that the sediments are FUSRAP wastes and it is within USACE's authority to conduct a response action in the swale. Unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous substances or pollutants or contaminants onto adjacent and nearby properties.

Section 300.415(b)(2) of the NCP provides eight criteria, any one of which can justify the need for a removal action, to be considered in determining whether a removal action is warranted for a release of a hazardous substance, pollutant or contaminant. The threat of release of hazardous substances addressed in this Action Memorandum, and the circumstances related to such threat of releases at the Site, satisfy at least one of the eight criteria: "weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released." The sedimentation in the culverts and drainage swales resulted from flooding and surface runoff. Additional flooding or rainfall in the area could result in additional sedimentation of these drainage pathways, and the obstructed flow of surface water may cause additional releases of these hazardous substances from the Site.

## 3. RELEASE OR THREATENED RELEASE OF A HAZARDOUS SUBSTANCE, OR A POLLUTANT OR CONTAMINANT, INTO THE ENVIRONMENT

The above noted presence of Ra-226, Th-232 and U-238 in swale sediments in concentrations above background constitute releases of hazardous substances and poses a threat for further migration. Each of these contaminants has been listed by the EPA as a hazardous substance in 40 CFR Part 302.4. The Baseline Risk Assessment developed for the site in 1993 shows that these contaminants pose a risk that exceeds the  $10^{-4}$  lifetime cancer risk threshold of CERCLA and the NCP. The potential that additional rainfall on the site may cause these contaminants to be released onto nearby properties constitutes a threatened release of these hazardous substances.

## 4. NPL STATUS

The EPA placed the Maywood Chemical Company site on the National Priorities List (NPL) in 1983.

## 5. MAP

The locations of the drainage swale and the culverts in which flow is impeded are shown on the attached site map.

#### B. STATE AND LOCAL AUTHORITIES' ROLES

The Borough of Maywood notified USACE that culverts and drainage swales at and near the Site were blocked with sediment, which caused additional flooding and had the potential to cause contamination to be released from the Site because of the altered patterns of surface water runoff flow.

Representatives of the Borough of Maywood have indicated that they lack the capability to respond to radiologically contaminated releases such as the sediments obstructing the drainage swale. However, the Borough of Maywood does recognize their responsibility for conducting operations and maintenance activities on the drainage channel, including removing obstructions from the storm drainage system such as sedimentation, provided it is not radiologically contaminated.

### III. AUTHORITY FOR REMOVAL ACTION

Section 104(a)(1)(A) of CERCLA provides that the President may undertake a removal action "whenever any hazardous substance is released or there is a substantial threat of such release into the environment". As noted above in Section II.A.3 of this Action Memorandum, the presence of Ra-226, Th-232 and U-238 in the swale sediments above background is a release of hazardous substances and presents the potential of additional releases and migration of hazardous substances. The removal action is being undertaken to alleviate the threat of release by erosion of contaminants deposited in the drainage swale. The Fiscal Year 1998 Energy and Water Development Appropriations Acts assigned the FUSRAP portion of the Maywood Chemical Company Site to USACE for cleanup. The 1999 Energy and Water Development Appropriations Act mandated that USACE response actions on FUSRAP Sites be performed in accordance with CERCLA and the NCP. The Fiscal Year 2000 Energy and Water Appropriations Act contains the current mandate for USACE to conduct response actions relating to the FUSRAP program at the Maywood Site. USACE has the authority to perform this time-critical removal action on the Maywood Chemical Company Site.

### IV. PROPOSED ACTION AND ESTIMATED COSTS

#### A. DESCRIPTION OF PROPOSED ACTION

##### 1. Description of Proposed Removal Action

The proposed removal action consists of the removal of contaminated sediments currently impeding flow in the drainage swale and culverts. After the removal of sediments, additional measures will be taken to restore the normal hydraulic flow of the channel and prevent future deposition of contaminated sediments. These may consist of installing erosion control devices on the site and in the swale and/or sediment traps in the swale. It is estimated that 700 cubic yards of radiologically contaminated sediments require removal from the culvert and drainage swale. It is anticipated that the removal of contaminated sediments from the swales will be accomplished with conventional earth-moving equipment. These sediments will be transported to the MISS, dewatered, characterized for disposal, and transported to an authorized disposal facility in accordance with 40 CFR 300.440. The approximate locations of these sediments are shown in the attached Site Maps.

##### 2. Contribution of Removal Action to the Performance of a Remedial Action for the Site

Removal actions need to be consistent to the extent possible with any likely remedial action which might be selected on the site. This removal action meets that requirement in that these sediments would require removal under any reasonably anticipated remedial action for this site. These sediments are included in the Feasibility Study USACE is presently developing for the site. The proposed removal action only accelerates USACE's plans for a response on these sediments. The effective implementation of this removal action, may actually reduce the final volume of contaminated soil required to be addressed in the remedial action, by preventing the migration of the contaminated sediments to downstream areas.

### 3. Applicable or Relevant and Appropriate Requirements (ARARs)

Under the NCP, ARARs are those cleanup standards, standards of control and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address the hazardous substances at the site (i.e. applicable) or address similar circumstances to the release (i.e. relevant and appropriate). No ARAR has been identified that would require the performance of this action. During the performance of the action, NJAC 7:9B (NJ's CWA regulations) is an ARAR that establishes surface water quality criteria for Lodi Brook. The drainage swale's discharge point into Lodi Brook will be monitored to assure that surface water quality is not further deteriorated during the performance of this action beyond established surface water quality criteria. Certain regulations are likely to be applicable relating to the transportation and treatment or disposal of the sediment removed from the swale and will need to be considered in the implementation of this removal. These types of requirements are not considered to be ARARs under the NCP.

### 4. Project Schedule

The USACE will direct a contractor to prepare workplans for the implementation of this removal action. It is estimated that the fieldwork related to the removal of sediment, soil and water from the drainage swale and culverts can then begin within 15 days of the Action Memorandum approval. Field activities are estimated to take 10 days to complete. Finalizing the transportation and disposal aspects of the removal action will take several months.

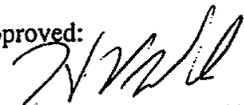
#### B. ESTIMATED COSTS OF REMOVAL ACTION

1. Estimated Subcontractor Costs	\$120,000.00
2. Estimated Transportation Costs	\$87,500.00
3. Estimated Disposal Costs	\$73,500.00
4. Estimated In-house USACE Costs	\$15,000.00
5. Contingency (25%)	\$74,000.00
<u>Estimated Total Costs</u>	<u>\$370,000.00</u>

#### V. APPROVAL OF ACTION

This Action Memorandum is a CERCLA decision document, which selects a time-critical removal action to remove sediments which have filled the drainage swale and obstructed a culvert at the Maywood Chemical Company Site, as shown in the attached Site Maps. The removal action will alleviate the imminent threat of release of a hazardous substance which has been determined to be a FUSRAP waste. This Action Memorandum was developed in accordance with CERCLA, and is not inconsistent with the National Contingency Plan (NCP). This Action Memorandum is based upon information contained in documents in the Administrative Record for this action. Pursuant to the requirements of Section 300.415(n)(2) of the NCP, a public notice will be published in a major local newspaper of general circulation within 60 days of the initiation of this removal action, inviting the public to comment on the administrative record.

Approved:

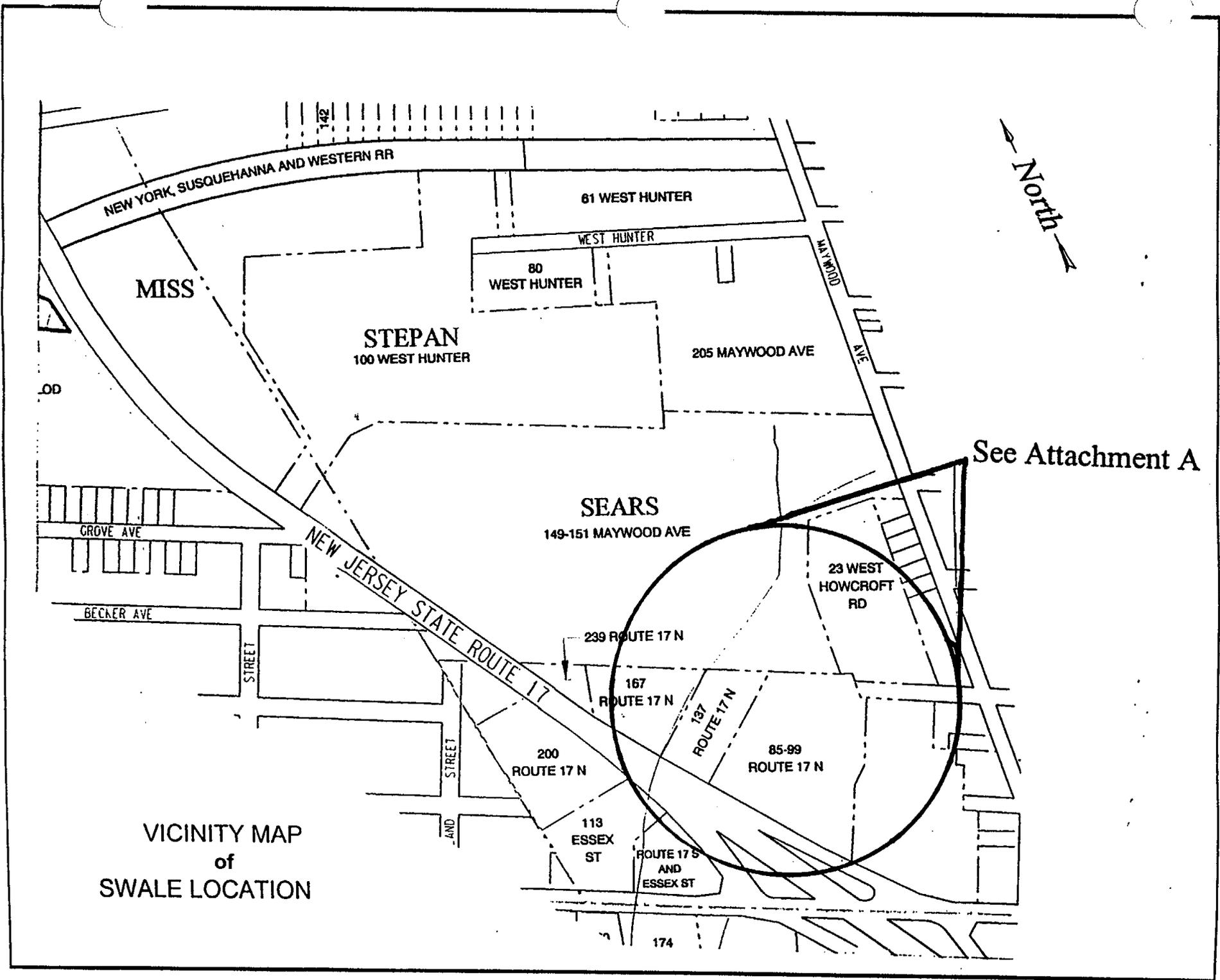
  
\_\_\_\_\_  
HANS A. VAN WINKLE  
Major General, U.S. Army  
Deputy Commander  
for Civil Works

DEC 6 1999

\_\_\_\_\_  
Date

#### ATTACHMENT

Site Maps



VICINITY MAP  
of  
SWALE LOCATION



ATTACHMENT B

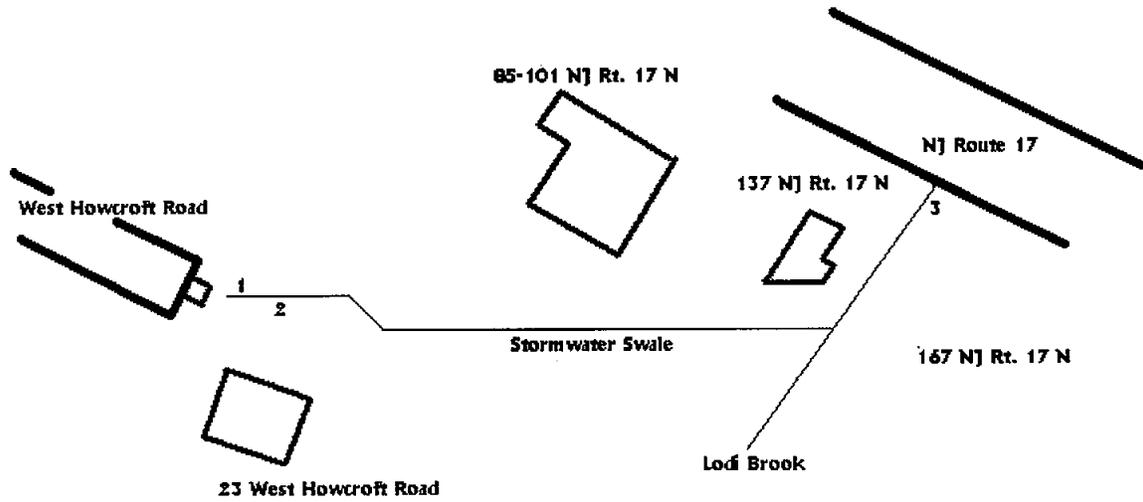


Figure B-1: Photo locations.



Photo 1: View of upstream culvert, 23 West Howcroft Road  
(Observation: Only about the top 8"-10" of the 36" culvert is open. The rest is silted.)

**ATTACHMENT B (Continued)**



Photo 2: View of sediment at upgradient invert, 23 West Howcroft Road.



Photo 3: View of downstream culvert, NJ Route 17 North  
(Observation: This is a 5' wide x 2' deep culvert)

**APPENDIX B**

**Memorandum of Understanding**

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
BOROUGH OF MAYWOOD, NEW JERSEY  
AND  
THE UNITED STATES ARMY CORPS OF ENGINEERS

This Agreement is made by and between the Borough of Maywood, New Jersey (BOROUGH) and the United States of America acting through the United States Army Corps of Engineers (U.S. ARMY CORPS).

BACKGROUND

The Maywood Site is located in a highly developed area of northeastern New Jersey approximately twelve (12) miles north/northwest of New York City and thirteen (13) miles northeast of Newark, New Jersey. The Maywood Site consists of the Maywood Interim Storage Site (MISS) and eighty-seven (87) other designated residential, commercial, and governmental Vicinity Properties (VPs) in Maywood, Rochelle Park, and Lodi, New Jersey. In 1984, Congress assigned responsibility for the Maywood Site to the Department of Energy (DOE) as a decontamination research and development project, and DOE placed the site in its Formerly Utilized Sites Remedial Action Program (FUSRAP). In October 1997, Congress transferred responsibility for administration and execution of FUSRAP from the DOE to U.S. ARMY CORPS, and subsequently directed that actions under FUSRAP be conducted in accordance with the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq. (CERCLA), and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R., Chapter 1, Part 300 (NCP). The Maywood Site is part of a larger site, the Maywood Chemical Co. Superfund Site, which the Environmental Protection Agency (EPA) lists on its National Priorities List (NPL).

INTRODUCTION

WHEREAS extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999, and additional heavy rains over the following two weeks created regional and localized flooding in the area of the Maywood Site and caused a culvert and drainage swale (as shown in the Attachment A site map), which drains surface water runoff from the Site, to back up and become silted in; and

WHEREAS sampling revealed that some of the sediments in the swale and culvert contain elevated levels of radium-226 (Ra-226), thorium-232 (Th-232) and uranium-238 (U-238), and that concentrations of Ra-226 and Th-232 (combined) exceed 130 pCi/g at the most contaminated areas and generally average 30 pCi/g; and

WHEREAS the above noted presence of Ra-226, Th-232 and U-238 in swale sediments in concentrations above background constitute releases of hazardous substances under CERCLA and the NCP and pose a threat for further migration; and

WHEREAS unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous substances or pollutants or contaminants onto adjacent and nearby properties, constituting a threatened release of hazardous substances under CERCLA and the NCP; and

WHEREAS the BOROUGH notified U.S. ARMY CORPS that culverts and drainage swales at or near the Maywood Site were blocked with sediment, which caused additional flooding and had the potential to cause contamination to be released from the site because of the altered patterns of surface water runoff flow; and

WHEREAS U.S. ARMY CORPS has determined that the sediments are FUSRAP wastes and it is within U.S. ARMY CORPS' authority to conduct a response action in the swale; and

WHEREAS U.S. ARMY CORPS has determined that execution of a time-critical removal action (TCRA) conducted pursuant to the requirements of CERCLA and the NCP is the appropriate remedy;

NOW, THEREFORE, in consideration of mutual agreements, covenants and promises contained in this Agreement, the parties agree as follows:

#### ARTICLE I - PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to define the relationship, responsibilities and general objectives under which the U.S. ARMY CORPS will execute a TCRA at the Maywood Site, Maywood, New Jersey. This MOU is intended to promote coordination and cooperation between the parties and facilitate the execution of the response action.

#### ARTICLE II - SCOPE OF WORK

The objective of this TCRA and associated Work Plan is limited to:

- (a) Re-establishing the hydraulic grade of the swale; and
- (b) Stabilizing the swale to reduce the potential for hazardous contaminants to migrate or be released.

All work under this Agreement is "subject to the availability of funds" appropriated by Congress for such work.

#### ARTICLE III - COMMUNICATION

To provide for consistent and effective communication between BOROUGH and U.S. ARMY CORPS, each shall appoint Principal Representatives to serve as points of

contact on matters relating to this TCRA and/or this MOU. The Principal Representatives are:

**U.S. ARMY CORPS**

Allen Roos  
FUSRAP Maywood Project Manager  
26 Federal Plaza  
New York, NY 10278  
212/264-0120

**BOROUGH**

John Perkins, Borough Administrator  
Borough of Maywood  
459 Maywood Avenue  
Maywood, New Jersey 07607

**Glen Shonkwiler**

FUSRAP Maywood Technical Manager  
601 E. 12<sup>th</sup> Street  
Kansas City, MO 64106  
816/983-3561

**ARTICLE IV – RESPONSIBILITIES**

**U.S. ARMY CORPS**

1. U.S. ARMY CORPS will develop a TCRA Work Plan, including site map, to execute this response action (to be included at Exhibit A).
2. In accordance with the TCRA Work Plan, U.S. ARMY CORPS will remove an estimated seven hundred (700) cubic yards of radiologically contaminated sediments currently impeding flow in the drainage swale and culverts, dewater the material, transport this material to the MISS, characterize the material for disposal, and properly dispose of this material in accordance with applicable laws and regulations.
3. After the removal of sediments, additional measures will be taken, in accordance with the TCRA Work Plan, to restore the normal hydraulic flow of the swale and stabilize the swale to prevent downgradient migration of contaminants. These may consist of installing erosion control devices on the site and in the swale and/or sediment traps in the swale.

**BOROUGH**

1. BOROUGH is encouraged to participate in the preparation of the TCRA Work Plan. BOROUGH will accept the TCRA Work Plan in a timely manner. However, U.S. ARMY CORPS will initiate work independent of BOROUGH's concerns beginning on or about February 15, 2000.
2. BOROUGH will provide to U.S. ARMY CORPS a Right of Entry (ROE) for that portion of the drainage swale owned by the BOROUGH.

3. BOROUGH will issue a variance from noise, light, and any other local ordinances that would prevent the timely performance of the work.
4. Upon completion of the U.S. ARMY CORPS' work, BOROUGH will accept the work as detailed in the TCRA Work Plan.
5. During and subsequent to U.S. ARMY CORPS' work, BOROUGH will flush all contributing culverts/pipes that discharge into the swale upon request of U.S. ARMY CORPS. The BOROUGH will be responsible for and will remove all sediment flushed out of the system. USACE does not expect the sediment to contain a radionuclide component.
6. BOROUGH recognizes its responsibility for future swale and culvert maintenance. Therefore, subsequent to U.S. ARMY CORPS' work, BOROUGH will conduct operations and maintenance activities on the drainage channel. This includes, but is not limited to;
  - (a) BOROUGH will periodically monitor and clean all upgradient and downgradient culverts to prevent buildup of debris or sediment within the swale;
  - (b) BOROUGH will be responsible for physically maintaining the swale.

#### ARTICLE V - INDEMNITY

U.S. ARMY CORPS shall not be responsible or liable for damages to persons or property resulting from the negligent actions of the BOROUGH, its servants and/or employees.

BOROUGH agrees to hold and save U.S. ARMY CORPS free from all damages due to the design, construction, operation or maintenance of any projects performed under this Agreement, except for damages due to the fault or negligence of U.S. ARMY CORPS.

#### ARTICLE VI - FURTHER ASSISTANCE

BOROUGH and U.S. ARMY CORPS shall provide such information, execute and deliver any agreements, instruments and documents, and take such other actions, as may be reasonably necessary or required, which are not inconsistent with the provisions of this MOU, in order to give full effect to this MOU and to carry out its intent.

#### ARTICLE VII - AMENDMENT AND TERMINATION

Amendments or alterations of this Agreement shall be void unless made in writing and signed by both parties hereto. Either party may terminate this Agreement by providing written notice to the other party at least thirty (30) days prior to the expiration of the Agreement

The term of this Agreement is for a period of five (5) years from the effective date (defined hereafter) of this Agreement.

The provisions of this MOU which require performance after the expiration or termination of this MOU shall remain in force notwithstanding the expiration or termination of this Agreement.

If any provision of this MOU is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

ARTICLE VIII - EFFECTIVE DATE

Agreement with the foregoing is confirmed by a duly authorized representative of each party, signing both copies thereof, with one fully executed copy being retained by each party. The last day of acceptance by both parties shall be the effective date of this Agreement.

U.S. ARMY CORPS OF ENGINEERS

BOROUGH OF MAYWOOD, NJ

By: William H. Pearce  
(Signature)

By: Wayne Kuss  
(Signature)

Name: William H. Pearce

Name: WAYNE A. KUSS

Title: Colonel, Corps of Engineers  
District Engineer

Title: MAYOR

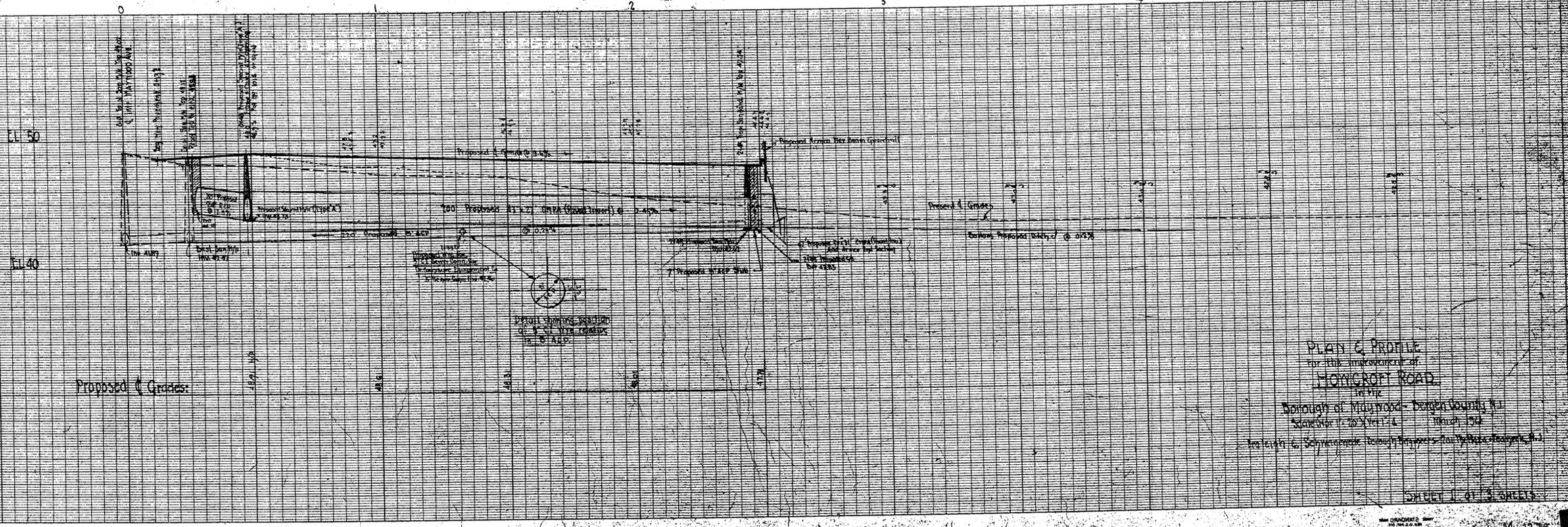
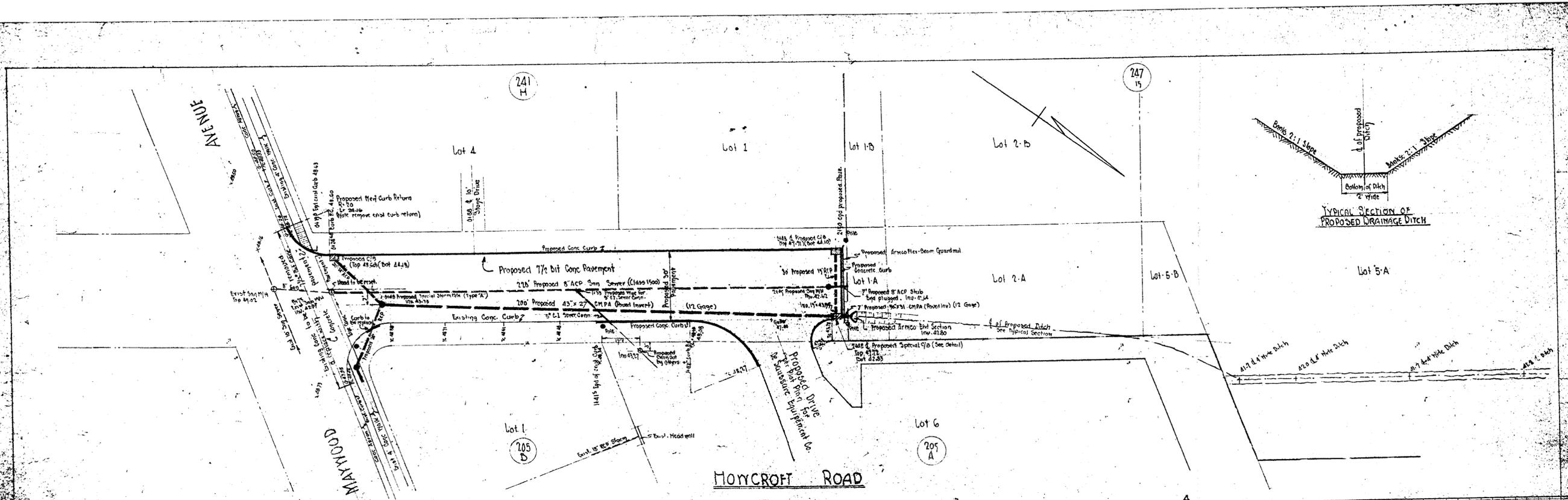
Date: 26 Jan 2000

Date: JANUARY 25, 2000

## APPENDIX C

### Plan and Profile for the Improvement of Howcroft Road

- Sheet 1 of 3
- Sheet 2 of 3
- Sheet 3 of 3
- Sheet 1 of 3 (Approximate Limits of Swale (1999) Superimposed)



**PLAN & PROFILE**  
for the improvement of  
**MONCROFT ROAD**

Township of Maywood - Bergen County, N.J.  
Station 11+20 to 11+24  
March 1968  
By Civil & Surveying Division of the Department of Public Works, Bergen County, N.J.

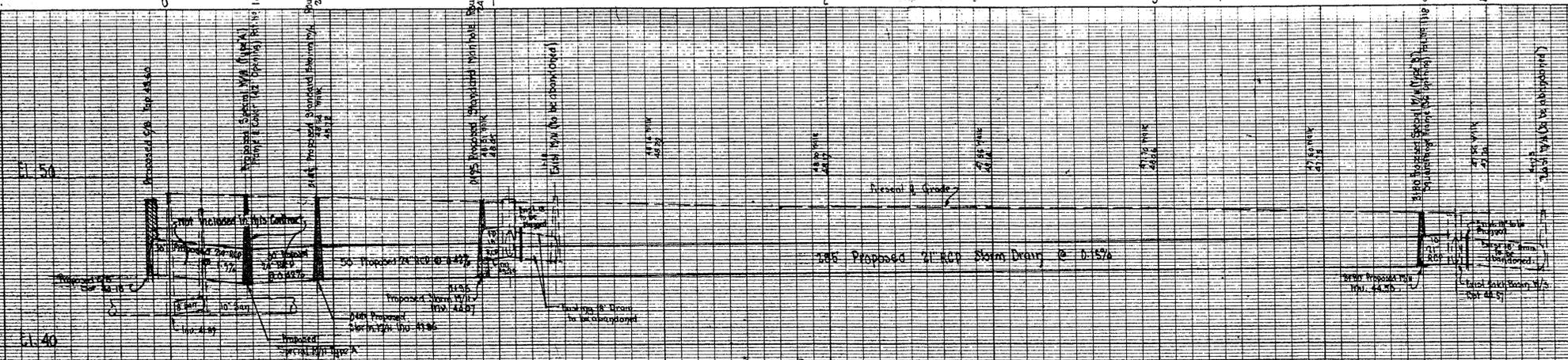
SHEET 11 OF 13 SHEETS

205  
B

# MAYWOOD AVENUE

FLOWCROFT

HAMMILL PLACE



PLAN & PROFILE  
 OF  
 PROPOSED STORM DRAIN  
 along the West Side of  
 MAYWOOD AVENUE  
 between  
 FLOWCROFT RD & HAMMILL PL

Barouah of Maywood - Bergen County, N.J.  
 South Street, Maywood, N.J.      March 1964  
 Planning & Surveying - Consulting Engineers - 201 The Plaza, Maywood, N.J.  
 Revised 0-14-1964

PLANS 3 OF 3 SHEETS

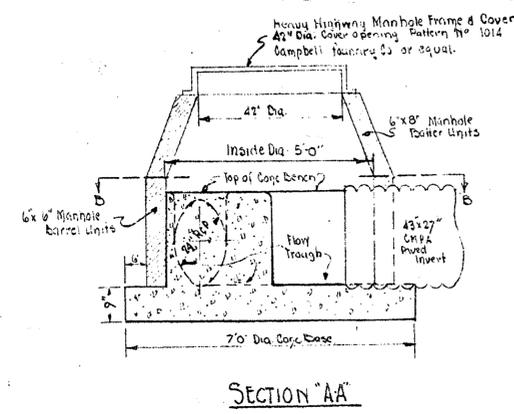
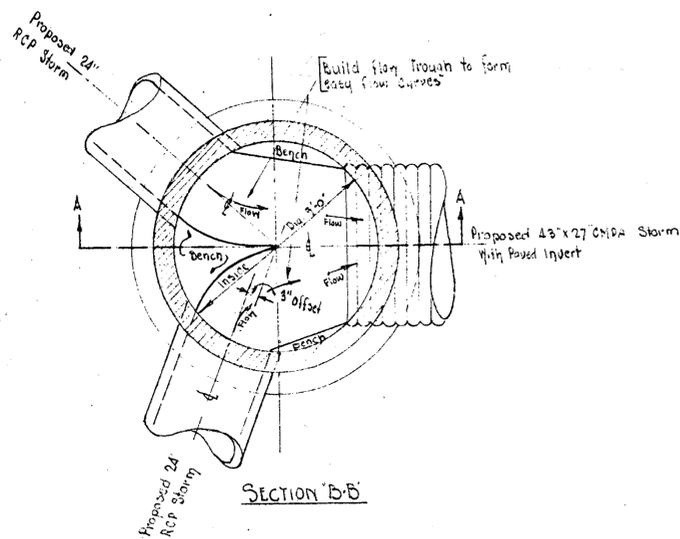
M-1378-B

NEW YORK  
 KENNEL & ESSER CO.  
 ENGINEERS  
 100 WEST 42ND STREET  
 NEW YORK 36, N.Y.

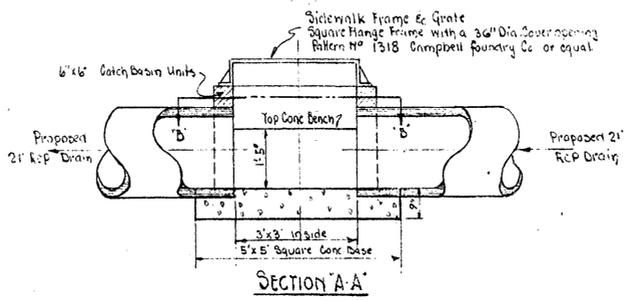
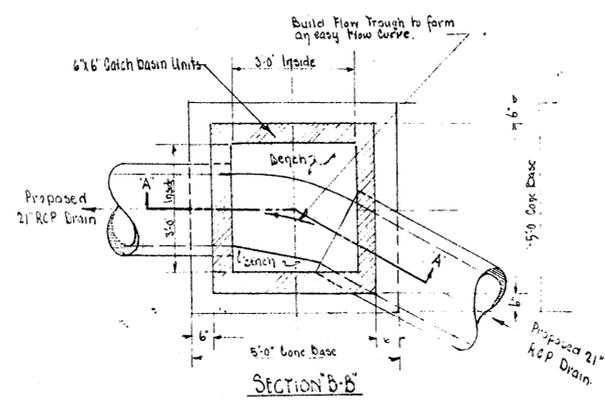
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 KENNEL & ESSER CO.  
 ENGINEERS  
 100 WEST 42ND STREET  
 NEW YORK 36, N.Y.

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 KENNEL & ESSER CO.  
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 100 WEST 42ND STREET  
 NEW YORK 36, N.Y.

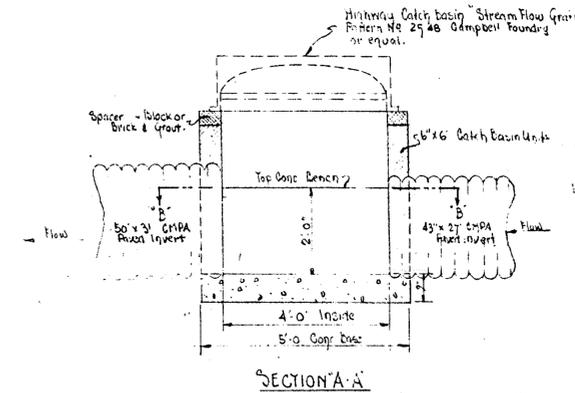
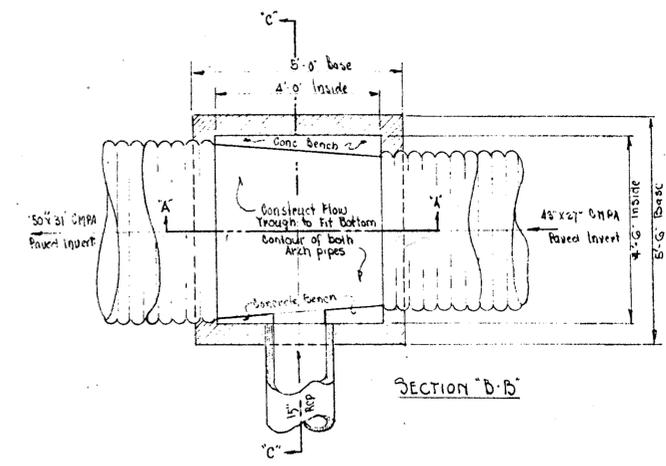
NEW YORK  
 KENNEL & ESSER CO.  
 ENGINEERS  
 100 WEST 42ND STREET  
 NEW YORK 36, N.Y.



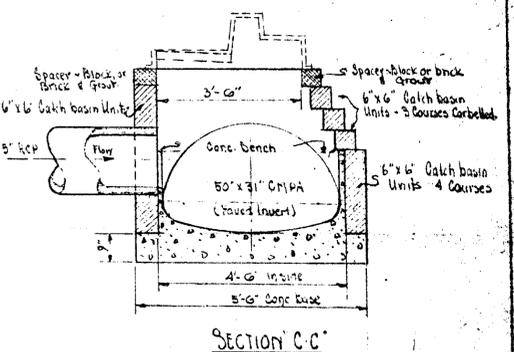
DETAIL  
OF  
**SPECIAL STORM MANHOLE**  
TYPE 'A'  
Station 0+48 on Moncroft Road  
Scale 1"=2'  
Not included in this Contract



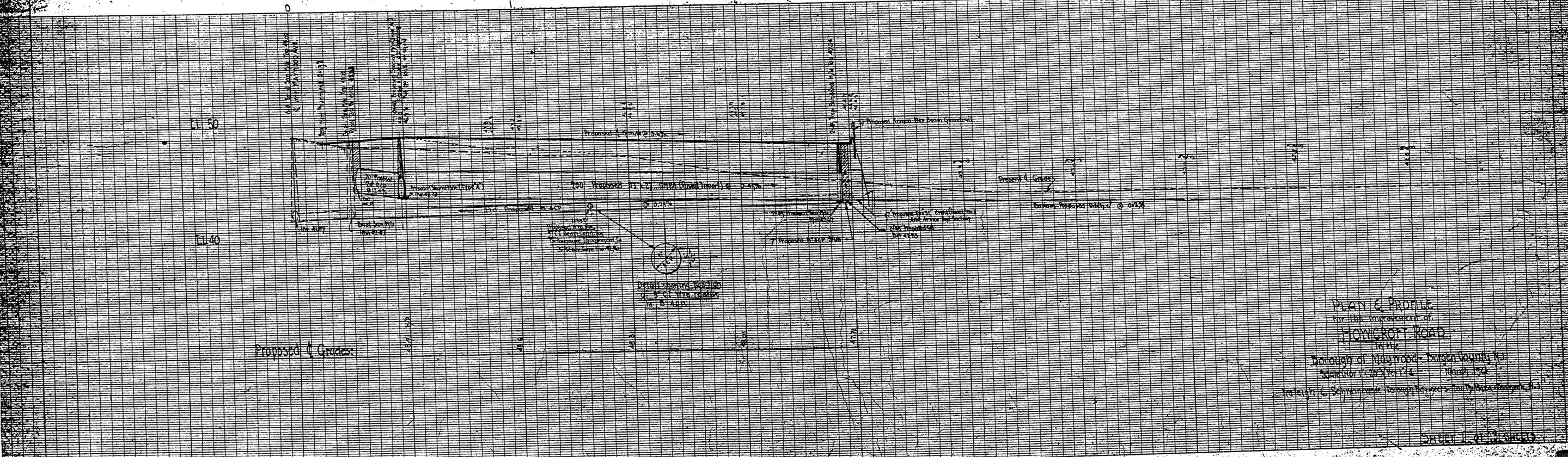
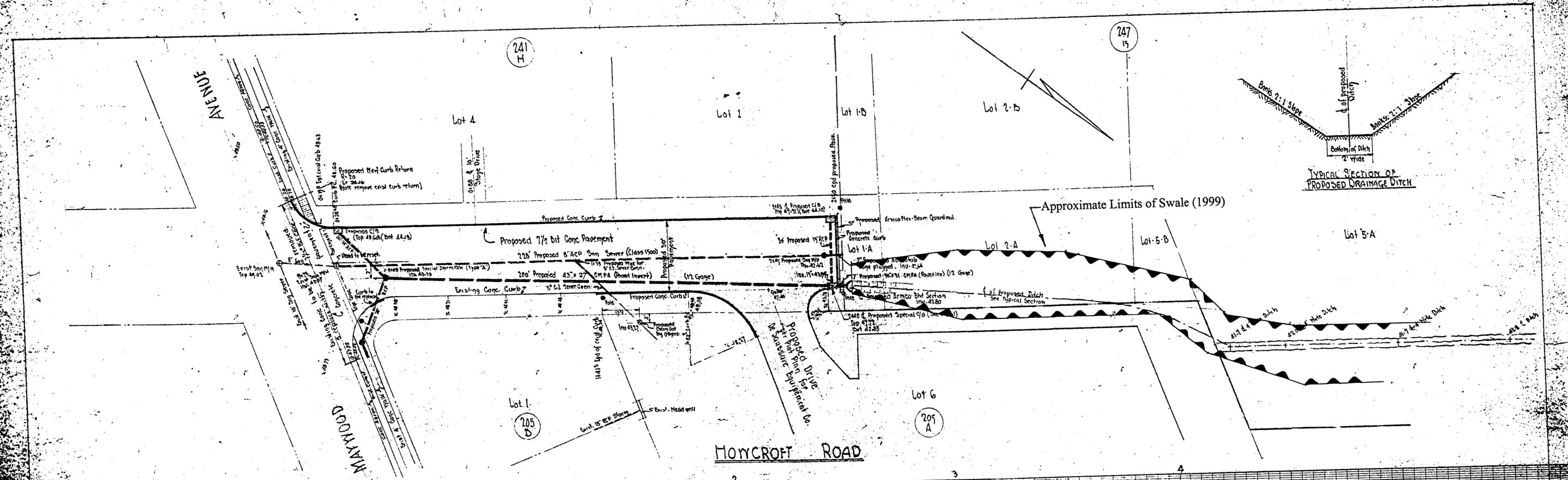
DETAIL  
OF  
**SPECIAL STORM MANHOLE**  
TYPE 'B'  
Station 3+80 on Maywood Ave.  
Scale 1"=2'



DETAIL  
OF  
**SPECIAL CATCH BASIN**  
Station 2+48 - north side of Moncroft Road  
Scale 1"=2'  
Not included in this Contract



DETAILS  
FOR  
**PROPOSED STORM DRAIN IMPROVEMENT**  
ON  
**MAYWOOD AVE. & MONCROFT RD.**  
In the  
Borough of Maywood - Bergen County - N.J.  
Scale as shown  
Prepared March 31, 1960  
Freleigh & Schynegans - Borough Engineer - 201 New York Ave. N.J.  
SHEET 3 OF 3 SUBJECTS



**Plan & Profile**  
for the improvement of  
**MONCROTT ROAD**

In the  
Municipality of Madison - Bergen County, N.J.  
January 1, 2014 to 12/31/14

## **APPENDIX D**

### **Permit Equivalency Documents**

- Request for NJDEP General Permit No. 4 and Letter of No Jurisdiction
- Sample Letter Sent to Adjacent Property Owners and List of Property Owners Notified
- Land Use Regulation Program Application Forms
- Soil Conservation Service Notification



**DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT, CORPS OF ENGINEERS  
JACOB K. JAVITS FEDERAL BUILDING  
NEW YORK, N.Y. 10278-0090**

REPLY TO  
ATTENTION OF

January 3, 2000

Programs and Project Management Division

Mr. Mark Godfried  
Section Chief  
New Jersey Department of Environmental Protection  
Land Use Regulation Program  
P.O. Box 439, 5 Station Plaza  
Trenton, New Jersey 08625

**RE: Maywood FUSRAP Site  
Borough of Maywood  
Bergen County, New Jersey  
Request for Statewide General Permit #4  
Request for Letter of No Jurisdiction – Stream Encroachment Permit**

Dear Mr. Godfried:

The U.S. Army Corps of Engineers (USACE) is exempt from obtaining permits under 40 CFR 300.400(e)(1). However, to meet the substantive requirements of the permit process, USACE is submitting a permit equivalency application for a Statewide General Permit #4 and a request for a letter of no jurisdiction in accordance with N.J.A.C. 7:7A *et seq* and N.J.A.C. 7.13 *et seq* for a proposed swale clean-out associated with clean-up activities at the Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Chemical Company Superfund Site. The proposed swale clean-out will occur within a Borough drainage easement near Howcroft Road in the Borough of Maywood. The drainage easement includes portions of Block 124, Lots 2, 3, 4, 16, 17, and 30.

### **Project Summary**

The USACE is requesting a Statewide General Permit #4 and a letter of no jurisdiction for a Stream Encroachment Permit to remove contaminated sediments from a drainage swale in the vicinity of the Maywood Interim Storage Site (MISS), which is part of the Maywood Chemical Company site, located in and near Maywood, New Jersey. The U.S. Congress assigned the radiological portion of the site to the U.S. Department of Energy (DOE) in 1983 for cleanup as a decontamination research and development project for radioactive contamination. The DOE assigned the site to the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1984. Responsibility for conducting the cleanup was transferred to USACE by Congress in the 1998 Energy and Water Development Appropriations Act. Congress has tasked USACE to remediate FUSRAP sites under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") of 1980 as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan.

Under CERCLA, a time critical removal action is being proposed for a drainage swale located on the southern portion of the former Maywood Chemical Works. The swale currently is located in a Borough drainage easement on properties occupied by the DeSaussure Equipment Corp., FedEx, Architectural Window Manufacturing Corp., Uniform Fashions Shop and the Sears Distribution Center. All of these properties have been identified as having FUSRAP wastes in the USACE's Feasibility Study, which is currently under development for the site. The swale receives surface runoff from the aforementioned properties and storm sewer discharges from the residential areas east of Maywood Avenue.

Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999 and additional heavy rains over the following two weeks created regional and localized flooding. The extremely heavy rainfall caused a culvert and drainage swale, which drains surface water runoff from the Site to backup and become silted in. Some of the sediments settling in the swale and culvert contain elevated levels of radium-226 ("Ra-226"), thorium-232 ("Th-232") and uranium-238 ("U-238"). The ratio of radionuclides is consistent with the ratio of known thorium processing wastes and the swale is located on the former property of the Maywood Chemical Works. Unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous substances or pollutants or contaminants onto adjacent and nearby properties.

The presence of Ra-226, Th-232 and U-238 in swale sediments in concentrations above background constitutes releases of hazardous substances and poses a threat for further migration. Each of these contaminants has been listed by the Environmental Protection Agency as a hazardous substance in 40 CFR Part 302.4. A Baseline Risk Assessment developed for the Site in 1993 shows that these contaminants pose a risk that exceeds the  $10^{-4}$  lifetime cancer risk threshold of CERCLA. The potential that additional rainfall in the area may cause these contaminants to be released on nearby properties constitutes a threatened release of these hazardous substances.

The proposed removal action consists of the removal of sediments currently impeding flow in the drainage swale and culverts. The removal of the sediments will be done to restore the normal hydraulic flow of the channel and to prevent future deposition of contaminated sediments to offsite locations. This action may consist of installing erosion control devices on the site and in the swale and/or sediment traps in the swale. It is estimated that 700 cubic yards of sediment requires removal from the culvert and drainage swale. These sediments will be transported to the MISS, dewatered, characterized for disposal, and transported to an authorized disposal facility in accordance with 40 CFR 300.440. The approximate locations of these sediments are shown on the attached Site Plan.

It is anticipated that the removal of contaminated sediments from the swale will be accomplished with conventional earth-moving equipment. The swale will be cleaned using mechanical cleaning equipment, as opposed to jetting, to minimize sediment entrainment and the generation of water requiring disposal. The drainage swale's discharge point will be monitored to assure that surface water quality is not further deteriorated during the sediment removal process beyond surface water quality conditions. It is estimated that field activities will take approximately 30 days to complete.

#### Statewide General Permit #4

Statewide General Permit #4 applies as follows:

*All regulated activities, including work, discharges, and the construction or placement of structures, which are undertaken, authorized or otherwise expressly approved in writing by the Department for the investigation, cleanup or removal of hazardous substances as defined by or pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq., or pollutants, as defined by the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., provided the following conditions are met.*

*i. If the proposed cleanup activity is to take place in an exceptional resource value wetland, the Statewide General Permit authorization shall be issued only if the Department finds that there are no practicable alternatives to the investigation, cleanup and removal of the hazardous substances or pollutants that would involve less or no disturbance or destruction of wetlands or State open waters.*

*ii. Mitigation shall be performed according to the procedures for mitigation at N.J.A.C. 7:7A-14 for all disturbance or destruction of freshwater wetlands or State open waters caused by a cleanup authorized under this general permit. The mitigation plan may be incorporated as part of the document by which the Department approves the cleanup or it may be submitted as part of the Statewide General Permit authorization application. The Statewide General Permit authorization will not be issued until the mitigation plan is submitted and approved by the Element according to the standards at N.J.A.C. 7:7A-14.*

As detailed in the project description above, the presence of radionuclides within the swale poses a threat to properties in the immediate vicinity of the Site as well as properties downstream. There are no practicable alternatives to the proposed activities that would protect the well being of the general public.

For the purposes of this application all activities associated with the removal of sediment from the swale are assumed to occur within regulated wetlands. The wetlands that exist are considered of "Ordinary Value." The vegetation found within the swale is comprised of emergent grasses and significant quantities of *Phragmites*. The wetland itself provides little if any habitat value, as it is presently littered with trash and debris.

As detailed later in this letter, the swale is man-made and was intended to serve as a part of the Borough of Maywood's drainage system. Because of the nature of the swale, the lack of significant habitat value, the existing contamination associated with radionuclides, the Borough requests that the proposed activity in and of itself constitutes mitigation and no further mitigative activities should be required.

All Statewide General Permits are subject to standards and conditions as outlined in N.J.A.C. 7:7A-9.3. The following describes those conditions and this project's compliance with those conditions:

1. ***The request for authorization to fill or modify wetlands or State open waters is associated with a proposed project or construction activity and is not solely being requested for the purpose of eliminating a natural resource in order to avoid future regulation. For the purposes of this specific subsection, project shall mean the use and configuration of all buildings, pavements, roadways, storage areas and structures, and the extent of all activities associated with the proposal;***

**Response:** The proposed activity is not intended to eliminate a wetland resource. The drainage swale is a man made facility, described in engineering plans completed in March, 1961 (*Plan & Profile for the Improvements of Howcroft Road; Fraleigh & Schwanewede, Borough Engineers*). The swale is an important part of the Borough of Maywood's drainage system and will remain in place following the removal of sediments and the improvements to the swale itself.

2. ***The regulated activity shall not occur in the proximity of a public water supply uptake:***

**Response:** There are no public water supply intakes in the vicinity of the site.

3. ***The regulated activity shall not jeopardize a threatened or endangered species and the activity shall not destroy, jeopardize, or adversely modify the historic or documented habitat of such species:***

**Response:** As described above, the wetlands for which this application is being submitted are of Ordinary Value. Vegetation is restricted to various emergent grasses, dominated primarily by *Phragmites*. The area of the swale is within an industrial area with little or no associated habitat in the immediate vicinity. There are no threatened or endangered species located within or near the swale.

4. ***The activity will not occur in a component of either the Federal or State Wild and Scenic River System; nor in a river officially designated by Congress or the State Legislature as a "study river" for possible inclusion in either system while the river is in an official study status:***

**Response:** the proposed activities are will not occur in a component of either the Federal or State Wild and Scenic River System; nor in a river officially designated by Congress or the State Legislature as a "study river" for possible inclusion in either system.

5. ***The activity shall not adversely affect properties which are listed or are eligible for listing on the National Register of Historic Places:***

**Response:** The proposed activities will occur within a Borough drainage easement. There will be no impact to properties which are listed or are eligible for listing on the National Register of Historic Places.

In addition to the above standards, there are a series of conditions that shall be met in order for a regulated activity to be authorized under Statewide General Permits:

1. ***Any discharge of dredged or fill materials shall consists of suitable materials free from toxic pollutants (see section 307 of the Federal Act) in toxic amounts:***

**Response:** There is no discharge of dredge or fill materials associated with this project. Hazardous materials will be removed from the swale and transported to the MISS (an upland area), dewatered, characterized for disposal, and transported to an authorized disposal facility in accordance with 40 CFR 300.440.

2. ***Any structure or fill material authorized shall be maintained as specified in the construction plans.***

**Response:** The Borough of Maywood in accordance with their standard maintenance practices and pursuant to a Memorandum of Understanding with the USACE will maintain any improvements to the swale.

3. ***In order to protect the fishery resources and/or the spawning of the downstream resident fish population, any activity within or adjacent to a stream channel which may introduce sediment into the stream or cause the stream to become turbid is prohibited during the time frames listed below or any subsequent updates to this listing as provided by the New Jersey Division of Fish, Game and Wildlife.***

**Response:** According to N.J.A.C. 7:9B-1.15, Lodi Brook, in which the drainage swale flows to, is classified as FW2-NT. Since timing restriction only applies to trout production/maintenance waters, there are no timing restrictions on the proposed activities.

4. ***During construction activities, all excavation must be monitored to check for the presence of acid-producing deposits pursuant to N.J.A.C. 7:13-5.10 of the Flood Hazard Area Control Rules. If any such deposits are encountered, the mitigation and disposal standards described in N.J.A.C. 7:13-5.10 must be implemented.***

**Response:** Acid-producing soils are not anticipated as part of the sediment removal process. As noted in the project description, monitoring will be conducted to ensure contamination has not migrated downstream of the project area as a result of the proposed action. In addition, all sediments removed from the Site will be taken to the MISS for characterization and an eventual disposal determination.

5. ***The activity will not result in a violation of the Flood Hazard Area Control Act, N.J.S.A. 58-16A-50 or implementing rules at N.J.A.C. 7:13-1.***

**Response:** As noted previously in this application, a Letter of No Jurisdiction for the proposed activities in reference to the Flood Hazard Area Control Act is requested for the following reasons:

- a. The swale is part of the localized drainage system. It is formed as an outlet of Maywood's underground storm sewer system and is a documented man made feature. The swale is exposed for several hundred feet prior to entering another underground piping network.;
- b. The upstream drainage area feeding the swale is comprised solely of a storm drain system. The adjoining areas along the swale that drains to the swale itself is clearly less than 50 acres;

- c. The drainage swale is not present as a "blue-line" stream on USGS maps (Hackensack, N.J., 1981, see Attachment C) of the area; and,
- d. The swale is not within a designated 100-year floodplain area.

Therefore, the swale is not subject to jurisdiction under the Flood Hazard Area Control Act. The Applicant specifically requests that the Department provide a Letter of no Jurisdiction for the Flood Hazard Area Control Act, assuming agreement with the described conditions.

**6. *Best management practices shall be followed whenever applicable:***

**Response:** The proposed methods for excavation have been described in the project description portion of this letter. The proposed activities follow best management practices guidelines established under applicable or relevant appropriate requirements.

In accordance with N.J.A.C. 7:7A-9.5, "Application for activities under Statewide General Permits", the following information is presented for review:

**1. *An application form completed as per the instructions for a Statewide General Permit.***

An application form is provided as Attachment A of this letter.

**2. *Complete wetlands delineation including filed delineation, folded plans at an appropriate scale, and wetlands field data sheets including soils and vegetation information (no formal report is required) for the area to be disturbed under the Statewide general permit application.***

As noted above, all activities associated with removal of contaminated sediments from the drainage swale are considered to occur in freshwater wetlands. The area of excavation is shown on the enclosed site plan, Attachment B. The vegetation in the swale was described above. No soil borings were conducted in the swale for wetland delineation purposes because of the recognized contamination found in soil sediments.

**3. *A copy of the appropriate portion of the U.S. Geological Survey Quadrangle (USGS) Map for the project site and a determination of the State Plane coordinates for the end-points of the project.***

The USGS quadrangle for the Site is provided as Attachment C. The end-point coordinates for the project are: N750617.03, E2164593.10, and N750329.45, E2165384.26.

**4. *Photographs of the portion of the property for which authorization is being requested.***

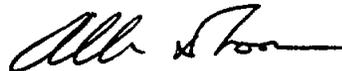
Photographs of the site are provided as Attachment D of this letter.

**5. *Applicant shall provide verification that a certified mail notice with return receipt requested and a complete copy of the application has been forwarded to the clerk of the municipality and that a certified mail notice with return receipt requested (white receipts or green cards are acceptable) has been forwarded to the environmental commission, or any public body with similar responsibilities, municipal planning***

***board, county planning board, municipal construction official and landowners within 200 feet of the legal boundary lines of the property(ies) on which the proposed activity will occur. Applicant must also provide a list of landowners within 200 feet.***

Copies of certified receipts for all property owners, government bodies, and a list of property owners within 200 feet are provided as Attachment E of this letter.

Please do not hesitate to contact me at 212-264-0120 with any questions.



Allen D. Roos  
Project Manager

Enclosures

CC: Angela Carpenter, EPA  
Donna Gaffigan, NJDEP  
Borough of Maywood Township Clerk  
Borough of Maywood Planning Board  
Borough of Maywood Environmental Commission  
Borough of Maywood Construction Official  
Bergen County Planning Board  
Borough of Rochelle Park Township Clerk  
Borough of Lodi Township Clerk

**ATTACHMENT A**  
**LAND USE REGULATION PROGRAM PERMIT APPLICATION**

**State of New Jersey**  
**Department of Environmental Protection**  
**Land Use Regulation Program Application Form (LURP #1)**

PLEASE PRINT OR TYPE THE FOLLOWING: (Complete all sections unless otherwise noted)  
NOTE: If you are applying for a CAFRA Permit by Rule, you need to complete items 1 thru 6 and the signature area on page 3 only.

1. Applicant Name U.S. Army Corps of Engineers  
Contact Name Mr. Allen Roos Daytime Phone # 212-264-0120  
Address U.S. Army Engineer District, FURAP Project Office, 26 Federal Plaza  
City New York State New York Zip 10278-0090

2. Agent Name NA Firm \_\_\_\_\_  
Address \_\_\_\_\_ Phone # \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

3. Project Location - Street Address Howcroft Road  
Municipality Maywood County Bergen  
Block(s) and Lot(s) Block 124, Lots 2,3,4,16,17,30  
State Plane Coordinates N 750329 feet E 2165384 feet  
Nearest Waterway Lodi Brook Watershed Saddle River

4. Total Fees not applicable Fees Paid not applicable Project Cost \$200,000 Check No. not applicable

5. Project Description: Proposed cleaning of drainage swale near Howcroft Avenue. The swale contains sediments composed of radium-226, thorium232 and uranium-238 on property formerly occupied by Maywood Chemical Works. The property is a recognized Superfund Site presently being remediated by the U.S. Army Corps of Engineers as part of FUSRAP. The project will entail the removal of approximately 700 cubic yards of sediments for transport to an authorized disposal site. Unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous substances or pollutants onto adjacent and nearby properties

<b>FOR OFFICIAL USE ONLY</b>	
File Number: _____	Permit Code: _____
Date Received: _____	Project Manager: _____
20th Day: _____	Project Engineer: _____
DEP Bulletin: _____	Date Entered: _____
ASU Date: _____	Amount Filled: _____

6. Application(s) for: (Please check all that apply)

Stream Encroachment:	Permit	_____	Waiver	<u>  X  </u>
CAFRA:	Individual Permit	_____	General Permit	_____
	Exemption Permit	_____	Permit by Rule	_____
Freshwater Wetlands:	Individual Permit	_____	General Permit	<u>  X  </u>
	Transition Area Waiver	_____	Letter of Interpretation	_____
	Exemption Request	_____	Open Water Fill Permit	_____
Waterfront Development:	Residential	_____	Commercial	_____
Water Quality Certificate		_____	Tidal Wetlands (1970)	_____
Federal Consistency Determination		_____	Jurisdictional Determination	_____
Permit Modification (specify)	_____			
Other (specify)	_____			

7. Indicate below if any of the following approvals, denials or certifications were received for the project site or are required for the proposed project:

- In Column A, indicate application status: (*P for* - pending, *A for* - approved, *D for* - denied, *T for* - to be applied for, or *O for* - other (explain other)).
- In Column B, indicate application, permit, or docket number.

	A	B		A	B
CAFRA Permit	_____	_____	Stream Encroachment Waiver	<u>  T  </u>	<u>  This application  </u>
CAFRA Permit Modification	_____	_____	Stream Encroachment Waiver	_____	_____
CAFRA Exemption	_____	_____	Stream Encroachment Permit Modification	_____	_____
Waterfront Development Permit	_____	_____	Water Quality Certificate	_____	_____
Tidal Wetlands (1970) Permit	_____	_____	Tidelands (Riparian) Conveyance	_____	_____
Statewide General Freshwater Wetlands Permit	<u>  T  </u>	<u>  This application  </u>	Dam Construction or Repair Permit	_____	_____
Freshwater Wetlands Letter of Interpretation	_____	_____	Pinelands Certificate of Filing	_____	_____
Freshwater Wetlands Transition Waiver	_____	_____	D & R Canal Commission Certificate	_____	_____
Individual Freshwater Wetlands Permit	_____	_____	Federal Permits (Specify)	_____	_____
Freshwater Wetlands Exemption	_____	_____	State Permits (Specify)	_____	_____
Pre-Application Conference	_____	_____			

APPLICANT SIGNATURE

I certify under penalty of law that the information provided in this document is true and accurate. I am aware that there are significant civil and criminal penalties for submitting false or inaccurate information. (If corporate entity, print/type the name and title of person signing on behalf of the corporate entity).

\_\_\_\_\_  
Signature of Applicant/Owner

\_\_\_\_\_  
Signature of Applicant/Owner

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

.....  
**A. PROPERTY OWNER'S CERTIFICATION**

I hereby certify that the undersigned is the owner of the property upon which the proposed work is to be done. This endorsement is certification that the owner grants permission for the conduct of the proposed activity. In addition, I hereby give unconditional written consent to allow access to the site by representatives or agents of the Department for the purpose of conducting a site inspection or survey of the project site.

In addition, the undersigned property owner hereby certifies:

1. Whether any work is to be done within an easement - YES  X  NO \_\_\_\_\_
  
2. Whether any part of the entire project (eg., pipeline, roadway, cable, transmission line, structure, etc.) will be located within property belonging to the State of New Jersey - YES \_\_\_\_\_ NO  X

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
*Type or Print Name and Address of Owner  
if different from item 1 on Page 1*

\_\_\_\_\_  
Date

\* \_\_\_\_\_  
Signature of Property Owner

\* The United States Army Corps of Engineers has executed Right of Entry agreements with the property owners. The agreements are attached to this Land Use Regulation Program Application Form (LURP #1).

**B. APPLICANT'S AGENT**

I       N/A       the Applicant/Owner, authorize to act as my agent/representative in all matters pertaining to my application the following person:

Name \_\_\_\_\_

Occupation/Profession \_\_\_\_\_

\_\_\_\_\_  
*(Signature of Applicant/Owner)*

**AGENT'S CERTIFICATION**

Sworn before me  
this \_\_\_\_\_ day of  
\_\_\_\_\_ 19 \_\_\_\_\_

I agree to serve as agent for the above-mentioned applicant.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(Signature of Agent)

**C. STATEMENT OF PREPARER OF PLANS, SPECIFICATIONS, SURVEYOR'S OR ENGINEER'S REPORT**

I hereby certify that the plans, specifications and engineer's report, if any, applicable to this project comply with the current rules and regulations of the New Jersey Department of Environmental Protection with the exceptions as noted.

      N/A        
Signature

\_\_\_\_\_  
Type: Name and Date

\_\_\_\_\_  
Position, Name of Firm

## DEPARTMENT OF THE ARMY

### RIGHT OF ENTRY

Howcroft Road, Maywood, NJ  
(Site Location)

Block 124, Lots 2, 3, 4, 16, 17, 30  
(Parcel Number)

The undersigned, hereinafter called the "Grantor," in consideration of the performance of remedial activities under the Formerly Utilized Sites Remedial Action Program ("FUSRAP") by the UNITED STATES OF AMERICA, hereinafter called the "Government," hereby grants to the Government, its agents, employees, representatives, contractors and assigns, an irrevocable right of entry upon the property located at, Maywood, New Jersey 07607, subject to the following terms and conditions:

1. This Right of Entry is entered into pursuant to the terms of the Memorandum of Understanding executed between Grantor and the Government on the 26 day of January 2000.
2. This Right of Entry is granted for purposes of performing surveys and investigations, collecting samples and making test borings, and remediating radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to store, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the Formerly Utilized Sites Remedial Action Program for a period not to exceed twelve (12) months and beginning on the date of execution of this document.
3. Performance of the work will be accomplished by Government personnel, as well as the Government's prime contractor, Stone & Webster Engineering Corporation (S&W), and by subcontractors of S&W, principally Franklin Environmental Services.
4. The Government is self-insured. The Government's prime contractor is in possession of a certificate of insurance, which will be provided to Grantor prior to commencement of any of the activities referenced above in paragraph 1.
5. This Right of Entry includes the right of ingress and egress on other lands of the Grantor provided that such ingress and egress is necessary and not otherwise conveniently available to the Government.
6. All tools, equipment, and other property taken or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this Right of Entry.
7. The Government will provide Grantor with five (5) days written notice prior to entry upon lands of the Grantor and prior to conducting any of the activities referenced above in paragraph 1.
8. The Government shall have the right to patrol and police the land during the period of this Right of Entry.
9. If any action of the Government in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor. In no event shall such repair or settlement exceed the fair market value of the fee simple title to the real property at the time immediately preceding such damage. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

10. Subject to applicable laws and regulations, the Government will bear all costs, claims, and damages to the property arising from Government remediation activities on the property, provided that Grantor notifies the Government within a reasonable time. The Government shall not be liable for damages to persons or property resulting from the negligent actions of the Grantor, its servants and/or employees.

WITNESS MY HAND this 25 day of January, 2000.

Wayne Kiss  
John Perkins, Borough Administrator  
Borough of Maywood WAYNE A. KISS, MAYOR

Accepted:

UNITED STATES OF AMERICA

By

[Signature]  
Robert W. Ryan  
Chief, Real Estate Division

**DEPARTMENT OF THE ARMY**  
**U.S. Army Corps of Engineers**  
**REAL ESTATE RIGHT-OF-ENTRY**  
**149-51 Maywood Avenue, Maywood, NJ 07607**

The undersigned, hereinafter called the "Grantor," in consideration of the performance of remedial activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the UNITED STATES OF AMERICA, hereinafter called the "Government," hereby grants to the government, its agents, employees, representatives, contractors and assigns, Right-of-Entry, revocable upon 30 days notice by Grantor, upon the property located at 149-51 Maywood Avenue, Maywood, NJ 07607. The lands affected by this Right-of-Entry are recorded at the Bergen County Tax Assessor's Office as Block 124, Lot 30, as shown on the map attached hereto, marked Exhibit "A" and made a part hereof.

1. This Right-of-Entry is granted for purpose of performing surveys, investigations, collecting samples, making test borings and cleaning radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to store, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the formerly Utilized Sites Remedial Action program (FUSRAP), collectively, the "Work," for a period not to exceed 36 months beginning on the date of execution of this document.

2. All Tools, equipment and other property taken or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within 60 days after the expiration of this Right-of-Entry.

3. The Government shall have the right to patrol and police the land during the period of this Right-of-Entry.

4. The Government shall give the Grantor and Sears Logistics Services, Inc. (the "Tenant") notice as soon as practicable as to the nature and scope of any Work project it intends to complete. Thereafter, the Government shall give the Grantor and Tenant at least ten business days notice of the date upon which the Work for that project shall commence and the days it intends to utilize the rights granted herein. Notice to be in writing and to Grantor at:

Howard E. Heller, Esq.  
Kin Properties, Inc.  
77 Tarrytown Road - Suite 100  
White Plains, New York 10607-1620

and to Tenant at:  
Sears Logistics Services, Inc.  
3333 Beverly Road  
Hoffman Estates, IL 60179  
Attention: Director, Logistics Real Estate

with a copy to:  
Sears Logistics Services, Inc.  
3333 Beverly Road  
Hoffman Estates, IL 60179  
Attention: General Counsel

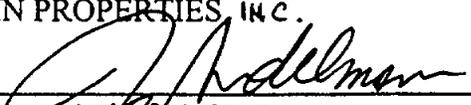
All Work shall be coordinated by the Government with Tenant by contracting Thomas R. Grandys at 847-645-5324 to insure that any activities to be undertaken by the Government do not interfere with Tenant's operations and its use of the subject property. The Government shall be liable to Tenant if any action of the Government, its employees or agents, in the exercise of the rights granted herein interferes with Tenant's operations and its use of the subject property. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor or Tenant may have to make a claim under applicable laws for any damages other than those provided for herein.

5. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor and/or the Tenant. In no event shall such repair or settlement exceed the fair market value of the fee simple interest of the real property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor or Tenant may have to make a claim under applicable laws for any damages other than those provided for herein.

6. The Government shall also be liable to Grantor, the Tenant and/or third parties for any damage to personal property or for any personal injuries caused by the Work or by the Government's employees or agents in the exercise of its rights herein. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor, Tenant or a third party may have to make a claim under applicable laws for any damages other than those provided for herein.

WITNESS MY HAND this 16<sup>th</sup> day of JUNE, 1999.

KIN PROPERTIES, INC.

  
Name: JEFFREY SANDELMAN  
Title: PRESIDENT

APPROVED  
As To Form

Date 6/15/99 HEM

ACCEPTED;

UNITED STATES OF AMERICA

By: \_\_\_\_\_

*[Signature]*  
Robert W. Hyatt  
Chief, Real Estate Division

9/30/99

Tenant acknowledges that the Government will be engaging in the activities mentioned above, and that Tenant will undertake to coordinate directly with representatives of the Government to assure that its operations are not interfered with, however, Tenant shall have no affirmative obligation to change or modify its existing work operations. Tenant consents to the grant of access by Kin Properties, Inc.

SEARS LOGISTICS SERVICES, INC.

By: \_\_\_\_\_

Name:

Title:

*[Signature]*  
Clint A. Brown  
Vice President Finance

R. E. MANAGER  
TRG  
LE...  
REG

**Department of the Army  
U. S. Army Corps of Engineers  
REAL ESTATE RIGHT-OF-ENTRY  
23 West Howcroft Road, Maywood, NJ 07607**

The undersigned, hereinafter called the "Grantor," in consideration of the performance of remedial activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the UNITED STATES OF AMERICA, hereinafter called the "government," hereby grants to the government, its agents, employees, representatives, contractors and assigns, an irrevocable Right-of-Entry upon the property located at 23 W. Howcroft Road, Maywood, NJ 07607. The lands affected by this Right-of-Entry are recorded at the Bergen County Tax Assessor's Office as Block 124, Lot 17, as shown on the map attached hereto, marked Exhibit "A" and made a part hereof.

1. This Right of Entry is granted for purpose of performing surveys, investigations, collecting samples, making test borings and cleaning radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to store, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the formerly Utilized Sites Remedial Action program (FUSRAP) for a period not to exceed 36 months beginning on the date of execution of this document.

2. This Right -of-Entry includes the right of ingress and egress on other lands of the Grantor provided that such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment and other property taken or placed upon the land by the Government shall remain the property of the government and may be removed by the Government at any time within a reasonable period after the expiration of this Right-of-Entry.

4. The Government shall have the right to patrol and police the land during the period of this Right-of-Entry.

5. The Government shall give the OWNER ~~three~~ (3) days notice of the date upon which the work shall commence and the days it intends to utilize the rights granted herein.

**Department of the Army  
U.S. Army Corps of Engineers  
Real Estate Right-of-Entry  
23 West Howcroft Road, Maywood, NJ 07607**

6. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor. In no event shall such repair or settlement exceed the fair market value of the fee simple interest of the real property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

WITNESS MY HAND this 23 day of February, 1999.

DeSAUSSURE EQUIPMENT COMPANY, INC.

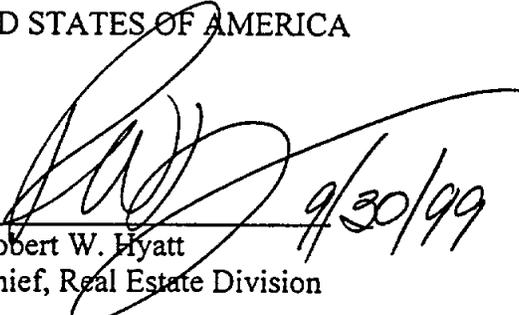
W.P. DeSaussure

Name:

Title : President

Accepted:

UNITED STATES OF AMERICA

By: 

9/30/99  
Robert W. Hyatt  
Chief, Real Estate Division

CERTIFICATE OF AUTHORITY

I, Barbara Jenkins

certify that I am the Secretary of the  
DeSaussure Equipment Company; the corporation

described in and which executed the forgoing instrument with the United

States of America; that the said corporation is organized under the laws of the

State of New Jersey; that the corporate seal

affixed to said instrument is the seal of said corporation; that

William P. DeSaussure IV who

executed said instrument as President of said

corporation was then President of said

corporation and has been duly authorized to execute said instrument in behalf

of said corporation; that I know the signature of said William P. DeSaussure IV

\_\_\_\_\_ ; and that the signature affixed to such instrument is genuine.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the

corporate seal of said corporation, this 22 day of February 1999.

Barbara Jenkins

**Department of the Army  
U. S. Army Corps of Engineers  
REAL ESTATE RIGHT-OF-ENTRY  
167 Route 17, Maywood, NJ 07607**

The undersigned, hereinafter called the "Grantor," in consideration of the performance of remedial activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the UNITED STATES OF AMERICA, hereinafter called the "government," hereby grants to the government, its agents, employees, representatives, contractors and assigns, an irrevocable Right-of-Entry upon the property located at 167 Route 17, Maywood, NJ 07607. The lands affected by this Right-of-Entry are recorded at the Bergen County Tax Assessor's Office as Block 124, Lot 2, as shown on the map attached hereto, marked Exhibit "A" and made a part hereof.

1. This Right of Entry is granted for purpose of performing surveys, investigations, collecting samples, making test borings and cleaning radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to store, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the formerly Utilized Sites Remedial Action program (FUSRAP) for a period not to exceed 36 months beginning on the date of execution of this document.

2. This Right -of-Entry includes the right of ingress and egress on other lands of the Grantor provided that such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment and other property taken or placed upon the land by the Government shall remain the property of the government and may be removed by the Government at any time within a reasonable period after the expiration of this Right-of-Entry.

4. The Government shall have the right to patrol and police the land during the period of this Right-of-Entry.

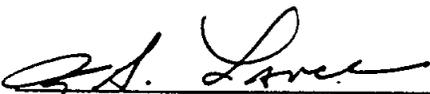
5. The Government shall give the OWNER ~~three~~ (3) days notice of the date upon which the work shall commence and the days it intends to utilize the rights granted herein.

**Department of the Army  
U.S. Army Corps of Engineers  
Real Estate Right-of-Entry  
167 Route 17, Maywood, NJ 07607**

6. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor. In no event shall such repair or settlement exceed the fair market value of the fee simple interest of the real property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

WITNESS MY HAND this 11<sup>th</sup> day of February, 1999.

SUN OIL COMPANY

  
Name: \_\_\_\_\_  
Title : Real Estate Manager

Accepted:

UNITED STATES OF AMERICA

 By:   
Robert W. Hyatt  
Chief, Real Estate Division



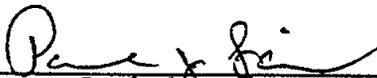


**Department of the Army  
U.S. Army Corps of Engineers  
Real Estate Right-of-Entry  
87 Route 17, Maywood, NY 07607**

6. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor. In no event shall such repair or settlement exceed the fair market value of the fee simple interest of the real property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

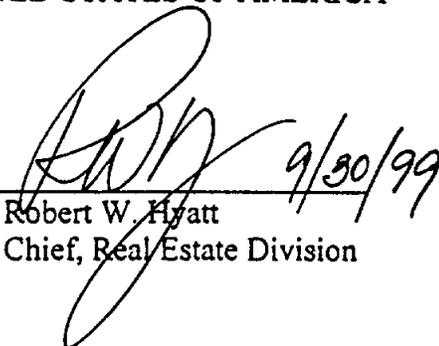
WITNESS MY HAND this 8th day of April, 1999.

S.W.S REALTY ASSOCIATES, A GENERAL PARTNERSHIP

  
Name: Paul J. Laino  
Title : General Partner

Accepted:

UNITED STATES OF AMERICA

  
By: Robert W. Hyatt  
Chief, Real Estate Division

Department of the Army  
U. S. Army Corps of Engineers  
REAL ESTATE RIGHT-OF-ENTRY  
137 Route 17, Maywood, NJ 07607

The undersigned, hereinafter called the "Grantor," in consideration of the performance of remedial activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the UNITED STATES OF AMERICA, hereinafter called the "government," hereby grants to the government, its agents, employees, representatives, contractors and assigns, an irrevocable Right-of-Entry upon the property located at 137 Route 17 Maywood, NJ 07607. The lands affected by this Right-of-Entry are recorded at the Bergen County Tax Assessor's Office as Block 124, Lot 3, as shown on the map attached hereto, marked Exhibit "A" and made a part hereof.

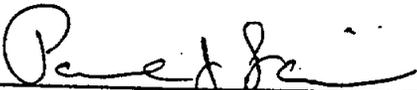
1. This Right of Entry is granted for purpose of performing surveys, investigations, collecting samples, making test borings and cleaning radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to store, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the formerly Utilized Sites Remedial Action program (FUSRAP) for a period not to exceed 36 months beginning on the date of execution of this document, all without cost to the Grantor.
2. This Right -of-Entry includes the right of ingress and egress on other lands of the Grantor provided that such ingress and egress is necessary and not otherwise conveniently available to the Government.
3. All tools, equipment and other property taken or placed upon the land by the Government shall remain the property of the government and may be removed by the Government at any time within a reasonable period after the expiration of this Right-of-Entry.
4. The Government shall have the right to patrol and police the land during the period of this Right-of-Entry.
5. The Government shall give the OWNER three (3) days notice of the date upon which the work shall commence and the days it intends to utilize the rights granted herein.

**Department of the Army  
U.S. Army Corps of Engineers  
Real Estate Right-of-Entry  
137 Route 17, Maywood, NY 07607**

6. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Grantor. In no event shall such repair or settlement exceed the fair market value of the fee simple interest of the real property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

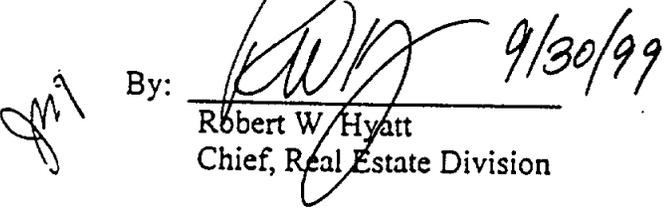
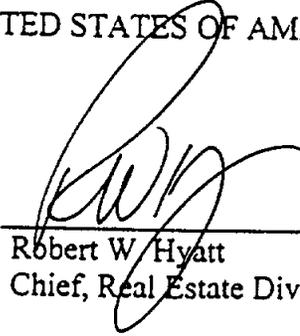
WITNESS MY HAND this 8th day of April, 1999.

AMP REALTY ASSOCIATES, A GENERAL PARTNERSHIP

  
Name: Paul J. Laino  
Title: General Partner

Accepted:

UNITED STATES OF AMERICA

  
By:   
Robert W. Hyatt  
Chief, Real Estate Division

## RIGHT OF ENTRY AGREEMENT

The United States of America hereinafter called the "Government," desires to perform remedial activities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) on property occupied by Federal Express Corporation ("Grantor"). Grantor occupies the property as the tenant pursuant to the terms and conditions of the that certain lease agreement between Grantor and Maurice M. Weill, Trustee for Nathan Pflasky, et als ("Landlord"), dated August 5, 1987, as amended. For good and valuable consideration, and in conformity with to the consent of Landlord appended hereto, the Grantor hereby grants to the Government, its agents, employees, representatives, contractors and assigns, a Right-of-Entry upon the property located at 29 Essex Street, Maywood, NJ 07607, recorded at the Bergen County Tax Assessor's Office as Block 124, Lot 5, (the "Premises") as shown on the map attached hereto, marked Exhibit "A" and made a part hereof.

1. This Right of Entry is granted for the purpose of the Government performing surveys, investigations, collecting samples, making test borings and cleaning radiological and chemical contamination of soils, groundwater and structures including, but not limited to, the right to, move and remove equipment and supplies; excavate and dispose of contaminated soil and backfill with suitable soil, and restore the property to its previous condition; construct, operate, maintain, repair, replace, and remove groundwater extraction, treatment and injection systems and monitoring wells; and perform such other work as may be necessary and incident to implementation of the FUSRAP for a period not to exceed 36 months beginning on the date of execution of this document.

2. The Government may enter the Premises and perform work pursuant to this Agreement at such times which have been approved in advance by Grantor's on-site manager.

3. All tools, equipment and other property taken or placed upon the Premises by the Government shall remain the property of the Government and shall be removed by the Government prior to the expiration of this Right-of-Entry.

4. Subject to Grantor's reasonable security requirements, the Government may patrol and police the Premises during the period of this Right-of-Entry in order to protect its equipment and secure the work which it performs.

5. The Government shall give the Grantor three (3) days notice of the date upon which the work shall commence and shall notify Grantor at least 24 hours in advance of the dates on which it plans to enter the Premises to exercise the rights granted herein.

6. If any action of the Government, its employees or agents, in the exercise of the rights granted herein results in an interference with the Grantor's operations or causes damage to the Premises or Grantor's personal property thereon, the Government will at Grantor's request, repair such damage to Grantor's reasonable satisfaction or make an appropriate monetary settlement with the Grantor to compensate Grantor for its loss. In no event shall such

repair or settlement exceed the fair market value of the Grantor's interest in the real or personal property at the time immediately preceding such damage. The Government's liability under this clause may not exceed appropriations available for such payment and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Grantor may have to make a claim under applicable laws for any damages other than those provided for herein.

WITNESS MY HAND this 3rd day of January, 1999.

FEDERAL EXPRESS CORPORATION

M. Jackson  
Name: Mitch Jackson  
Title: Manager, Environmental Engineering

Approved  
Legal Department  
JAS. 3/18/99

Accepted:

UNITED STATES OF AMERICA

[Signature] 9/30/99  
By: [Signature]  
Robert W. Hyatt  
Chief, Real Estate Division

Consented to:

[Signature]  
Maurice M. Weill, Trustee for  
Nathan Pflasky, et als. DOUGLAS FRIEDRICH  
AUTHORIZED AGENT

CERTIFICATE OF AUTHORITY

I, SYBILLE S. NOBLE

certify that I am the Assistant Secretary of ~~the~~

Federal Express Corporation; the corporation

described in and which executed the forgoing instrument with the United

States of America; that the said corporation is organized under the laws of the

State Delaware; that the corporate seal

affixed to said instrument is the seal of said corporation; that

Mitch Jackson who

executed said instrument as Manager, Environmental Engineering of said

corporation was then Manager, Environmental Engineering of said

corporation and has been duly authorized to execute said instrument in behalf

of said corporation; that I know the signature of said Mitch Jackson

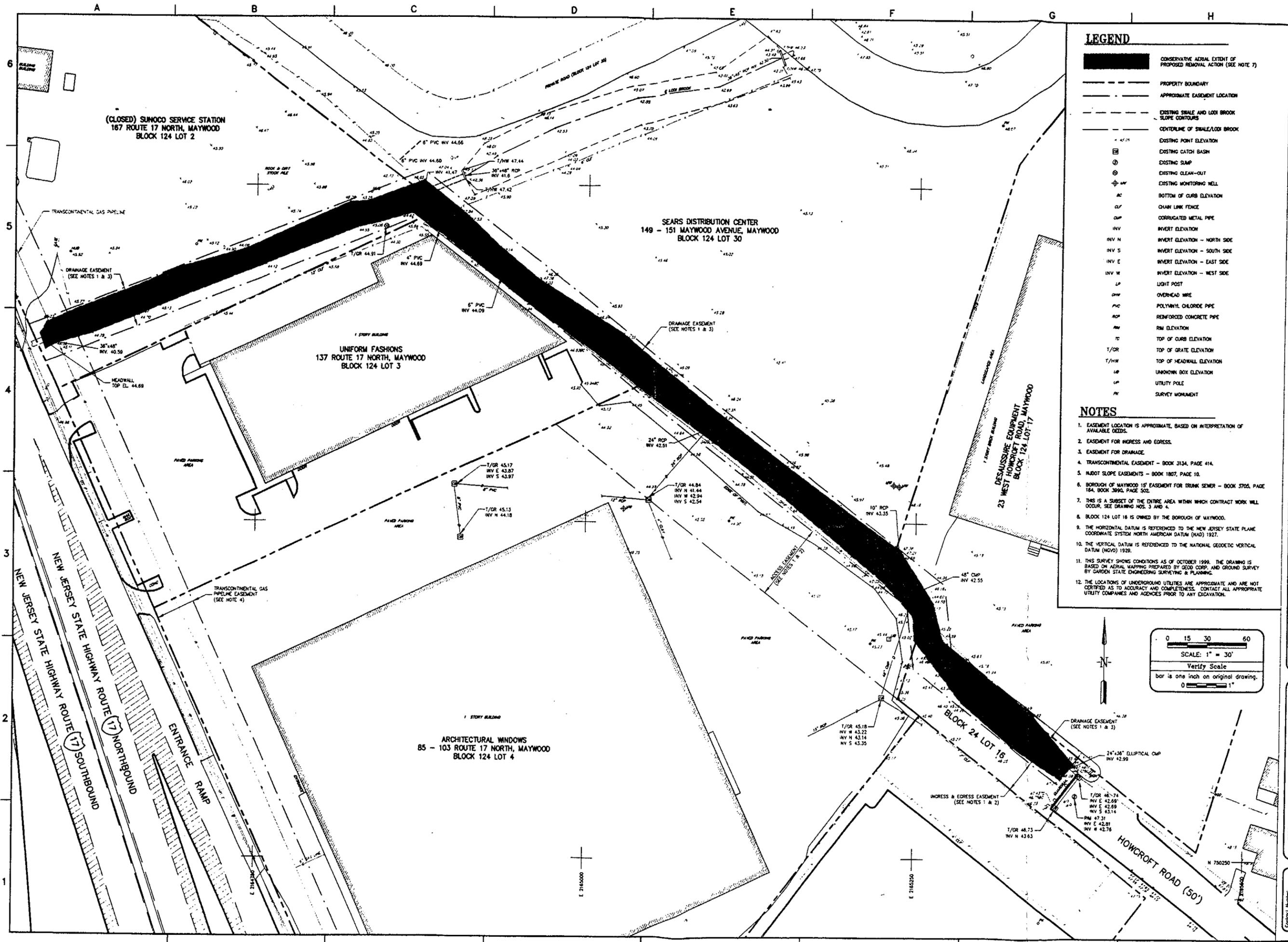
\_\_\_\_\_; and that the signature affixed to such instrument is genuine.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the

corporate seal of said corporation, this 29 day of March 1999.

Sybille S. Noble

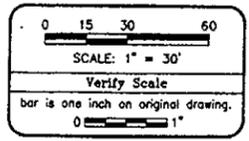
**ATTACHMENT B**  
**SITE PLAN**



### LEGEND

	CONSERVATIVE AERIAL EXTENT OF PROPOSED REMOVAL ACTION (SEE NOTE 7)
	PROPERTY BOUNDARY
	APPROXIMATE EASEMENT LOCATION
	EXISTING SWALE AND LOON BROOK SLOPE CONTOURS
	CENTERLINE OF SWALE/LOON BROOK
	EXISTING POINT ELEVATION
	EXISTING CATCH BASIN
	EXISTING SUMP
	EXISTING CLEAN-OUT
	EXISTING MONITORING WELL
	BOTTOM OF CURB ELEVATION
	CHAIN LINK FENCE
	CORRUGATED METAL PIPE
	INVERT ELEVATION
	INVERT ELEVATION - NORTH SIDE
	INVERT ELEVATION - SOUTH SIDE
	INVERT ELEVATION - EAST SIDE
	INVERT ELEVATION - WEST SIDE
	LIGHT POST
	OVERHEAD WIRE
	POLYVINYL CHLORIDE PIPE
	REINFORCED CONCRETE PIPE
	RM ELEVATION
	TOP OF CURB ELEVATION
	TOP OF GRATE ELEVATION
	TOP OF HEADWALL ELEVATION
	UNKNOWN BOX ELEVATION
	UTILITY POLE
	SURVEY MONUMENT

- ### NOTES
- EASEMENT LOCATION IS APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE RECORDS.
  - EASEMENT FOR INGRESS AND EGRESS.
  - EASEMENT FOR DRAINAGE.
  - TRANSCONTINENTAL EASEMENT - BOOK 3134, PAGE 414.
  - ROAD SLOPE EASEMENTS - BOOK 1807, PAGE 10.
  - BOROUGH OF MAYWOOD 1ST EASEMENT FOR TRUNK SEWER - BOOK 3705, PAGE 184, BOOK 3990, PAGE 502.
  - THIS IS A SUBSET OF THE ENTIRE AREA WITHIN WHICH CONTRACT WORK WILL OCCUR, SEE DRAWING NOS. 3 AND 4.
  - BLOCK 124 LOT 18 IS OWNED BY THE BOROUGH OF MAYWOOD.
  - THE HORIZONTAL DATUM IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM (NAD) 1927.
  - THE VERTICAL DATUM IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
  - THIS SURVEY SHOWS CONDITIONS AS OF OCTOBER 1999. THE DRAWING IS BASED ON AERIAL MAPPING PREPARED BY GEOD CORP. AND GROUND SURVEY BY GARDEN STATE ENGINEERING SURVEYING & PLANNING.
  - THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO ACCURACY AND COMPLETENESS. CONTACT ALL APPROPRIATE UTILITY COMPANIES AND AGENCIES PRIOR TO ANY EXCAVATION.



Revision	Description	By	Date

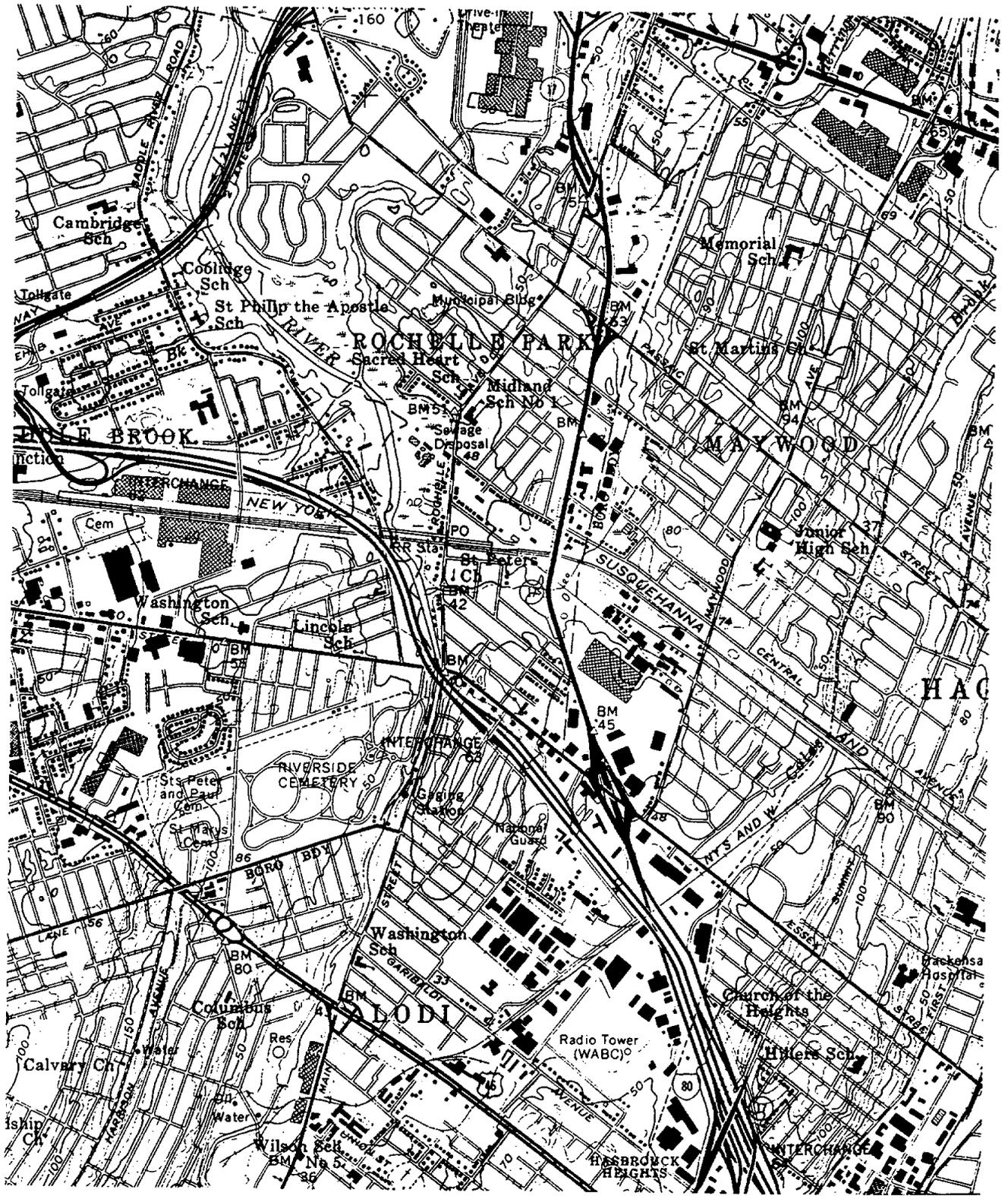
STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES  
 Prepared by: M. CHINBERA  
 Checked by: C. BRISSETT  
 A. BROWN, PE  
 Date: 11/19/99  
 Date: 11/19/99  
 Date: 1/8/00  
 Approved: D. SAMELA, PE  
 File Name: MAYWOOD\8575401A.dwg

U.S. ARMY ENGINEER DIVISION  
 CORPS OF ENGINEERS  
 MAYWOOD, NEW JERSEY  
**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
 MAYWOOD, NEW JERSEY  
 EXISTING SITE LAYOUT MAP

Contract Number: DAWN1-99-D-0001  
 Delivery Order Number: 08575 0250  
 Project Number: 08575 0250  
 Drawing Number: TCRA-2

**ATTACHMENT C**  
**USGS QUADRANGLE**



**ATTACHMENT D**  
**SITE PHOTOGRAPHS**

**ATTACHMENT D**

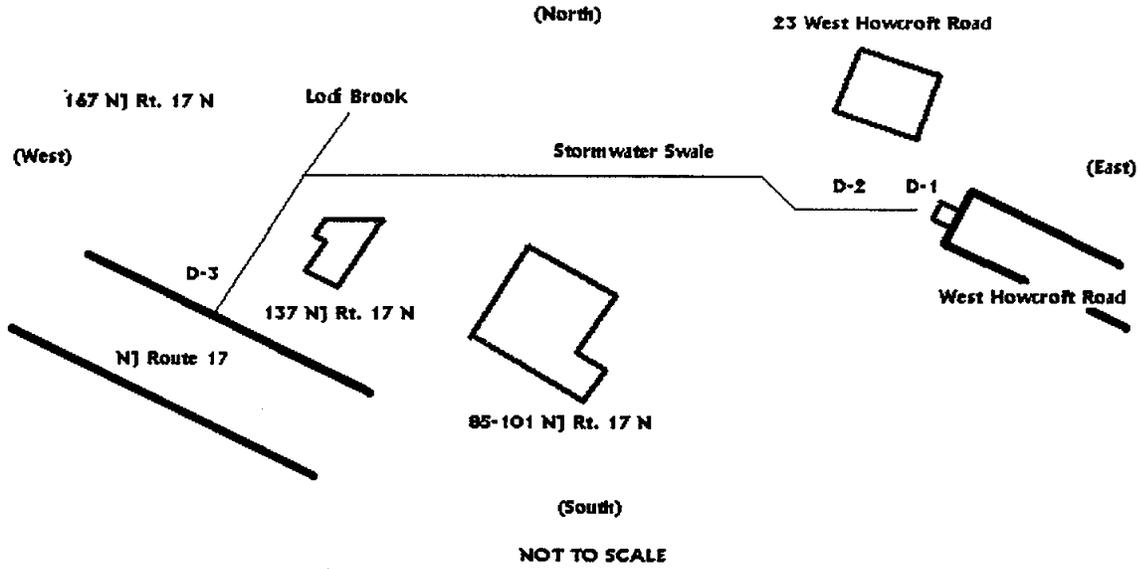


Figure D-1: Photo locations.



Photo D-1: View of upstream culvert, 23 West Howcroft Road  
(Observation: Only about the top 8"-10" of the 36" culvert is open. The rest is silted.)

**ATTACHMENT D (Continued)**



Photo D-2: View of sediment at upgradient invert, 23 West Howcroft Road.



Photo D-3: View of downstream culvert, NJ Route 17 North  
(Observation: This is a 5' wide x 2' deep culvert)

**ATTACHMENT E**  
**CERTIFIED MAIL RECEIPTS**

Z 081 026 429  
 US Postal Service  
**Receipt for Certified Mail**

R. Mucci  
 74 Spring Valley Rd.  
 Paramus NJ 07652

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 192  
 US Postal Service  
**Receipt for Certified Mail**

C. Zoccoli  
 155 Polifly Rd.  
 Hackensack NJ 07601

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 202  
 US Postal Service  
**Receipt for Certified Mail**

C. Zoccoli  
 295 Lakeside Dr.  
 Ramsey NJ 07446

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 081 026 430  
 US Postal Service  
**Receipt for Certified Mail**

M. Senia  
 121 Central Ave  
 Lodi NJ 07664

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 193

US Postal Service  
**Receipt for Certified Mail**

R. Alonso  
43 Maywood Ave  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 203

US Postal Service  
**Receipt for Certified Mail**

R. and D. Zeni  
45 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 183

US Postal Service  
**Receipt for Certified Mail**

F. and L. Whurl  
55 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 194

US Postal Service  
**Receipt for Certified Mail**

D. and K. Gaffney  
63 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 165

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to <i>Borough of Maywood</i>	
Street & Number <i>454 Maywood Ave</i>	
Post Office, State, & ZIP Code <i>Maywood NJ 07607</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ <i>4.96</i>
Postmark or Date	

PS Form 3800, April 1995

P 403 480 184

US Postal Service  
**Receipt for Certified Mail**

E. Sylan  
79 Maywood Ave.  
Maywood NJ 07607

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

PS Form 3800, April 1995

P 403 480 195

US Postal Service  
**Receipt for Certified Mail**

P. and L. Oey  
85 Maywood Ave.  
Maywood NJ 07607

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

PS Form 3800, April 1995

P 403 480 205

US Postal Service  
**Receipt for Certified Mail**

C. DeBlasio  
91 Maywood Ave.  
Maywood NJ 07607

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

PS Form 3800, April 1995

P 403 480 186

US Postal Service  
**Receipt for Certified Mail**

R. and R. Castor  
95 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 196

US Postal Service  
**Receipt for Certified Mail**

V. Campos  
99 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 206

US Postal Service  
**Receipt for Certified Mail**

J. Aficano  
105 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 187

US Postal Service  
**Receipt for Certified Mail**

Mujemulta/Natividad Etals  
111 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 197

US Postal Service  
Receipt for Certified Mail

F. Paynton  
117 Maywood Ave  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.42</b>
Postmark or Date	

P 403 480 207

US Postal Service  
Receipt for Certified Mail

D. and L. Lapore  
123 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 188

US Postal Service  
Receipt for Certified Mail

DeLaBrugere/DeCastro  
129 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 208

US Postal Service  
Receipt for Certified Mail

W. and D. Mandrell  
133 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 199

US Postal Service  
**Receipt for Certified Mail**

E. Miller  
137 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 190

US Postal Service  
**Receipt for Certified Mail**

Stepan Company Attn: Tax Department  
22 W. Frontage Rd.  
Northfield IL 60093

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 191

US Postal Service  
**Receipt for Certified Mail**

M. and E. Adler  
61 Hunter Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 211

US Postal Service  
**Receipt for Certified Mail**

J. Muscarelle  
99 Essex St.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 167

US Postal Service  
**Receipt for Certified Mail**

The Bank of New York  
48 Wall St.  
New York NY 10286

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 157

US Postal Service  
**Receipt for Certified Mail**

200 Rt. 17 LLC  
153 Fort Lee Rd.  
Teaneck NJ 07666

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 168

US Postal Service  
**Receipt for Certified Mail**

Freeman c/o Amerada Hess  
1 Hess Plaza  
Woodbridge NJ 07095

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 198

US Postal Service  
**Receipt for Certified Mail**

G. Brewster  
17 Beech St.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 189

US Postal Service  
Receipt for Certified Mail

J. and T. Rykowski  
13 Beech St.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 209

US Postal Service  
Receipt for Certified Mail

E. and J. Ruvere  
154 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 200

US Postal Service  
Receipt for Certified Mail

S. Frenzel  
158 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 210

US Postal Service  
Receipt for Certified Mail

M. Thalman  
162 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 201

US Postal Service  
**Receipt for Certified Mail**

Alfaro/Tronolone  
166 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 156

US Postal Service  
**Receipt for Certified Mail**  
No Insurance Coverage Provided

A. and M. Carroll  
170 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 179

US Postal Service  
**Receipt for Certified Mail**

R. Eisele  
232 Oradell Ave.  
Paramus NJ 07652

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 180

US Postal Service  
**Receipt for Certified Mail**

Etals Lumann L  
3 Berry Ct.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 158

US Postal Service  
**Receipt for Certified Mail**

Dasilva/Clancetta  
5 Berry Ct.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 159

US Postal Service  
**Receipt for Certified Mail**

D. Colwell  
186 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 169

US Postal Service  
**Receipt for Certified Mail**

A. and C. Brown  
4 Berry Ct.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 182

US Postal Service  
**Receipt for Certified Mail**

P. and E. Scanel  
770 Summit Ave.  
Hackensack NJ 07601

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 172

US Postal Service  
Receipt for Certified Mail

J. Mordaga  
106 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 161

US Postal Service  
Receipt for Certified Mail

A. and K. Trezza  
108 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 081 026 433

US Postal Service  
Receipt for Certified Mail

B. and A. DiLauri  
43 Brown Circle  
Paramus NJ 07652

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 174

US Postal Service  
Receipt for Certified Mail

W. and S. Ali  
140 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 176

US Postal Service  
**Receipt for Certified Mail**

A., R., and A. DeLuca  
80 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 164

US Postal Service  
**Receipt for Certified Mail**

R. and M. Cavanaugh  
84 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 081 026 427

US Postal Service  
**Receipt for Certified Mail**

M. and J. DeMarco  
92 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 181

US Postal Service  
**Receipt for Certified Mail**

J. and C. Almodovar  
96 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.47</b>
Postmark or Date	

P 403 480 171

US Postal Service  
Receipt for Certified Mail

A. and W. Hylicke  
4 Hammell Pl.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

P 403 480 160

US Postal Service  
Receipt for Certified Mail

M. and R. Kuhlenkamp  
10 Hammell Pl.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

Z 081 026 432

US Postal Service  
Receipt for Certified Mail

R. and D. Pastor  
42 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 3.42
Postmark or Date	

P 403 480 173

US Postal Service  
Receipt for Certified Mail

Witt/Bligh  
50 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

P 403 480 162

US Postal Service  
**Receipt for Certified Mail**

L. Hodgson  
52 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 081 026 434

US Postal Service  
**Receipt for Certified Mail**

Zisa  
58 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 163

US Postal Service  
**Receipt for Certified Mail**

E. and L. Bartoutjian  
66 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 374 313 570

US Postal Service  
**Receipt for Certified Mail**

A. and M. Kaser  
16 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 177

US Postal Service  
Receipt for Certified Mail

Maldonado/Ramiro  
22 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 212

US Postal Service  
Receipt for Certified Mail

AT & T Communications  
W. Passaic St.  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 204

US Postal Service  
Receipt for Certified Mail

Borough of Maywood  
459 Maywood Ave.  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 223

US Postal Service  
Receipt for Certified Mail

R, Balassi, Taylor Parisi  
71 Grove Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 220

US Postal Service  
**Receipt for Certified Mail**

BCVA Administrative Office  
Foot of Mehrhof Rd.  
Little Ferry NJ 07074

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 232

US Postal Service  
**Receipt for Certified Mail**

134 Becker Ane / NC  
134 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 230

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to  
**BERGEN COUNTY PLANNING BOARD**  
Street & Number **COURT PLAZA SOUTH**  
**21 MAIN ST. ROOM 240 W.**

Post Office, State, & ZIP Code  
**HACKENSACK NJ 07601-7000**

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.47</b>
Postmark or Date	

PS Form 3800, April 1995

Z 081 026 426

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided

Bell Atlantic  
467 Allwood Ave.  
Clifton NJ 07012

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 222 .

US Postal Service  
**Receipt for Certified Mail**

NT, FR, Comia, D. Canilao  
151 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 219

US Postal Service  
**Receipt for Certified Mail**

Cablevision of New Jersey  
5 Legion Drive  
Cresskill NJ 07626

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 166

US Postal Service  
**Receipt for Certified Mail**

County Planning Board  
21 Main Street  
Hackensack NJ 07601

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 226

US Postal Service  
**Receipt for Certified Mail**

Department of Defense  
Eggers Crossing Road  
Trenton NJ 08625

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 233

US Postal Service  
Receipt for Certified Mail

David and Adrianna Knapp  
130 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 225

US Postal Service  
Receipt for Certified Mail

William and Geraldine Kero  
66 Grove Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 217

US Postal Service  
Receipt for Certified Mail

Richard Migliorisi  
126 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 213

US Postal Service  
Receipt for Certified Mail

N., D., & D. Jr. Meador  
137 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 234

US Postal Service  
Receipt for Certified Mail

Outdoor Systems Inc  
185 US HWY 46  
Fairfield NJ 07004

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Z 081 026 428

US Postal Service  
Receipt for Certified Mail

P. S. E. G. Mail Code T4B  
80 Park Place  
Newark NJ 07012

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 216

US Postal Service  
Receipt for Certified Mail

Ray Borroughs New Jersey Department of  
Transportation Region 2 Headquarters  
#2 Route 21  
Newark NJ 07114

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 178

US Postal Service  
Receipt for Certified Mail

Rochelle Park Planning Bd.  
151 W. Passaic St.  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 229

US Postal Service  
**Receipt for Certified Mail**

Rong, Yo, Jisheng Wang  
145 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 214

US Postal Service  
**Receipt for Certified Mail**

Ghaida Shehab  
147 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 218

US Postal Service  
**Receipt for Certified Mail**

Stepan Company  
100 W. Hunter  
Maywood NJ 07607

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 175

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
TOWNSHIP CLERK - BORO. OF LODI	
Street & Number	
ONE MEMORIAL DRIVE	
Post Office, State, & ZIP Code	
LODI NJ 07644	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

PS Form 3800, April 1995

P 403-480 227

US Postal Service  
**Receipt for Certified Mail**

Transcontinental Gas Pipe Line  
718 Paterson Plank Rd.  
Carlstadt NJ 07072

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 221

US Postal Service  
**Receipt for Certified Mail**  
No Insurance Coverage Provided.

John and Veronica Treglia  
141 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 185

US Postal Service  
**Receipt for Certified Mail**  
No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to:  
Township Clerk  
Street & Number  
151 W. Passaic St.  
Post Office, State, & ZIP Code  
Rochelle Pk. NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 235

US Postal Service  
**Receipt for Certified Mail**

U.S. Reserve Center  
Washington DC 20315

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 228

US Postal Service  
**Receipt for Certified Mail**

United Water of New Jersey  
200 Old Hook Rd.  
Harrington Park NJ

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 224

US Postal Service  
**Receipt for Certified Mail**

Yenn Huai, Ling Ya Lin Hsien  
55 Route 17 South  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 231

US Postal Service  
**Receipt for Certified Mail**

Bruce R. and Diane Van Wyk  
155 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

P 403 480 215

US Postal Service  
**Receipt for Certified Mail**

S. and Virginia Zagleske  
159 Becker Ave  
Rochelle Park NJ 07662

PS Form 3800, April 1995

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

Army Corps of Engineers  
Block 124, Lots 2, 3, 4, 5, 17, 30  
Maywood, NJ

The following are Maywood property owners within 200 feet of the above noted properties.

BLOCK 124	Lot 16
Lot 6 & 7	Borough of Maywood
Mucci, R	459 Maywood Ave
74 Spring Valley Rd	Lot 18
Paramus, NJ 07652	Sylan, E
Lot 8 & 9	79 Maywood Ave
Zoccoli, C	Lot 19
155 Polifly Rd #201	Oey, P&L
Hackensack, NJ 07601	85 Maywood Ave
Lot 10	Lot 20
Zoccoli, C	DeBlasio, C
295 Lakeside Dr	91 Maywood Ave
Ramsey, NJ 07446	Lot 21
Lot 11	Castor, R&R
Senia, M	95 Maywood Ave
121 Central Ave	Lot 22
Lodi, NJ 07664	Campos, V
Lot 12	99 Maywood Ave
Alonso, R	Lot 23
43 Maywood Ave.	Africano, J
Maywood	105 Maywood Ave
Lot 13	Lot 24
Zeni, R&D	Mujemulta/Natividad Etals
45 Maywood Ave	111 Maywood Ave
Lot 14	Lot 25
Whurl, F&L	Paynton, F
55 Maywood Ave	117 Maywood Ave
Lot 15	Lot 26
Gaffney, D&K	Lepore, D&L
63 Maywood Ave	123 Maywood Ave

cont.

Lot 27  
DeLaBrugere/DeCastro  
129 Maywood Ave

Lot 28  
Mandrell, W&D  
133 Maywood Ave

Lot 29  
Miller, E  
137 Maywood Ave

Lot 31, 32, 33  
Stepan Company  
Attn: Tax Department  
22 W. Frontage Rd  
Northfield, IL 60093

Lot 34  
Adler, M&E  
61 Hunter Ave  
;  
BLOCK 125

Lot 1  
Muscarelle, J  
99 Essex St

Lot 2  
The Bank of New York  
48 Wall St 24<sup>th</sup> Floor  
New York, NY 10286

Lot 3  
200 Rt 17 LLC  
153 Fort Lee Rd  
Teaneck, NJ 07666

Lot 4 & 5  
Freeman, c/o Amerada Hess  
1 Hess Plaza STA 3321  
Woodbridge, NJ 07095

BLOCK 129

Lot 8  
Brewster, G  
17 Beech St

Lot 9  
Rykowski, J&T  
13 Beech St

Lot 10  
Ruvere, E&J  
154 Maywood Ave

Lot 11  
Frenzel, S  
158 Maywood Ave

Lot 12  
Thalman, M  
162 Maywood Ave

Lot 13  
Alfaro/Tronolone  
166 Maywood Ave

Lot 14  
Carroll, A&M  
170 Maywood Ave

Lot 15  
Eisele, R  
232 Oradell Ave  
Paramus, NJ 07652

Lot 16  
Luhmann L, Etals  
3 Berry Court

Lot 17  
Dasilva/Clancetta  
5 Berry Court

Lot 20  
Brown, A&C  
4 Berry Court

Lot 21  
Colwell, D  
186 Maywood Ave

Lot 22  
Scanel, P&E  
770 Summit Ave  
Hackensack, NJ 07601

BLOCK 132

Lot 14  
Mordaga, J  
106 Maywood Ave

Lot 15  
Trezza, A&K  
108 Maywood Ave

Lot 16  
DiLauri, B&A  
43 Brown Circle  
Paramus, NJ 07652

Lot 17  
Ali, W&S  
140 Maywood Ave

BLOCK 133

Lot 13  
DeLuca, A,R&A  
80 Maywood Ave

Lot 14  
Cavanaugh, R&M  
84 Maywood Ave

Lot 15  
DeMarco, M&J  
92 Maywood Ave

Lot 16  
Almodovar, J&C  
96 Maywood Ave

Lot 17  
Hylicke, A&W  
4 Hammell Pl

Lot 18  
Kuhlenkamp, M&R  
10 Hammell Pl

BLOCK 134

Lot 4  
Pastor, R&D  
42 Maywood Ave

Lot 5  
Witt/Bligh  
50 Maywood Ave

Lot 6  
Hodgson, L  
52 Maywood Ave

Lot 7  
Zisa,  
58 Maywood Ave

Lot 8  
Bartoutjian, E&L  
66 Maywood Ave

BLOCK 135

Lot 6  
Kaser, A&M  
16 Maywood Ave

Lot 7  
Maldonado/Ramiro  
22 Maywood Ave

59

County Planning Board  
Administration Building  
Court Plaza South  
21 Main Street  
Hackensack, NJ 07601

**List of Properties in:**

**Township of Rochelle Park**

and

**Borough of Lodi  
One Memorial Drive  
Lodi,**

**Department of Transportation  
1035 Parkway Avenue  
CN 600  
Trenton, NJ 08625**

;

I certify that the above is an accurate and complete list of property owners and addresses who must be given notice pursuant to the requirements of N.J.S.A. 40:55D-12. This list has been prepared from the most recent tax rolls.

*Joseph Mellone*

— Rochelle Park —

Block: 17.02 Lot: 1

Address: GROVE STREET

PROPERTY OWNER: JECO CORP & KIN PROPERTY DATE: 11.19.99

PAGE 1 of 2

BLK	LOT(S)	OWNER	ADDRESS
		ROCHELLE PARK PLANNING BD	151 W. PASSAIC ST. ROCH. PK 07662
		P.S.E.G. - MAIL CODE TAB	80 PARK PLACE, NEWARK, NJ 07101
		BELL ATLANTIC	467 HILLWOOD AVE, CLIFTON, NJ 07012
		CABLEVISION OF NJ	5 LEGION DRIVE, CRESSKILL, NJ 07626
		TRANSCONTINENTAL GAS PIPE LINE	718 PATERSON PLANK RD. CARLESTADT 07072
		AT&T COMMUNICATIONS	W PASSAIC ST. ROCHELLE PK 07662
		BCUA - Adm. Office	FOOT OF MEHRHOFF RD. LITTLE FERRY 07644
		UNITED WATER OF NEW JERSEY	200 OLD HOOK RD. HARRINGTON PK 07644
		TOWNSHIP OF MAYWOOD	459 MAYWOOD AVE - MAYWOOD 07607
		NJ Dept Transportation - Reg 2 boards	#2 Rte 21 - Newark - NJ 07104 <sup>HWY RAY</sup> <sub>BURROUGHS</sub>
9	7-8	MEADOR, N° D° D Jr.	137 BECKER AVE
9	9-10	TREGLIA, JOHN & VERONICA	141 BECKER AVE
9	11-12	WANG, PONG & YU, JISHENG	145 BECKER AVE
9	13-14	SHEHAB, GHADA	147 BECKER AVE
9	15-16	CANILAB, NT° FR° COMIA, D	151 BECKER AVE
9	17-19	VAN WYK, BRUCE R° DIANE	155 BECKER AVE
9	20-22	ZAGLESKI, S.° VIRGINIA	159 BECKER AVE
15	31-34	PARISI, R° GALASSO° TAYLOR	71 GROVE AVE
16	1-6	134 BECKER AVE INC	134 BECKER AVE
16	7	134 BECKER AVE INC	134 BECKER AVE
16	34-35	HSIEN, YENN HUIA / LING, YA LIN	55 RTE 1750 - ROCHELLE PK
16	36-37	KNAPP, DAVID° ADRIANNA	130 BECKER AVE
16	38-39	MIGLIORISI, RICHARD	126 BECKER AVE
17.02	70-72	KERO, WILLIAM° GERALDINE	66 GROVE AVE
17.03	73-79	OUTDOOR SYSTEMS INC	185 W HWY 46 - FAIRFIELD 07004



12/5/99

Subject - Maywood Block 124 Lot 5

286 / 101

Dept of Defense  
Edge of Crossing Road  
Trenton, NJ 08625

193.02 (Lot) U.S. Reserve Center

Exempt Street  
Rt 17

Mailing address Washington, D.C. 20315

George P. ... / m m

Dec 20 - 1999

Lodi Tax Assessor



**DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT, CORPS OF ENGINEERS  
JACOB K. JAVITS FEDERAL BUILDING  
NEW YORK, N.Y. 10278-0090**

REPLY TO  
ATTENTION OF

January 3, 2000

Programs and Project Management Division

**RE: Maywood FUSRAP Site  
Block 124, Lots 2, 3, 4, 16, 17, 30  
Borough of Maywood  
Bergen County, New Jersey  
Request for Statewide General Permit #4**

**Dear**

This letter serves as notification that the U.S. Army Corps of Engineers (USACE) is requesting a Freshwater Wetlands Statewide General Permit #4 from the New Jersey Department of Environmental Protection, Land Use Regulation Element, to remove contaminated sediments from a drainage swale on a vicinity property of the Maywood Interim Storage Site (MISS). The MISS and vicinity properties are part of the Maywood Chemical Company site, located in and near Maywood, New Jersey. A Statewide general permit will allow the USACE to conduct certain limited activities in freshwater wetlands or State open waters.

A removal action is being proposed to remove contaminated sediments from a drainage swale located on the southern portion of the former Maywood Chemical Works. The swale currently is located in a Borough drainage easement on properties occupied by the DeSaussure Equipment Corp., FedEx, Architectural Window Manufacturing Corp., Uniform Fashions Shop and the Sears Distribution Center. All of these properties have been identified as having radiological wastes belonging to the Formerly Utilized Sites Remedial Action Program (FUSRAP). Congress assigned USACE the lead role in cleaning up FUSRAP waste in the 1998 Energy and Water Development Appropriations Act. The swale receives surface runoff from the aforementioned properties and storm sewer discharges from the residential areas east of Maywood Avenue.

Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999 and additional heavy rains over the following two weeks created regional and localized flooding. The extremely heavy rainfall caused a culvert and drainage swale, which drains surface water runoff from the Site to backup and become silted in. Unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous contaminants onto adjacent and nearby properties.

The complete Statewide general permit application package can be reviewed at either the municipal clerk's office or by appointment at the Land Use Regulation Element at the address below. The Department of Environmental Protection welcomes comments and any information that you may provide concerning the wetlands or open waters on the referenced parcel. Written comments should be submitted to the Department within 15 days of receiving notice. Comments will be accepted until the Department makes a decision on the application. Please submit your written comments along with a copy of this letter to:

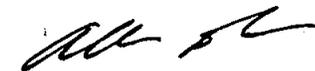
New Jersey Department of Environmental Protection  
Land Use Regulation Element  
Bureau of Regulation  
P.O. Box 439, 5 Station Plaza  
Trenton, New Jersey 08625

Attn: Bergen County Section Chief

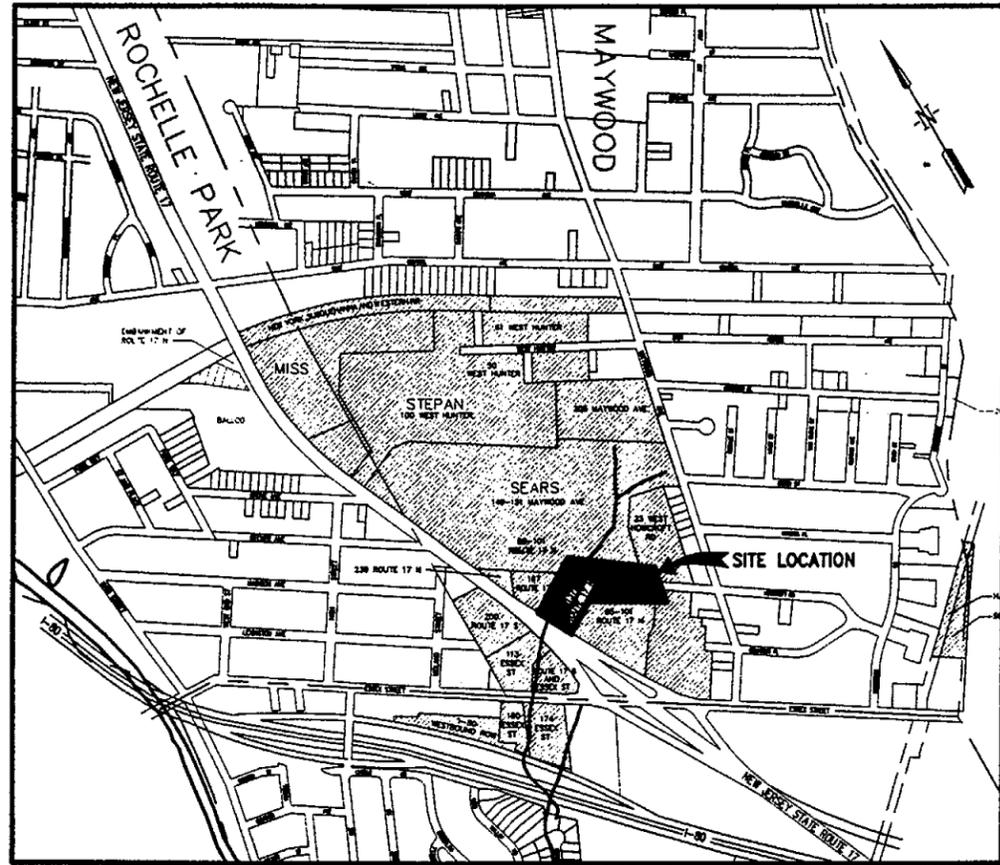
As part of the review of this application, Department personnel may perform a site inspection on your property. This site inspection will involve only that area within a maximum of 150 feet from the border of the existing drainage swale. This site visit will involve a visual inspection and possibly minor soil borings using a 4" diameter hand auger. The inspection will not result in any damage to the vegetation or improvements on your property.

The Department will notify your municipal environmental commission, planning board and the municipal construction official, as well as the county planning board of the Department's approval or denial of the Statewide general permits application.

Sincerely,



Allen D. Roos  
Project Manager



SITE LOCATION MAP

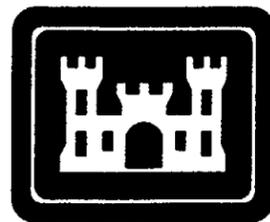
### INDEX TO DRAWINGS

DRAWING TITLE	DRAWING NO.
COVER SHEET AND INDEX TO DRAWINGS	TCRA-1
EXISTING SITE LAYOUT MAP	TCRA-2
SITE PREPARATION/LAYOUT	TCRA-3
LIMITS OF SITE WORK	TCRA-4
MISCELLANEOUS DETAILS	TCRA-5
CONSTRUCTION NOTES AND SPECIFICATIONS	TCRA-6

# DESIGN DRAWINGS FUSRAP MAYWOOD SUPERFUND SITE DRAINAGE SWALE/TIME CRITICAL REMOVAL ACTION MAYWOOD, NEW JERSEY

PREPARED FOR

U.S. ARMY  
CORPS OF ENGINEERS  
NEW YORK DISTRICT



**FUSRAP**



Symbol	Description	Revision
A	ORIGINAL P&S	

	Date: 11/16/99 Drawn by: M. CHAIKINA Checked by: C. BURSCHE Approved by: U. SARGENT, PE	Date: 11/22/99 Fee Name: MAYWOOD/8575405A.dwg
	Project: FUSRAP MAYWOOD SUPERFUND SITE Project Number: 08575.0250 Drawing Number: TCRA-1	

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

COVER SHEET AND  
INDEX TO DRAWINGS

Contract Number: DACW41-99-0-9001  
 Delivery Order Number:  
 Project Number: 08575.0250  
 Drawing Number: TCRA-1

Revision	Description	Date
1	ORIGINAL ISSUE	

STONE & WEBSTER ENVIRONMENTAL  
TECHNOLOGY & SERVICES

Drawn by: M. LAMBERTA Date: 11/19/99  
Checked by: C. BIRNICH Date: 11/19/99  
Reviewed by: D. SHELBA, PE Date: 11/23/99

Project Name: MAYWOOD-0575401A.dwg

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

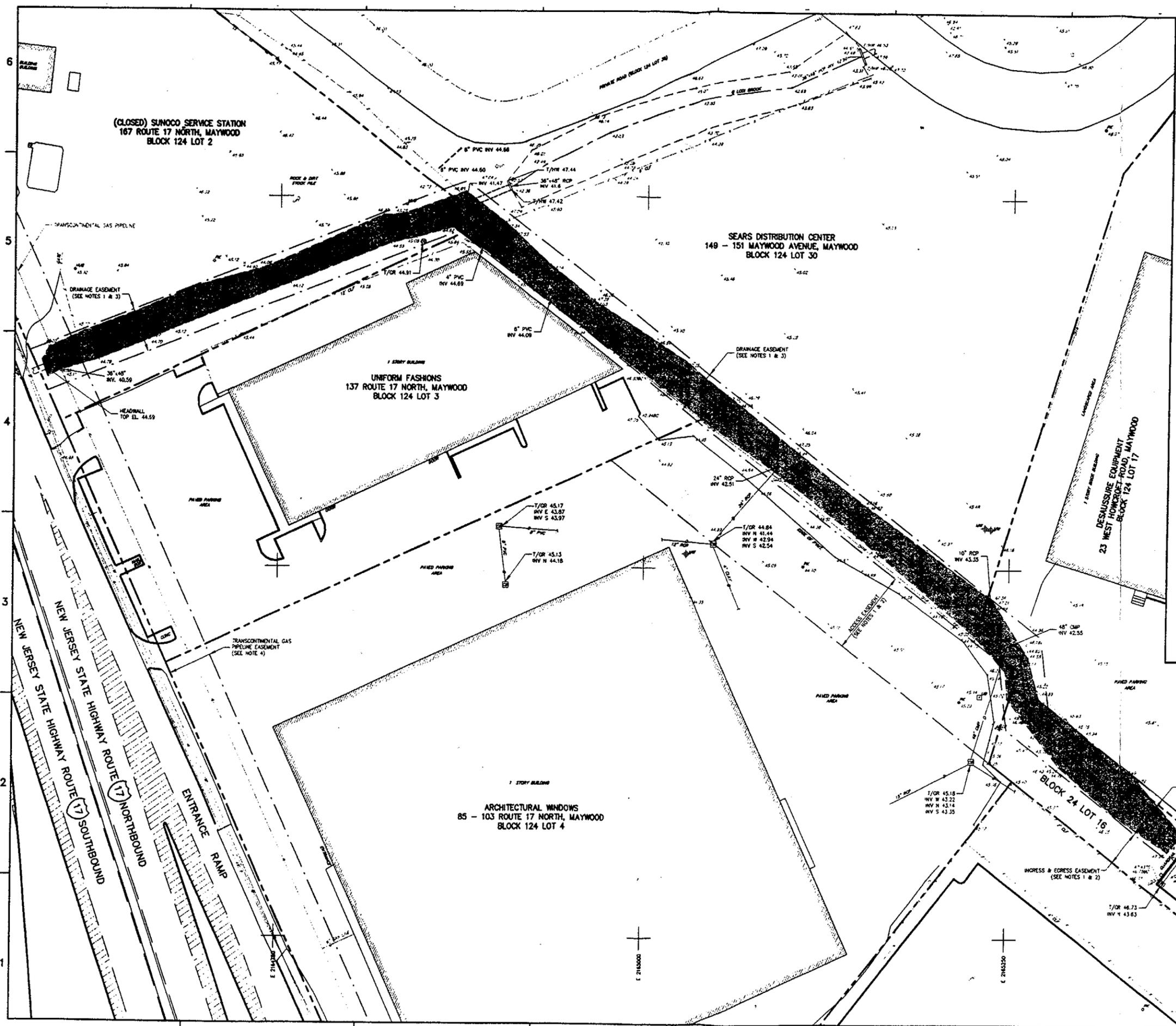
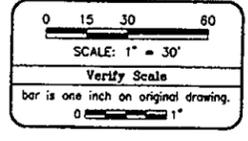
EXISTING SITE LAYOUT MAP

Contract Number: DACW41-99-10-0001  
Order Number: 08575.0250  
Drawing Number: TCRA-2

### LEGEND

- CONSERVATIVE AERIAL EXTENT OF PROPOSED REMOVAL ACTION (SEE NOTE 7)
- PROPERTY BOUNDARY
- APPROXIMATE EASEMENT LOCATION
- EXISTING SHALE AND LOAM BROOK SLOPE CONTOURS
- CENTERLINE OF SHALE/LOAM BROOK
- EXISTING POINT ELEVATION
- EXISTING CATCH BASIN
- EXISTING SLUMP
- EXISTING CLEAN-OUT
- EXISTING MONITORING WELL
- BOTTOM OF CURB ELEVATION
- CHAIN LINK FENCE
- CORRUGATED METAL PIPE
- INVERT ELEVATION
- INVERT ELEVATION - NORTH SIDE
- INVERT ELEVATION - SOUTH SIDE
- INVERT ELEVATION - EAST SIDE
- INVERT ELEVATION - WEST SIDE
- LIGHT POST
- OVERHEAD WIRE
- POLYVINYL CHLORIDE PIPE
- REINFORCED CONCRETE PIPE
- RIM ELEVATION
- TOP OF CURB ELEVATION
- TOP OF GRATE ELEVATION
- TOP OF HEADWALL ELEVATION
- UNKNOWN BOX ELEVATION
- UTILITY POLE
- SURVEY MONUMENT

- ### NOTES
- EASEMENT LOCATION IS APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE DEEDS.
  - EASEMENT FOR INGRESS AND EGRESS.
  - EASEMENT FOR DRAINAGE.
  - TRANSCHONTIMENTAL EASEMENT - BOOK 3134, PAGE 414.
  - NADOT SLOPE EASEMENTS - BOOK 1807, PAGE 10.
  - BOROUGH OF MAYWOOD 15' EASEMENT FOR TRUNK SEWER - BOOK 3703, PAGE 184, BOOK 3990, PAGE 502.
  - THIS IS A SUBSET OF THE ENTIRE AREA WITHIN WHICH CONTRACT WORK WILL OCCUR, SEE DRAWING NOS. 3 AND 4.
  - BLOCK 124 LOT 16 IS OWNED BY THE BOROUGH OF MAYWOOD.
  - THE HORIZONTAL DATUM IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM (NAD) 1927.
  - THE VERTICAL DATUM IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
  - THIS SURVEY SHOWS CONDITIONS AS OF OCTOBER 1999. THE DRAWING IS BASED ON AERIAL MAPPING PREPARED BY GEO CORP. AND GROUND SURVEY BY GARDEN STATE ENGINEERING SURVEYING & PLANNING.
  - THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO ACCURACY AND COMPLETENESS. CONTACT ALL APPROPRIATE UTILITY COMPANIES AND AGENCIES PRIOR TO ANY EXCAVATION.



**State of New Jersey  
Department of Environmental Protection  
Land Use Regulation Program Application Form (LURP #1)**

PLEASE PRINT OR TYPE THE FOLLOWING: (Complete all sections unless otherwise noted)  
NOTE: If you are applying for a CAFRA Permit by Rule, you need to complete items 1 thru 6 and the signature area on page 3 only.

1. Applicant Name U.S. Army Corps of Engineers  
 Contact Name Mr. Allen Roos Daytime Phone # 212-264-0120  
 Address U.S. Army Engineer District, FURAP Project Office, 26 Federal Plaza  
 City New York State New York Zip 10278-0090

2. Agent Name NA Firm \_\_\_\_\_  
 Address \_\_\_\_\_ Phone # \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

3. Project Location - Street Address Howcroft Road  
 Municipality Maywood County Bergen  
 Block(s) and Lot(s) Block 124, Lots 2,3,4,16,17,30  
 State Plane Coordinates N 750329 feet E 2165384 feet  
 Nearest Waterway Lodi Brook Watershed Saddle River

4. Total Fees not applicable Fees Paid not applicable Project Cost \$200,000 Check No. not applicable

5. Project Description: Proposed cleaning of drainage swale near Howcroft Avenue. The swale contains sediments composed of radium-226, thorium232 and uranium-238 on property formerly occupied by Maywood Chemical Works. The property is a recognized Superfund Site presently being remediated by the U.S. Army Corps of Engineers as part of FUSRAP. The project will entail the removal of approximately 700 cubic yards of sediments for transport to an authorized disposal site. Unless sediments are removed from the drainage swale and culvert, additional rainfall has the potential to cause the migration of, and continued release of hazardous substances or pollutants onto adjacent and nearby properties

<b>FOR OFFICIAL USE ONLY</b>	
File Number: _____	Permit Code: _____
Date Received: ____-____-____	Project Manager: _____
20th Day: ____-____-____	Project Engineer: _____
DEP Bulletin: ____-____-____	Date Entered: ____-____-____
ASU Date: ____-____-____	Amount Filled: _____

6. Application(s) for: (Please check all that apply)

Stream Encroachment:	Permit	_____	Waiver	<u>  X  </u>
CAFRA:	Individual Permit	_____	General Permit	_____
	Exemption Permit	_____	Permit by Rule	_____
Freshwater Wetlands:	Individual Permit	_____	General Permit	<u>  X  </u>
	Transition Area Waiver	_____	Letter of Interpretation	_____
	Exemption Request	_____	Open Water Fill Permit	_____
Waterfront Development:	Residential	_____	Commercial	_____
Water Quality Certificate		_____	Tidal Wetlands (1970)	_____
Federal Consistency Determination		_____	Jurisdictional Determination	_____
Permit Modification (specify)	_____			
Other (specify)	_____			

7. Indicate below if any of the following approvals, denials or certifications were received for the project site or are required for the proposed project:

- In Column A, indicate application status: (*P for* - pending, *A for* - approved, *D for* - denied, *T for* - to be applied for, or *O for* - other (explain other).
- In Column B, indicate application, permit, or docket number.

	A	B		A	B
CAFRA Permit	_____	_____	Stream Encroachment Waiver	<u>  T  </u>	<u>  This application  </u>
CAFRA Permit Modification	_____	_____	Stream Encroachment Waiver	_____	_____
CAFRA Exemption	_____	_____	Stream Encroachment Permit Modification	_____	_____
Waterfront Development Permit	_____	_____	Water Quality Certificate	_____	_____
Tidal Wetlands (1970) Permit	_____	_____	Tidelands (Riparian) Conveyance	_____	_____
Statewide General Freshwater Wetlands Permit	<u>  T  </u>	<u>  This application  </u>	Dam Construction or Repair Permit	_____	_____
Freshwater Wetlands Letter of Interpretation	_____	_____	Pinelands Certificate of Filing	_____	_____
Freshwater Wetlands Transition Waiver	_____	_____	D & R Canal Commission Certificate	_____	_____
Individual Freshwater Wetlands Permit	_____	_____	Federal Permits (Specify)	_____	_____
Freshwater Wetlands Exemption Pre-Application Conference	_____	_____	State Permits (Specify)	_____	_____

APPLICANT SIGNATURE

I certify under penalty of law that the information provided in this document is true and accurate. I am aware that there are significant civil and criminal penalties for submitting false or inaccurate information. (If corporate entity, print/type the name and title of person signing on behalf of the corporate entity.

\_\_\_\_\_  
Signature of Applicant/Owner

\_\_\_\_\_  
Signature of Applicant/Owner

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

**A. PROPERTY OWNER'S CERTIFICATION**

I hereby certify that the undersigned is the owner of the property upon which the proposed work is to be done. This endorsement is certification that the owner grants permission for the conduct of the proposed activity. In addition, I hereby give unconditional written consent to allow access to the site by representatives or agents of the Department for the purpose of conducting a site inspection or survey of the project site.

In addition, the undersigned property owner hereby certifies:

- 1. Whether any work is to be done within an easement - YES  X  NO \_\_\_\_\_
- 2. Whether any part of the entire project (eg., pipeline, roadway, cable, transmission line, structure, etc.) will be located within property belonging to the State of New Jersey - YES \_\_\_\_\_ NO  X

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Type or Print Name and Address of Owner  
if different from item 1 on Page 1*

\_\_\_\_\_  
Date

\*  
\_\_\_\_\_  
Signature of Property Owner

\* The U.S. Army Corps of Engineers has executed Right of Entry Agreements with the required property owners.

**B. APPLICANT'S AGENT**

I N/A the Applicant/Owner, authorize to act as my agent/representative in all matters pertaining to my application the following person:

Name \_\_\_\_\_

Occupation/Profession \_\_\_\_\_

\_\_\_\_\_  
*(Signature of Applicant/Owner)*

**AGENT'S CERTIFICATION**

Sworn before me  
this \_\_\_\_\_ day of  
\_\_\_\_\_ 19 \_\_\_\_\_

I agree to serve as agent for the above-mentioned applicant.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(Signature of Agent)

**C. STATEMENT OF PREPARER OF PLANS, SPECIFICATIONS, SURVEYOR'S OR ENGINEER'S REPORT**

I hereby certify that the plans, specifications and engineer's report, if any, applicable to this project comply with the current rules and regulations of the New Jersey Department of Environmental Protection with the exceptions as noted.

N/A

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Type: Name and Date

\_\_\_\_\_  
Position, Name of Firm



For District Use Only
Application Number
Disposition

## APPLICATION FOR SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION

The enclosed soil erosion and sediment control plan and supporting information are submitted for certification pursuant to the Soil Erosion and Sediment Control Act, Chapter 251, P.L. 1975 as amended (NJSA 4:24-39 et seq.). An application for certification of a soil erosion and sediment control plan shall include the items listed on the reverse side of this form.

Name of Project <b>Time Critical Removal Action (TCRA)</b>		Project Location: Municipality <b>Maywood, New Jersey</b>	
Project Street Address <b>Terminus Of West Howcroft Road</b>		Block <b>24</b>	Lot <b>16</b>
Project Owner(s) Name <b>U.S. Army Corps Of Engineers</b>		Phone <b>(212) 264-0120</b>	
Project Owner(s) Address <b>US Army Engineer District</b>		City <b>New York</b>	State Zip <b>NY 10278-0090</b>
Total Area of Project <b>1 Acre (approx)</b>	Total Area of Land to be Disturbed <b>N/A</b>	No. Dwelling or other Units <b>N/A</b>	Fee <b>\$ N/A</b>

Plans Prepared by\*

**U.S. Army Corps of Engineers**

Address <b>100 West Hunter Avenue, Maywood</b>	State <b>NJ</b>	Zip <b>07607</b>	Phone <b>(201) 226-6000</b>
---	--------------------	---------------------	--------------------------------

(Engineering related items of the Soil Erosion and Sediment Control Plan MUST be prepared by or under the direction of and be sealed by a Professional Engineer or Architect licensed in the State of New Jersey, in accordance with NJAC 13:27-6.1 et. seq.)

Responsible During Construction <b>Mr. Allen Roos</b>		Job Supervisor <b>Mr. Thomas Farrell</b>	
Address <b>26 Federal Plaza</b>		Address <b>Stone &amp; Webster, 100 W. Hunter, Maywood, NJ</b>	
State <b>NY</b>	Zip <b>10278-0090</b>	State <b>NJ</b>	Zip <b>07607</b>
Phone <b>(212) 264-0120</b>	Phone <b>(201) 226-6609</b>	Phone <b>(201) 226-6609</b>	Phone <b>(201) 226-6609</b>

The applicant hereby certifies that all soil erosion and sediment control measures are designed in accordance with current Standards for Soil Erosion and Sediment Control in New Jersey and will be installed in accordance with those Standards and the plan as approved by the Soil Conservation District and agrees as follows:

- 1. To notify the District in writing at least 48 hours in advance of any land disturbance activity. Failure to provide such notification may result in additional inspection fees.
- 2. To notify the District upon completion of the Project. (Note: No certificate of occupancy can be granted until a report of compliance is issued by the District.
- 3. To maintain a copy of the certified plan on the project site during construction.
- 4. To allow District agents to go upon project lands for inspection.
- 5. That any conveyance of this project or portion thereof prior to its completion will transfer full responsibility for compliance with the certified plan to any subsequent owners.
- 6. To comply with all terms and conditions of this application and certified plan including payment of all fees prescribed by the district fee schedule hereby incorporated by reference.

The applicant hereby acknowledges that structural measures contained in the Soil Erosion and Sediment Control Plan are reviewed for adequacy to reduce offsite soil erosion and sedimentation and not for adequacy of structural design. The applicant shall retain full responsibility for any damages which may result from any construction activity notwithstanding district certification of the subject soil erosion and sediment control plan. It is understood that approval of the plan submitted with this application shall be valid only for the duration of the initial project approval granted by the municipality. All municipal renewals of this project will require resubmission and approval by the district. In no case shall this approval extend beyond three and one half years at which time resubmission and certification by the district will be required.

<p>1. Applicant Certification</p> <p>Signature _____ Date _____</p> <p>Applicant Name (Print) _____</p> <p>Receipt of fee, plan and supporting documents is hereby acknowledged:</p> <p>Signature of District Official _____ Date _____</p>	<p>3. Plan determined complete:</p> <p>Signature of District Official _____ Date _____</p> <p>4. Plan certified, denied or other action as noted above. Special Remarks:</p> <p>Signature of District Official _____ Date _____</p>
---	---

\* If the project owner, written authorization of owner must be attached.

## **APPENDIX E**

### **Standard Operating Procedures**

- SW-MWD-301 – Sediment Sampling
- SW-MWD-302 – Surface Water Samples
- SW-MWD-313 – Drum Handling and Sampling
- SW-MWD-401 – Photoionization Detector (PID)
- SW-MWD-402 – Flame Ionization Detector (FID)
- SW-MWD-403 – Respirable Dust Meter
- SW-MWD-404 – Radiation Survey Meter
- SW-MWD-504 – Labeling, Packaging and Shipping Environmental Samples
- SW-MWD-506 – Decontamination
- SW-MWD-507 – Field Notebook Content and Control
- SW-MWD-508 – Procedure for Shipping Radiologically Contaminated Environmental Samples



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

<b>TITLE:</b>  Sediment Sampling	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> 1 of 9
	<b>DATE:</b> May 1999
<b>APPROVED:</b>  _____ Project Manager  _____ Project Engineer	

### 1.0 PURPOSE

This Standard Operating Procedure (SOP) - Sediment Sampling is to be employed when hand-collecting (without machines or power tools) sediment samples from swamps, ponds, lagoons, lakes, rivers and other water bodies with known or suspected environmental contamination at the FUSRAP Maywood Superfund Site.

This SOP describes the procedures for collecting representative environmental and/or geotechnical samples from sediment. The following sections describe various methods and equipment used to collect sediment samples. These samples can be used for sediment classification and analytical testing purposes.

### 2.0 SCOPE

This procedure presents the proper methods of collecting both discrete and composite sediment samples. Selection of site-specific sampling locations and specific sampling technique(s) is dependent on the objectives of the environmental assessment. Consult the task-specific Sampling and Analysis Plan (SAP) or other applicable work plan(s) for sediment sampling locations and techniques. This method can be used for most sediment types. Sediment samples can be collected from swamps, ponds, lagoons, lakes, rivers and other water bodies. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sampling team member. Various methods can be used to collect the sediment sample. Field changes to this SOP shall be discussed with the Project Superintendent prior to implementation and shall be documented in project field log books. All changes shall be made in accordance with the Maywood Contractor Quality Control Plan.

### 3.0 REFERENCES

<b>TITLE:</b>  <b>Sediment Sampling</b>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 2 of 9

U.S. Environmental Protection Agency, Characterization of Hazardous Waste Sites - A Methods Manual, Volume II: Available Sampling Methods, EPA/600/X-83/018, March 1983.

Decontamination SOP

Cuttings and Fluids Management SOP

Surface Water Sampling SOP

Labeling, Packaging, and Shipping Environmental Samples SOP

#### **4.0 DEFINTIONS**

None.

#### **5.0 RESPONSIBILITIES**

##### **5.1 PROJECT MANAGER**

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified for the needed work.

##### **5.2 PROJECT ENGINEER**

Translates client's requirements into technical direction of project. Reviews and approves technical progress, and ensures that the Project Superintendent has been properly briefed and is prepared for sediment sampling task.

##### **5.3 SITE SAFETY AND HEALTH OFFICER**

All field activities must be carried out in accordance with the SSHP. The Site Safety and Health Officer (who may also serve as a sediment sampler) is responsible for ensuring that all site workers (Stone & Webster and subcontractors) have read, signed and are familiar with the requirements of the SSHP and that the requirements of the SSHP are met during site activities.

##### **5.4 PROJECT SUPERINTENDENT**

The Project Superintendent is the individual designated by the Project Manager to supervise investigative activities by Stone & Webster and related subcontracting personnel at a given site for the designated tasks. The Project Superintendent is responsible for ensuring that the field personnel have been briefed in conducting the method of sediment sampling chosen in accordance with the project requirements, this SOP and related SOPs. This individual assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin and that all necessary personnel are mobilized on time. He/she maintains a daily log of activities each work day.

<b>TITLE:</b>  <p style="text-align: center;"><b>Sediment Sampling</b></p>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 3 of 9

The Project Superintendent coordinates and consults with the Project Manager on decisions relative to unexpected occurrences during sediment sampling and deviation from this SOP.

## 5.5 SITE PERSONNEL

Site personnel assigned to perform the sediment sampling activities will be trained in the proper techniques for conducting the work. All employees who are engaging in sediment sampling activities are required to read and sign the Site Safety and Health Plan (SSHP) and to follow the procedures in this SOP, unless superseded by other project-specific requirements. All sediment sampling activities, including deviations to this SOP, will be recorded in field logbooks during on-site activities.

## 6.0 PROCEDURES

### 6.1 GENERAL EQUIPMENT & MATERIAL REQUIREMENTS FOR SEDIMENT SAMPLING

The following is a list of equipment & material which is commonly used on all sediment sampling projects. Refer also to related SOP equipment & material requirements to ensure completeness.

- Field Sampling Plan (FSP) (in Chemical Data Quality Management Plan (CDQMP) and task-specific SAPs)
- SSHP. **To be read and signed by all site personnel prior to site activities**
- Personal Protective Equipment
- Field logbook(s)
- Volatile organic compound vapor meter (photoionization detector (PID) and flame ionization detector (FID))
- Decontamination supplies - **See FSP and Decontamination SOP**
- Indelible markers
- Weighted tape measure
- Stainless steel or plastic trowel or shovel
- Sampling Equipment - Dredge; Shovel; Fencepost digger; Scoop; Corer; or PVC Pipe Sampler
- Rope/Line for sampling equipment
- Global Positioning System (GPS) - optional
- Surveyors stakes
- Hammer for pounding stakes
- Flagging Tape
- Camera & Film
- Stainless steel mixing bowls
- Sample bottles and labels

<b>TITLE:</b>  <p style="text-align: center;"><b>Sediment Sampling</b></p>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 4 of 9

- Chain-of-Custody forms- See **Labeling, Packaging, and Shipping Environmental Samples SOP**
- Chain-of-Custody tape
- Sample Coolers Bubble wrap or other sample packing material
- Ice or pre-cooled "cold" packs - for sample preservation
- Shipping forms (not needed if hand delivered to lab or courier pickup arranged)
- Shipping tape (transparent)
- Duct tape
- Paper towels

Avoid the use of devices plated with chrome or other materials if collecting soil samples for metals analysis. Plating is particularly common with garden implements such as potting trowels.

## 6.2 GENERAL SEDIMENT SAMPLING PROCEDURES

### 6.2.1 Pre-Sampling Activities

1. The task-specific SAP should be consulted to determine the sampling methods to be employed and the sampling and monitoring equipment necessary for field activities. Main considerations in determining the method of sampling the sediment should be: depth of water, means of access (boat, dock, from shore, wading into water, etc.), and type of water body (e.g., still water vs. rapidly flowing river).
2. In accordance with the SSHP, a general site survey should be performed prior to site entry. If a boat is to be used for sampling, it is important to note access points - docks, boat ramps, etc.
3. All sampling equipment should be decontaminated prior to each sampling episode. Decontamination procedures are detailed in the Decontamination SOP.
4. As appropriate, all sampling locations should be utility cleared and marked in some manner with stakes and/or flagging. Stakes/flagging are most useful for shallow samples (small stream, swamp/wetlands). Photographs should be taken of shore reference points if using stakes is not practical, e.g., sampling in middle of a river or lake. A detailed sketch of the sample location and location on a map/drawing should also be noted. If specified in the FSP or task-specific SAP, a GPS shall be used to locate unmarkable sampling points.
5. Measure the depth of the water from which the sample will be taken.

6. Any in-situ measurements, e.g. water pH, dissolved oxygen content, etc., should be taken prior to sampling activities.
7. If surface water samples will be taken at the same location, the surface water sampling should be performed prior to sediment sampling, because the sediment sampling activities will suspend fine sediments into the water column. Refer to the Surface Water Sampling SOP.

### 6.3 SEDIMENT SAMPLING

Appropriate field procedures are as follows:

1. If applicable, screen the area to be sampled using a organic vapor analyzer and record readings in the field log. The FID or PID screen is used as a field safety procedure, as well as for selecting potentially contaminated soil samples
2. The readings should be compared to action levels presented in the SSHP. The operator of the FID or PID must be experienced in its use and aware of the effect of factors such as temperature, humidity, or methane affecting the instrument readings.
3. Retrieve a sediment sample using one of the methods described in Section 6.5.
4. If analyzing the sample for volatile organic compounds, using the EnCore sampler tool, collect the appropriate sample volume directly from the sampling device in the manner discussed in Attachment A.
5. For the remaining analyses, homogenize the sediment collected and obtain a discrete sample using a stainless steel lab spoon or its equivalent. Place the sample into the appropriate numbers of sterile wide-mouth glass soil sample jars with screw on caps. The appropriate order for filling the bottles is:
  - a. Semivolatile organic compounds (SVOC)
  - b. Total Recoverable Petroleum Hydrocarbons (TRPH)
  - c. PCBs/pesticides
  - d. Metals
  - e. Radionuclides
6. Check that a Teflon liner is present in the cap of all analytical sample jars. Secure the caps tightly. Although chemical preservation of solids is generally not required, the samples should be refrigerated (normally in iced coolers to approach approximately 4°C) and analyzed within specified

<b>TITLE:</b>  <b>Sediment Sampling</b>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 6 of 9

holding times. Refer to the Labeling, Packaging, -and Shipping Environmental Samples SOP for specific requirements.

7. Label the sample bottle with the appropriate sample tag. Complete all chain-of-custody documents. Refer to the Labeling, Packaging and Shipping Environmental Samples SOP for specific requirements.
8. Record sampling event in the field log book (and on a sample log, if dictated by the task-specific SAP).
9. Decontaminate equipment after use and between sample locations. Also, decontaminate sample containers and/or isolate them (such as sealing in Ziploc bags). Refer to the Decontamination SOP for specific requirements.

#### 6.4 PREPARATION OF COMPOSITE SAMPLES

Sediment samples may be either discrete or composite. A discrete sample represents a single location; it must be used for all volatile organic analyses. A composite sample represents a mixture of sediment from more than one discrete location. If a composite sample is to be obtained, it can be mixed in a shallow high density polyethylene pan, lined with aluminum foil, or in a stainless steel pan. Alternatively, compositing can be done on plastic sheets. However, compositing of samples suspected to be contaminated with organics should be done in a stainless steel bowl due to the potential for introduction of organic contaminants from the plastic sheeting. Stainless steel sieves may be used to remove larger rock fragments and organic matter. Compositing procedures are not appropriate for samples obtained for analysis for volatile organic compounds because the agitation of the sample results in a loss of volatiles from the sample.

The procedure outlined in Attachment B shall be followed for sediment compositing.

#### 6.5 METHOD SPECIFIC SEDIMENT SAMPLING PROCEDURES

##### 6.5.1 Sediment Sampling in Shallow Water Bodies (Wetlands, Brooks, Small Streams)

In these settings, the most appropriate method for obtaining sediment samples is likely wading in and obtaining a sample using a shovel, PVC pipe sampler, or fence pole digger. Proper safety equipment should be worn at all times, including a life jacket, a secured line to the shore, and a "buddy" who remains on the shore. Equipment should be tied off to shore if possible, to ease retrieval if anything is dropped.

Samples should be collected by driving the sampling equipment (shovel, fencepost digger, etc.) into the sediment. The equipment should be brought

<b>TITLE:</b>  <b>Sediment Sampling</b>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 7 of 9

to the surface slowly, to minimize loss of sample into the water column. The sample should be placed into a receptacle from which analytical samples will be taken. This receptacle will most likely be on shore. Bottling of samples and decontamination of equipment should take place on shore.

Samples shall be collected downstream to upstream, so that any suspended particles will be transported away from the next sample point.

For surveying purposes, if possible, stakes or markers should be placed either at the sample location itself or on each bank or both on the same bank so that the sample point is on the line between the two stakes. The precise location of the sample point can then be specified by measuring the distance from one of the stakes.

**6.5.2 Sediment Sampling in Deeper Water Bodies (Lakes, Rivers)**

In these settings, the most appropriate method for obtaining sediment samples will be from a dock or bridge, if available, or more likely, a boat. If the water is shallow enough, (less than 3 feet deep), the same methods as specified in Section 6.5.1 may be used. For water depths greater than approximately 3 feet deep, a Ponar or Ekman dredge should be used to obtain the sediment sample. Proper safety equipment should be worn at all times, including a life jacket. Equipment should be tied off to the boat if possible, to ease retrieval if anything is dropped.

The boat should be properly anchored before sampling activities commence. Bow and stern anchors may be required to properly position the boat.

Samples should be collected by tying the sampler to a dedicated rope and dropping the sampling equipment over the side of the boat, through the water and into the sediment. Depending on the equipment being used (e.g. an Ekman dredge), a weight may need to be sent down the line to close the sampler. The rope should be marked at the water surface before withdrawing the sampler. The depth of the sample should then be determined by measuring the length of rope deployed. The equipment should be brought to the surface slowly, to minimize loss of sample into the water column. The sample should be placed into a receptacle from which analytical samples will be taken. In general, Ekman dredges are lighter than Ponar dredges. This makes the Ekman easier to handle, but also less stable in high flow areas. The Ponar dredge is heavier, closes automatically, and typically retrieves more sample.

Samples shall be collected downstream to upstream, so that any suspended particles will be transported away from the next sample point.

<b>TITLE:</b>  <p style="text-align: center;"><b>Sediment Sampling</b></p>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 8 of 9

Consideration will be given to modifying this procedure if sediment samples must be collected for volatile organic compound analysis.

If multiple sediment samples are being collected from a lake or pond (i.e. a relatively still body of water), sample collection should start with deeper points and move to shallower points.

It is also important to size the boat appropriately. If the work is to be in a fairly small area, it may be best to locate as many operations as possible on shore. If all sampling and decontamination activities must be contained within the boat, care should be taken to minimize the amount of equipment required.

If it is not possible to mark the sample location, photographic evidence of the location (shots of landmarks on shore) and precise locations on maps should be obtained.

## 6.6 GLOSSARY OF TERMS

Composite Sample - represents a mixture of sediment from more than one discrete location.

Corer - A stainless steel implement typically used for soil samples. Still appropriate for shallow samples or samples in swampy areas.

Discrete Sample - A discrete sample represents a single location. It must be used when collecting sediment samples for volatile organic analyses.

Dredge - Typically a "Ponar" or an "Ekman" dredge. An Ekman dredge is lighter and uses a weighted "slave" which is sent down the rope to trigger the trap to close. The Ponar dredge is heavier, and closes on contact.

FSP Field Sampling Plan

Fencepost digger - Two handled shovel tool which is driven straight down, and then clamped shut by pushing the handles apart.

GPS Global Positioning System

SAP Sampling and Analysis Plan

Shovel - Long or short handle type. Used for obtaining sediment samples directly in shallow areas.

SOP Standard Operating Procedure

<b>TITLE:</b>  <b>Sediment Sampling</b>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 9 of 9

**SSHP** Site Safety and Health Plan -

Trowel - Basic garden variety, which resembles a small shovel. Constructed of steel or polypropylene (plastic). The blade of a trowel is generally flat and 5 to 6 inches in length. A scoop (blade has curved edges versus flat) may be substituted if necessary. Both can be purchased with volume calibrations.

Hollow-Stem Hand Auger - a short spiral-bladed metal rod (auger) attached to a handle. Clockwise rotation of the T handle initiates the cutting process. Most of the loose sediment is discharged upwards as the auger moves downwards. However, if the sediment is cohesive, some of it will stick to the auger flight providing a collectable sample at a measurable depth.

Scoop - A jar or other container attached to the end of a pole. Hand made.

**7.0** **ATTACHMENTS**

Attachment A – EnCore Extrusion and Sampling Procedures

Attachment B - Sediment Compositing Procedure

<b>TITLE:</b>  <b>Sediment Sampling</b>	<b>NO.:</b> SW-MWD-301-0
	<b>PAGE:</b> Page 1 of 1

## **ATTACHMENT B**

### **SEDIMENT COMPOSITING PROCEDURE**

The following procedure will be used for compositing grab samples from sediment collected.

1. Empty the sediment container(s) into a stainless steel mixing bowl.
2. Inspect the material for large stones and other objects, which are not representative of the sample matrix, and remove them from the bowl.
3. Homogenize the remaining sample material by breaking up any large clumps and thoroughly mixing with stainless steel spatula.
4. Fill the sample container(s) using a spatula.



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE:</b> 1 of 8
	<b>DATE:</b> May 1999
<b>APPROVED:</b>  _____ Project Manager  _____ Project Engineer	

### 1.0 PURPOSE

This Standard Operating Procedure (SOP) - Surface Water Sampling is to be employed when collecting surface water samples from locations with known or suspected environmental contamination at the FUSRAP Maywood Superfund Site.

This SOP describes the procedures for collecting representative environmental samples from surface water. Surface water describes the water above the bottom of a body of water. The samples are typically taken 3 feet above the bottom. Where possible, surface water samples shall not be taken from the surface of a body of water. The following sections describe various methods and equipment used to collect surface water samples. These types of samples can be used for biological and analytical testing purposes.

### 2.0 SCOPE

This procedure presents the proper methods of collecting surface water samples. Selection of site-specific sampling locations and specific sampling technique(s) is dependent on the objectives of the environmental assessment. Consult the task-specific Sampling and Analysis Plan (SAP) or other applicable work plan(s) for sampling locations and techniques. Field changes to this SOP shall be discussed with the Project Superintendent prior to implementation and shall be documented in project field log books. All changes shall be made in accordance with the Maywood Contractor Quality Control Plan.

### 3.0 REFERENCES

U.S. Environmental Protection Agency, Characterization of Hazardous Waste Sites - A Methods Manual, Volume II: Available Sampling Methods, EPA/600/X-83/018, March 1983.

<b>TITLE:</b>  <p style="text-align: center;"><b>Surface Water Sampling</b></p>	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 2 of 8

Cuttings and Fluids Management SOP  
Decontamination SOP  
Labeling, Packaging and Shipping Environmental Samples SOP

**4.0 DEFINITIONS**

None.

**5.0 RESPONSIBILITIES**

**5.1 PROJECT MANAGER**

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified for the needed work.

**5.2 PROJECT ENGINEER**

Translates client's requirements into technical direction of project. Reviews and approves technical progress, ensures that the Project Superintendent has been properly briefed and is prepared for surface water sampling task.

**5.3 SITE SAFETY AND HEALTH OFFICER**

All field activities must be carried out in accordance with the SSHP. The Site Safety and Health Officer (who may also serve as a surface water sampler) is responsible for ensuring that all site workers (Stone & Webster and subcontractors) have read, signed and are familiar with the requirements of the SSHP and that the requirements of the SSHP are met during site activities.

**5.4 PROJECT SUPERINTENDENT**

The Project Superintendent is the individual designated by the Project Manager to supervise investigative activities by Stone & Webster and related subcontracting personnel at a given site for the designated tasks. The Project Superintendent is responsible for ensuring that the field personnel have been briefed in conducting the method of surface water sampling chosen in accordance with the project requirements, this SOP and related SOPs. The Project Superintendent assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin and that all necessary personnel are mobilized on time. This individual also maintains a daily log of activities each work day.

The Project Superintendent coordinates and consults with the Project Manager on decisions relative to unexpected occurrences during surface water sampling and deviation from this SOP.

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 3 of 8

## 5.5 SITE PERSONNEL

Site personnel assigned to perform the surface water sampling activities will be trained in the proper techniques for conducting the work. All employees who are engaging in surface water sampling activities are required to read and sign the Site Safety and Health Plan (SSHP) and to follow the procedures in this SOP, unless superseded by other project-specific requirements. All surface water sampling activities, including deviations to this SOP, will be recorded in field logbooks during on-site activities.

## 6.0 PROCEDURE

### 6.1 GENERAL EQUIPMENT & MATERIAL REQUIREMENTS FOR SURFACE WATER SAMPLING

The following is a list of equipment & material which is commonly used on all surface water sampling projects. Refer also to related SOP equipment & material requirements to ensure completeness.

- Field Sampling Plan (FSP) (in Chemical Data Quality Management Plan) and task-specific SAPs
- SSHP. To be read and signed by all site personnel prior to site activities.
- Personal Protective Equipment
- Field logbook(s)
- Decontamination supplies - See FSP and Decontamination SOP
- Indelible markers
- Water level measure
- Sampling device such as a bailer, bucket, or surface water sampler
- Stakes/flagging (for marking on shore)
- Hammer - for pounding stakes
- 200 foot-length measuring tape
- If required, a hand held Global Positioning System (GPS) instrument
- Sample bottles (pre-preserved) and labels
- Chain-of-Custody forms - See Labeling, Packaging and Shipping Environmental Samples SOP
- Chain-of-Custody tape
- Sample Coolers
- Bubble wrap or other sample packing material
- Ice or pre-cooled "cold" packs - for sample preservation
- Shipping forms (not needed if hand delivered to lab or courier pickup arranged)
- Shipping tape (transparent)
- Duct tape
- Paper towels

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 4 of 8

## 6.2 SURFACE WATER PRE-SAMPLING ACTIVITIES

1. The task-specific SAP should be consulted to determine the sampling methods to be employed and the sampling and monitoring equipment necessary for field activities. The main considerations in determining the method of sampling the surface water should be: depth of water, means of access (boat, dock, from shore, wading into water, etc.), and type of water body (e.g., still water vs. rapidly flowing river).
2. In accordance with the SSHP, a general site survey should be performed prior to site entry. If a boat is to be used for sampling, it is important to note access points - docks, boat ramps, etc.
3. All sampling equipment should be decontaminated prior to each sampling episode. Decontamination procedures are detailed in the Decontamination SOP.
4. As appropriate, all sampling locations should be marked in some manner with stakes and/or flagging. Stakes/flagging are useful in some settings (small stream, swamp/wetlands). Photographs should be taken of shore reference points if using stakes is not practical, e.g., sampling in middle of a river or lake. A detailed sketch of the sample location and location on a map/drawing should also be noted. If available, a GPS should be used to locate unmarkable sampling points.
5. Measure the depth of the water from which the sample will be taken.
6. Any in-situ measurements, e.g. water pH, dissolved oxygen content, etc., should be taken prior to sampling activities.
7. If sediment samples will be taken at the same location, the surface water sampling should be performed prior to sediment sampling, because the sediment sampling activities will suspend fine sediments into the water column

## 6.3 SURFACE WATER SAMPLING

Appropriate field procedures are as follows:

1. Label the sample bottle with the appropriate sample tag. Complete all chain-of-custody documents. Refer to the Labeling, Packaging and Shipping Environmental Samples SOP for specific requirements.
2. Collect sample by the appropriate method as described in Section 6.4 from an undisturbed area. Allow time for water to clear or sediment to settle if you have just waded into an area or dropped anchor.

TITLE:  <b>Surface Water Sampling</b>	NO.: SW-MWD-302-0
	PAGE 5 of 8

3. Surface water samples shall be collected in the following order unless specifically superseded by the task-specific SAP. If a particular task does not require the collection of a particular analyte on the following list, proceed down to the next sample on the list that you are specified to collect.
  - a. Volatile organic compounds (VOC)
  - b. Semivolatile organic compounds (SVOC)
  - c. Total Recoverable Petroleum Hydrocarbons (TRPH)
  - d. PCBs/pesticides
  - e. Metals
  - f. Radionuclides

4. Add preservative, as required by analytical methods, to samples immediately after they are collected if the sample containers are not pre-preserved. Check analytical methods (e.g., EPA SW-846) for additional information on preservation. Check pH for all samples requiring pH adjustment to assure proper pH value. For VOC samples, this will require that a test sample be collected to determine the amount of preservative that needs to be added to the sample containers prior to sampling. Label each sample as collected. Samples requiring cooling (volatile organics, etc) will be placed into a cooler with ice or refrigerant for delivery to the laboratory. Metal samples will not be filtered.

See Attachment A for the container and preservative requirements for water samples anticipated to be collected. Additional special sample collection considerations are as follows:

#### VOCs

- a. Fill the sample vial slowly from sampler, minimizing air entrainment, until vial overflows (a meniscus should be present on the top of the sample bottle). Cap vial.
- b. Invert bottle and tap to check for air bubbles. If bubbles are present, open bottle, add additional water, and repeat this process until no air bubbles are present. If bubbles cannot be removed, the sampler should sample again using a different vial.

#### ELEVATED RADIONUCLIDES

In surface water locations with elevated radionuclides, dedicated sampling equipment may be appropriate.

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 6 of 8

5. Record sampling event in the field log book and on a sample log, if dictated by the task-specific SAP.
6. Decontaminate equipment after use and between sample locations. Also, decontaminate sample containers and/or isolate them (such as sealing in Ziploc bags). Refer to the Decontamination SOP for specific requirements.

#### 6.4 METHOD SPECIFIC SURFACE WATER SAMPLING PROCEDURES

##### 6.4.1 Surface Water Sampling in Shallow Water Bodies (Wetlands, Brooks, Small Streams)

In these settings, the most appropriate method for obtaining surface water samples is likely wading in and obtaining a sample using a bailer, bucket, or certified clean sample bottle. Proper safety equipment should be worn at all times, including a life jacket, a secured line to the shore, and a "buddy" who remains on the shore. Equipment should be tied off to shore if possible, to ease retrieval if anything is dropped.

Samples should be collected by measuring the depth of the water, determining how deep a sample is appropriate, and collecting the sample. Sample bottles should be filled directly from the sampler. This will likely necessitate frequent trips to shore. Decontamination of equipment should take place on shore.

Samples shall be collected downstream to upstream, so that any suspended particles from activities in the water body will be transported away from the next sample point.

For surveying purposes, if possible, stakes or markers should be placed either at the sample location itself or on each bank or both on the same bank so that the sample point is on the line between the two stakes. The precise location of the sample point can then be specified by measuring the distance from one of the stakes.

##### 6.4.2 Surface Water Sampling in Deeper Water Bodies (Lakes, Rivers)

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 7 of 8

In these settings, the most appropriate method for obtaining surface water samples will be from a dock or bridge, if available, or more likely, a boat. If the water is shallow enough, (less than 3 feet deep), the same methods as specified in Section 6.4.1 may be used. For water depths greater than approximately 3 feet deep, a surface water sampler should be used to obtain the surface water sample. Surface water samplers are open at both ends, with end caps held open by a strong elastic. A remote weight is sent down the line to depress the catch which is holding the elastic. This closes both ends of the sampler. The sample is collected from a spout located on the sampler.

Proper safety equipment should be worn at all times, including a life jacket. Equipment should be tied off to the boat if possible, to ease retrieval if anything is dropped.

The boat should be properly anchored before sampling activities commence. Bow and stern anchors may be required to properly position the boat.

Samples should be collected by tying the sampler to a dedicated rope and dropping the sampling equipment over the side of the boat. Depending on the equipment being used, a weight may need to be sent down the line to close the sampler. The rope should be marked at the water surface before withdrawing the sampler. The depth of the sample should then be determined by measuring the length of rope deployed.

Samples shall be collected downstream to upstream, so that any suspended particles will be transported away from the next sample point. Sediment will be disturbed by the anchors and other activities.

If multiple surface water samples are being collected from a lake or pond (i.e. a relatively still body of water), sample collection should start with deeper points and move to shallower points.

It is also important to size the boat appropriately. If the work is to be in a fairly small area, it may be best to locate as many operations as possible on shore. If all sampling and decontamination activities must be contained within the boat, care should be taken to minimize the amount of equipment required.

If it is not possible to mark the sample location, photographic evidence of the location (shots of landmarks on shore), GPS coordinates, and precise locations on maps should be obtained.

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 8 of 8

6.5 GLOSSARY OF TERMS

FSP Field Sampling Plan

GPS Global Positioning System

SAP Sampling and Analysis Plan

SOP Standard Operating Procedure

SSHP Site Safety and Health Plan

7.0 ATTACHMENTS

Attachment A - Container Requirements for Water Samples

<b>TITLE:</b>  Surface Water Sampling	<b>NO.:</b> SW-MWD-302-0
	<b>PAGE</b> 1 of 1

**ATTACHMENT A  
CONTAINER REQUIREMENTS FOR WATER SAMPLES**

<b>Analyte Group</b>	<b>Container</b>	<b>Preservative</b>
Volatile Organic Compounds	3 - 40 ml glass vials with Teflon7-lined septum (no headspace)	HCL to pH <2 Cool, 4°C
Semivolatile Organic Compounds	2 - 1L amber glass bottle with Teflon7-lined lid	Cool, 4°C
Pesticides/PCBs	2 - 1L amber glass bottle with Teflon7-lined lid	Cool, 4°C
Metals	1 - 1000 ml plastic or glass bottle	HNO <sub>3</sub> to pH <2 Cool, 4°C
TRPH	2 - 1000 ml glass bottle	HCl to pH <2 Cool, 4°C
Radiolonuclides	1 - 1000 ml plastic or glass bottle per readionuclide test, typ.	None



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

**TITLE:**

**Drum Handling and Sampling**

**NO.:**

**SW-MWD-313-0**

**PAGE**

**1 of 23**

**DATE:**

**May 1999**

**APPROVED:**

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Project Engineer

### **1.0 PURPOSE**

This Standard Operating Procedure (SOP) presents the method for handling drums and taking drum samples at the FUSRAP Maywood Superfund Site. This procedure provides the methods for identifying and quantifying hazardous substances so that the appropriate level of protection may be determined. The purpose of this procedure is to ensure that drum handling and sampling is conducted using well-developed and consistent techniques and methods.

### **2.0 SCOPE**

This procedure is applicable to the handling and sampling of closed containers (120 gallon or less) on the Maywood project sites. The contents of these containers may or may not be known depending on the situation. This SOP can be used as applicable in both situations. Bulk tanks such as railroad tank cars, large above- and below ground tanks (with a capacity of more than 120 gallons), and tank trailers are not addressed in this procedure.

### **3.0 REFERENCES**

Standard Operating Procedure for Drum Sampling by Ecology and Environment, Inc. January, 1990.

Corporate Safety, Health, and Environment Manual by Stone & Webster  
Labeling, Packaging, and Shipping Environmental Samples SOP  
Decontamination SOP

#### 4.0 DEFINITIONS

**Air Reactive Wastes** - Some chemicals, such as white phosphorus and some of the metallic hydrides, react with the oxygen in the air and combust or produce considerable amounts of heat and may possibly release toxic or flammable vapors.

**Compatibility Testing** - A series of tests performed on individual drum samples where the object of the testing is to find those drums that have similar and potentially compatible contents. After further testing the contents of these drums would be mixed together to form a larger single waste stream for disposal purposes.

**Container** - Defined as any drum, bottle, can, bag, etc., with a capacity of 120 gallons (450 liters) or less.

**Dosimeter** - A portable, transistorized survey meter that can be used for radiation monitoring purposes and/or contamination measurements.

**Exotic Metal Drums** - (i.e. aluminum, nickel, stainless steel, or other unusual metals). Very expensive drums that usually contain an extremely dangerous material.

**Glass Thief** - A glass tube 4 feet long and 3/4 inches in diameter, used for taking samples from drums. The tube is usually broken up and disposed of in the drum following sampling.

**LEL** - (Lower Explosive Limit) An air monitoring device can test the surrounding air for sufficient oxygen content for life support and/or the presence of combustible gases or vapors which may pose a potential flammability hazard. The Lower Explosive Limit is defined as the minimum concentration of a particular combustible gas in the air that can be ignited. The **Upper Explosive Limit (UEL)** is defined as the maximum concentration that can be ignited.

**Laboratory Packs** - Such drums are commonly used for disposal of expired chemicals and process samples from laboratories, hospitals and similar institutions. Bottles in the laboratory pack may contain incompatible materials and may not be packed in absorbent material. They may contain radioisotopes, shock sensitive, highly volatile, highly corrosive, or very toxic exotic chemicals. Laboratory packs have been the primary ignition sources for fires at some hazardous wastes sites.

**Monitox** - A portable warning device used for detecting specific toxic gases found in the surrounding air (i.e. H<sub>2</sub>S, HCl, Cl, HCN and COCl<sub>2</sub>).

**PID** - (photoionization detector) A portable air-monitoring instrument used to detect organic vapors. The PID does not distinguish between different types of vapors or tell if more than one vapor is present.

**Polyethylene or PVC-lined drums** - Often contain strong acids or bases. If the lining is punctured, the substance usually corrodes the steel, resulting in a significant leak or spill.

**Shock Sensitives** - A chemical which may undergo a very rapid chemical transformation, with the simultaneous production of large quantities of heat and gases, if introduced to shock (i.e. friction).

**Single-Walled Drums Used as a Pressure Vessel** - These drums have fittings for both product filling and placement of an inert gas, such as nitrogen. Such drums may contain reactive, flammable, or explosive substances.

**Vapor Control** - The use of an LEL, PID, Monitox, or any other air monitoring device to assure the quality of air meets all safety requirements.

**Waste Blending Test** - A waste blending test is done on sample materials from drums that were found to be similar and potentially compatible with each other. The sample materials are proportionally and sequentially blended with each other and observations and measurements are made during and after the blending process to determine if any potentially hazardous reactions are occurring (i.e. temperature rise, outgassing, or other reactions).

**Water Reactive Wastes** - Some chemicals will react violently with water on contact or through exposure to moisture in the air while others may give off toxic or flammable gasses. Sodium or potassium metal reacts violently with water while calcium carbide reacts to produce a flammable gas (acetylene).

## 5.0 RESPONSIBILITIES

### 5.1 Project Manager

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified to perform wipe sampling.

## **5.2 Project Engineer**

Translates client's requirements into technical direction of project. Reviews and approves technical progress, ensures that the Project Superintendent has been properly briefed and is prepared for the wipe sampling task.

## **5.3 Site Safety and Health Officer**

All field activities must be carried out in accordance with a site-specific SSHP. The Site Safety and Health Officer (who may also serve as a wipe sampler) is responsible for ensuring that all site workers (Stone & Webster and subcontractors) have read, signed and are familiar with the requirements of the SSHP and that the requirements of the SSHP are met during site activities.

## **5.4 Project Superintendent**

The Project Superintendent is the individual designated by the Project Manager to supervise investigative activities by Stone & Webster and related subcontracting personnel at a given site for the designated tasks. The Project Superintendent is responsible for ensuring that the field personnel have been briefed on conducting drum handling and sampling in accordance with the project requirements, this SOP, and related SOPs. He or she assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin, and that all necessary personnel are mobilized on time. The Project Superintendent maintains a daily log of activities each work day.

The Project Superintendent coordinates and consults with the Project Manager on decisions relative to unexpected encounters during field investigations and deviations from this SOP.

## **5.5 Site Personnel**

Site personnel assigned to perform the drum handling and sampling activities will be trained in the proper techniques for conducting the work. They are required to read and sign the site-specific SSHP and to follow the procedures in this SOP, unless superseded by other project-specific requirements. All wipe sampling activities, including deviations to this SOP, will be recorded in field logbooks during on-site activities.

## 6.0 PROCEDURE

### 6.1 Introduction

The guidance presented is based on field experience in working with containers on uncontrolled hazardous substance sites and on information contained in United State Environmental Protection Agency (USEPA) and other government agency publications. In many cases strict rules cannot be followed, and professional judgment is required because uncontrolled variables are involved. For example, there is always some uncertainty in the identity of a container's contents. Labels cannot be absolutely trusted. Only educated guesses can be made after a thorough review of all available background data, such as potential sources of the wastes.

During many drum projects, several phases will be in progress simultaneously. Air monitoring, dust control, and organic vapor control operations should be in progress throughout the course of the project. The Maywood Site Safety and Health Plan addresses air monitoring procedures to be utilized. Strict adherence to safety precautions will occur during drum handling, opening and sampling. Site Safety and Health Plan procedures and requirements will be adhered to during field activities on-site.

### 6.2 Drum Handling

In addition to the following procedures, drum handling and sampling activities will be performed in accordance with the Drum and Container Handling Procedure (SHE 9-2) in Stone & Webster's Corporate Corporate Safety, Health, and Environment Manual.

The handling, movement, and transport of drums and other containers should be by use of mechanical equipment only; no drums should be handled manually. Remote drum handling equipment may consist of a grappler equipped backhoe or front-end loader. Drum transportation should be by front-end loaders or fork lifts with modified carrying platforms. Portions of equipment that contact drums or canisters should be constructed of non-ferrous metals or contact portions should be coated or lined to preclude spark generation. Handling and transport equipment must be equipped with full frontal and side splash and explosion shields. Class ABC fire extinguishers will be fitted to the body of each piece of equipment.

### 6.2.1 General Precautions

Personnel involved in handling and transporting containerized waste will work in teams containing no fewer than two people. Visual contact will be maintained between members of the working team at all times. All members will be able to communicate between themselves and with the Site Safety and Health Officer by intrinsically safe two-way radios at all times on the work site.

Whenever possible, drums or other containers to be sampled should be opened and sampled in place to minimize handling. However, when drums are stacked or are close together, they may have to be moved to prevent sympathetic detonation of, or chemical reaction with, other drums around the one being opened. The main criterion is distance to other drums--a reasonable distance should be maintained to keep the drum to be opened segregated from the others.

### 6.2.2 Leaking or Deteriorated Drums

The contents of drums that exhibit leakage or apparent deterioration such that movement will cause rupture (determined by the Site Safety and Health Officer (SSHO)) must immediately be transferred to a repack drum. Equipment, including transfer pumps used in the repack operation must be of explosion-proof construction.

Leaking drums containing sludge or semi-solids, drums that are structurally sound but which are open and contain liquid or solid waste, and drums which are deteriorated but can be moved without rupture must be placed in overpack containers. Make certain that representative samples are obtained from overpack drums. Sample the actual drum, not material that has leaked from the drum into the overpack.

### 6.2.3 Bulging Drums

Drums which potentially may be under internal pressure, as evidenced by bulging, must be sampled in place. Extreme care shall be exercised when working with and adjacent to potentially pressurized drums.

Should movement of a pressurized drum be unavoidable, handle only by a grappler unit constructed for explosive containment. The bulging

drum should be moved only as far as necessary to allow seating on firm ground or it should be carefully overpacked.

### 6.3 Primary Staging of Drums

A staging configuration must allow the samplers reasonable access to each drum for inspection, sampling, and overpacking, if necessary, while economizing on space. Drums are staged in rows, two wide, with isle space between rows. According to the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, "In all staging areas, stage the drums two wide in two rows, per area, and space these rows 7 to 8 feet apart to enable movement of the drum handling equipment."

### 6.4 Drum Opening

Drum opening operations are completed by remote means prior to the collection of samples. This provides the sampler a means for collecting a sample in an otherwise sealed container.

#### 6.4.1 Opening Area

When possible, the drum opening area should be physically separated from the drum removal and drum staging operations. When drums must be opened after they are already in a staging area, personnel should be a minimum of 50 feet from the drum opening area. When drum opening can be performed at an area other than the staging area, there should be adequate distance between the drum opening and the removal and staging operations to prevent a chain reaction or fire during the drum opening procedure.

#### 6.4.2 Caterpillar 215 Grappler

Drum opening is normally accomplished with a Caterpillar 215 grapppler using a brass-tipped punch. A remote drum punching unit may also be used on smaller drum projects. At all times the staging area should be clear of personnel on the ground during punching operations. Extreme caution should always be taken when drum punching/opening is being performed. **AT NO TIMES SHOULD DRUMS BE PUNCHED MANUALLY BY HAND USING HAND HELD TOOLS!!** Drums that have been placed inside overpack drums upside down will need to be punched to obtain sample(s) of both liquids in them and any settled solids.

### 6.4.3 Opening Specifications

Stone & Webster procedures prohibit the opening of drums containing unknown materials by hand. Employees found to be opening drums by hand will face disciplinary action. The drums will be opened by using a remote operated air punch or by the method described above.

Containers that are inside warehouses, basements, or other buildings should be moved outside before they are opened. Opening and sampling of containers inside a building should only be done when there are no areas outside of the building that could be safely or physically used for these purposes.

If it is determined that opening and sampling of containers must be done inside of a building, then the following minimum requirements must be met:

- 1) Adequate ventilation must be provided.
- 2) Containment must be in place around drum opening and sampling area.
- 3) A,B,C type fire extinguishers must be in place.
- 4) Sand and mechanized equipment for spreading the sand in case of a fire or reaction must be present.

### 6.5 Second Inspection

After the drums have been staged and opened, a second inspection of the drums is required. During the initial inspection, the drums would have been sealed and only inspection of the outside of the drums was possible. Since the drums are now open, visual observations of the drum contents will aid in locating drums that will require special handling.

Special handling techniques are required for containers which may expose personnel to particularly hazardous conditions. These techniques and techniques for recognition of special handling drums are described in general below, although site-specific conditions may require the development of specialized methods for handling of special handling drums.

### 6.5.1 Drums Containing Biohazards

A biohazard is defined by the Biohazards Committee of the American Industrial Hygiene Association (AIHA), as "an agent that is biological in nature, capable of self-reproduction, and has the capacity to produce deleterious effects upon other biological organisms, particularly humans." Biological agents are substances which could be biohazardous substances, but are not limited to the following:

- Infectious or parasitic agents
- Non-infectious microorganisms (such as some fungi, yeasts and algae)
- Plants and plant procedures
- Animals and animal products which can cause occupational disease

Recognition is the key to avoiding disease contaminated biological waste. Be aware that this may take the form of cultured animal cells, infected clinical specimens (tissues, fluids, etc.), or tissues from experimental animals (including animal dander). Open drums should be examined for evidence of biological material such as:

- Gauze
- Hypodermic Syringes
- Petri dishes
- Cultures
- Blood
- Animal tissues
- Waste from orthopedic casts (may be gray, crumbly solids resembling a type of insulation)

Biological waste that has been prepared for incineration or for autoclaving may be packaged in red plastic bags or may be contained in

<b>Title:</b>	<b>Drum Handling and Sampling</b>	<b>No.: SW-MWD-313-0</b>
		<b>PAGE: Page 10 of 23</b>

plastic bags that are marked with the universal biohazard symbol. Biohazards such as research bacterial cultures may be sent through the mail if they are packaged in a mailing tube. It is conceivable that either type of packaging could be found on a hazardous waste project.

If a biohazard or possible biohazard is identified, seal the drum and immediately notify the Site Safety Officer and the Project Superintendent.

#### 6.5.2 Drums Containing Explosive or Shock Sensitive Waste

If drums containing wastes that have been identified by sampling, or are suspected by visual examination to be explosive in nature are found, the Project Manager and the SSHO must be notified immediately, before the drums are handled in any way.

If the Project Manager and the SSHO approve handling of these drums, they shall be handled with extreme caution. Initial handling shall be by a grappler unit constructed for explosive containment. Drums shall be palletized prior to transport to a high hazard interim storage and disposal area.

If at any time during remedial activities, an explosive, pursuant to provisions of Title 18, U.S. Code, Chapter 40 (Importation, Manufacturer, Distribution, and Storage of Explosive Materials, 1975 Explosives List) is identified, it should be secured and the appropriate state and federal agencies notified.

Identification of an explosive substance during the course of a remedial action is usually based on the experience of the on-site personnel. Potentially explosive materials usually may be identified by their physical characteristics such as texture, color density, etc. as well as by the way they are packaged. Most explosives are solids. In some cases they are packaged in water-tight containers to exclude water while in other cases they are packaged wet to preclude explosion.

Prior to handling or transporting drums containing explosive wastes, personnel working in the area shall be removed to a safe distance (as determined by the SSHO). Continuous contact with the communication bases shall be maintained until handling or transporting operations are complete. An audible siren signal system shall be used to signify the

commencement and completion of explosive waste handling or transporting activities.

#### 6.5.3 Drums Containing Radioactive Wastes

After the containers are opened, another radiological survey will be conducted. Drums containing radioactive wastes shall not be handled until radiation levels have been determined by a field survey which is recorded in a field notebook. The survey shall include background levels, direct gamma readings and laboratory analysis of drum surface wipe samples.

Depending on the level of radiation encountered, handling and transport may require special shielding devices to protect personnel. Following handling and transport, equipment used shall be surveyed by the SSHO and decontaminated to background levels prior to recommencing work. Surveys shall also be made of the ground surface in the vicinity of original drum storage to identify potential soil contamination by spilled or leaked radioactive waste. Prior to recommencing work in the area, radioactive soil areas shall be isolated to prevent tracking of radioactive contaminants about the site, and workers who entered the area should have their gloves and boots surveyed for radiation.

#### 6.5.4 Packaged Laboratory Wastes (Laboratory Packs)

If drums known or suspected of containing discarded laboratory chemicals, reagents or other potentially dangerous materials in small volume, or individual containers are found, the Project Manager is to be notified immediately, before the drums or containers are moved or opened.

Lab pack drums are easily identified by the presence of vermiculite or other absorbent type packaging material. If a drum contains such material, there is a good possibility that the drum is a lab pack drum. Further investigation may reveal that the drum also contains smaller containers inside such as sample jars, metal shipping containers, specially sealed packages, or sealed 5 gallon buckets.

If the Project Manager and the SSHO approve the handling of these containers, they shall be handled with extreme caution. Until otherwise categorized, they shall be considered to be explosive or shock-sensitive wastes. Initial handling shall be by a grappler unit constructed for

explosive containment. Drums shall be palletized and overpacked, if required, prior to transport to a staging area where sorting, identification, repackaging and/or stabilization can be done.

Prior to handling or transporting Laboratory Packs from the existing drum area, personnel working in the immediate area shall be removed to a safe distance. Continuous contact with the communications base shall be maintained until handling or transporting operations are complete. An audible siren signal system, similar to that employed in conventional blasting operations will be used to signify the commencement and cessation of Laboratory Pack handling or transporting activities.

#### 6.5.5 Air Reactive Wastes

If the presence of an air reactive substance is verified or even suspected, the material should be immediately segregated and transported to a separate high hazard interim storage and disposal area.

Air reactive wastes may be discovered during opening or sampling operations. Air reactive substances are routinely packaged in special containers or packages that keep the material from making contact with the air. They may be stored under kerosene or some other liquid to minimize air contact. They may also be found in sealed ampoules, corrugated drums, stainless steel canisters, sealed aluminum containers, or specially lined drums.

#### 6.6 Numbering and Mapping

Accurate numbering is critical. Mistakes in numbering, such as missing numbers or double numbering, are minimized by numbering after primary staging. To avoid problems, empty containers should be numbered and recorded on drum inventory logs as empty. **DRUM NUMBERING SHOULD BE STRICTLY NUMERICAL.**

Mistakes in numbering occur in most drum sampling projects. In large part, mistakes made have very little consequence until samples have been submitted to the laboratory. It is for this reason that drum numbering and drum mapping must occur before samples are collected.

After the drums in the staging area have been numbered, a drum map is made. The drum map is reviewed for double numbers and missing numbers. Any double numbered drums or missing numbers are corrected in the staging area

and on the drum map before any sampling is to be performed in the staging area.

## **6.7 Sampling**

Collection of samples should occur only after the procedures of the previous subsections have been followed. The following subsections describe collection of samples from drums which have been inspected, handled, staged, remotely opened, inspected a second time prior to sampling, and numbered.

All drums not in direct contact with ground surface and mechanical equipment should be grounded prior to the commencement of sampling. The reason for grounding of drums which are not in direct contact with ground surface is that a simple static electricity charge transferred to a drum which is not grounded, can cause an explosion or start a fire. A grounding rod driven into the ground surface, which is attached to copper wire, which is attached to a metal or copper clip, which is clipped to the drum being sampled is an acceptable method of grounding a drum.

### **6.7.1 General Sampling Procedures**

Once the drum has been grounded, sampling of the drum can begin. The steps to be followed in sampling are as follows:

- 1) Remove the lid of the overpack container or remove the polyethylene sheeting from the top of the drum.
- 2) Record any markings, special drum conditions, and type of opening on the Drum Inventory Log.
- 3) Record the identifying number from the drum onto the Drum Inventory Log. Have a copy (reduced size if necessary) of the drum staging area map and double-check the drum number and location.
- 4) Use a PID (if weather permits) and an LEL meter to collect air monitoring readings from the drum. Record the results on the Drum Inventory Log.
- 5) Insert glass tubing almost to the bottom of the drum or until a solid layer is encountered. About one foot of tubing should extend above the drum.

- 6) Allow the waste in the drum to reach its natural level in the tube. Cap the top of the sampling tube using a thumb or forefinger
- 7) Carefully remove the capped tube from the drum and insert the uncapped end in the sample container. Release thumb or forefinger from tube and allow the glass thief to drain completely into the sample container.
- 8) Repeat steps 6 & 7 until the required sample volume has been collected.
- 9) Place the used sampling tube, along with paper towels or waste rags (used to clean up any spills), into an empty metal barrel marked "sampling waste" for subsequent disposal.
- 10) Close the sampling container cover tightly, wipe off with a paper towel and place a label on the sample container.
- 11) Replace the overpack lid or place a plastic cover over the drum/container.
- 12) Measure the sample for radioactivity and record results on the Drum Inventory Log.
- 13) Fill out Chain-of-Custody Record and carefully package samples in accordance with Stone & Webster's Labeling Packaging and Shipping Environmental Samples SOP.
- 14) Complete the appropriate shipping forms. Drum samples are always considered to be high-hazard samples.

#### 6.7.2 Sampling Solids and Semisolids

Solids in drums are sampled by scooping the material up with the use of tongue depressors. All reasonable efforts shall be made to obtain sample to a depth of 12 inches or refusal. It is sometimes necessary to sample the material with the use of a trier. This sampling device is often not used however, due to the substantial increase in time necessary to obtain the trier. Tongue depressors will be disposed after each use. Nonexpendable sampling tools must be decontaminated between drums. Sometimes, the material must first be broken up with a non-sparking hammer or hammer and chisel (NOTE: This is the only time in which a

sampler is allowed to have a hammer or chisel in their hands), or, for rubber-like solids, a piece may need to be cut off with a knife.

#### 6.7.3 Sampling Solids Underneath Liquids

Sludge or solids underneath a liquid may be sampled by forcing the pipette into the drum. If the sludge does not run out into the jar, whacking the pipette or tapping it against the side of the bottle may loosen the sample. If this fails, one may break the pipette and put the pieces which have the solid in them in the bottle.

When pipettes are used for sampling, samplers must wear Whizard glove liners (stainless steel mesh glove liners designed to prevent cuts which could be caused by sharp objects such as broken glass tubing).

#### 6.7.4 Materials Between Drum and Overpack

In many drum sampling projects where drums have been overpacked, it is typical to find liquids or solids between the drum and the overpack in which it is contained. Sometimes these materials have the same appearance and matrix as the material inside of the drum itself, although they may be quite different than the material inside the drum.

##### 6.7.4.1 Solids

Solids may appear in an overpack, between the drum and the overpack, that are different than the solids or liquids in the drum itself. If these solids appear to be in soil, then a notation must be made on the Drum Inventory Log that the material exists between the drum and the overpack. This material does not need to be sampled. If these solids appear to be something other than soil, then this material must be sampled in accordance with Sampling Solids and Semisolids. In addition, a notation that the material exists between the drum and the overpack must be made on the Drum Inventory Log.

##### 6.7.4.2 Liquids

Liquids may appear in an overpack, between the drum and the overpack, that are different from the solids or liquids in the drum itself. This material must be sampled in accordance with Sampling Procedures. In addition, a notation that the material

exists between the drum and the overpack must be made on the Drum Inventory Log.

#### 6.7.4.3 Sampling Frozen Drums

Stone and Webster may be faced with the need to collect samples in conditions where the temperature is below 32° F (0° C) and the material inside the drum is partially or completely frozen. In situations where the material in the drum is frozen, a Milwaukee wood bit with an air driven drill or hand drill is used (with the Milwaukee wood bit) to drill, or auger through the frozen material. Every few inches of augering, the bit is removed and the shavings are placed into the appropriate sample container(s). This procedure is repeated until a sufficient volume of the material has been obtained. Care must be taken to insure that a hole is not drilled through the bottom of the drum.

#### 6.7.5 Post-Sampling Procedures

After the sample has been taken, the outside of the bottle will be wiped off and labeled with the drum number. The drum number will also be written on the lid of the bottle. All sampling data and observations will be recorded on the drum inspection log.

After a group of drums have been sampled, the samples will be collected. The sampling trash, sample gloves, paper towels, etc., will be collected and placed into a drum marked "sampling waste" for disposal. The sampling pipettes will also be collected and packaged in the sampling waste drum for disposal.

All openings shall be plugged except during sampling operation. The reason for this is to prevent rainwater from entering the drum before or after sampling has been performed. For drums which are in overpack containers, this is simply having the lid on the overpack container. For drums which are not in overpack containers, this can be accomplished by placing polyethylene sheeting over the top of the drum in a manner that will keep rainwater from entering the drum.

### 6.8 Drum Inventory Log

The field data gathered during the drum sampling activities will be recorded on a Maywood Project Drum Inventory Log sheet. The following is a list of the

information necessary to complete the form

- 1) Drum Number - Number only; at least 3 digits in length (001).
- 2) Site Number - Assigned by Stone & Webster to each site on the project.
- 3) Page - of - If Material Safety Data Sheets (MSDS) or other information, then the total number of pages accompany the drum log is required. Mostly it will be page 1 of 1.
- 4) Site Location - Name assigned by Stone & Webster to each site on the project
- 5) Project Superintendent or designee - see Section 5.4.
- 6) Phone - Site phone or number of the supporting Stone & Webster office.
- 7) Logger - Name of individual responsible for filing in the sampling portion of the Drum Inventory Log.
- 8) Sampler - Name of individual(s) responsible for obtaining the sample
- 9) Weather - Weather conditions during sampling (e.g., temperature and/or precipitation).
- 10) Date - Date when sample was collected.
- 11) Time - Time when sample was collected.
- 12) Drum Type - Indicate the drum type and materials of construction.
- 13) Lid Type - Indicate the type of closure on the container.
- 14) Drum Condition - Describe the integrity of the drum. State "Meets DOT specifications" if the drum can be shipped according to Department of Transportation (DOT) regulations.
- 15) Drum Size - Provide the volume of drum when full. If the drum is overpacked, the inner drum volume should be indicated, not the size of the overpack.
- 16) Drum Contents - Provide the volume of waste contained in the drum.

- 17) Overpacked - Indicate if the container was overpacked, and state the type of overpack utilized.
- 18) Layers - Designates the layer as top, middle or bottom for a multi-layered sample. If only one layer exists, complete only the line associated with the top layer, "T".
- 19) Physical State - Indicate the actual physical state of each layer.
- 20) Color - A standard color description for each layer of the sample should be written in.
- 21) Clarity - Indicate the clarity of each layer of the sample.
- 22) Layer Thickness - Record the thickness of each layer in inches; an estimate of how deep the layer is.
- 23) pH - Record pH measurement in standard units (SU); 0 to 14 or the designation "N/A" if there was no measurement obtained.
- 24) PID - Record the results for vapor analysis by photoionization detector (PID) or the designation "N/A" if there was no measurement obtained. The PID scale reads in ppm (0 to 2,000).
- 25) Dosimeter - The results of the field radiation survey is recorded in this space or the designation "N/A" if there was no measurement obtained. The dosimeter's scale units are in millirems per hour (mr/hr or mrem/hr).
- 26) Other - This space is for additional analysis which may take place or the designation "N/A" if there were no other measurements. The information should include the equipment used, the parameter being measured, and its concentration. Example: Drager tube - HCN - 5 ppm.
- 27) DOT Haz - Hazard category from placards or stencils on drum. Example: Corrosive Liquid.
- 28) UN/NA - Space for any UN or NA numbers which are stenciled or written on the drum. These numbers are always fixed by either UN or NA.
- 29) MFG Name - Name, address, and telephone number of the company producing or distributing the chemical/product. If the space provided is

inadequate, indicate that the information continues on the back of the log, and do so.

30) Chemical Name - Any chemical or compound, key ingredient, trade name, and/or chemical name of the contents on the label or stenciled on the drum. Indicate whether the information was printed on a label or stenciled or handwritten on the drum. If the space provided is inadequate, indicate that the information continues on the back of the log, and do so.

31) Additional Information - This space is for additional information or comments for which no specific space is designated. It can include unusual comments or problems such as the contents are too hard to sample, drum color, or that colored crystals have formed on the drum. If the space provided is inadequate, indicate that the information continues on the back of the log.

#### **6.9 Sample Preservation and Packing Procedures for Drummed Waste Samples**

- No preservatives shall be used.
- Place sample in a zip-lock plastic bag. (If sample is liquid, place bottle in plastic bag)
- Place each bagged container in a covered metal can containing absorbent packing material
- Mark the sample identification number on the outside of the can.
- Arrange for the appropriate transportation mode consistent with the type of hazardous waste involved. Depending on mode of transportation and type of material being transported, additional packaging requirements may apply.
- In general follow the procedures given in Stone & Webster's Labeling, Packaging and Shipping Environmental Samples SOP.

#### **6.10 Decontamination Procedures**

All sampling equipment used in obtaining samples from containers will be either dedicated (disposable) or pre-cleaned and decontaminated. For detailed guidance in decontamination procedures, refer to Stone & Webster's Decontamination SOP.

- 1) Thoroughly scrub with a brush using a detergent (Alconox) and hot water solution to remove large particles.
- 2) Thoroughly rinse the detergent solution off the equipment with tap water.
- 3) Rinse the equipment with deionized water.
- 4) Solvent rinse the equipment with pesticide grade isopropanol.
- 5) Solvent rinse the equipment with pesticide grade hexane.
- 6) Air dry the equipment before use.

#### **6.11 Resealing and Secondary Staging**

All containers opened for sampling need to be resealed to prevent the escape of vapors and possible reactions with rainwater and air. The resealing methods will depend on the opening methods used and include the following:

- Replacing the lid and retaining ring.
- Placing the drum in an overpack (larger drum) when it cannot be resealed by any other method.
- Placing polyethylene sheeting over the drum in a manner that prevents rainwater from entering the drum. The sheeting should be secured to prevent it being blown off by the wind.

It is important to note that these resealing methods are for the purpose of preventing leakage from the container while it is in storage on the site. If the container is to be moved off the site, DOT regulations regarding transportation and sealing of drums will apply.

Once the drum is sampled and resealed, it should be left where it cannot react with other containers on the site. For a small number of drums, the storage areas may be the staging and opening area. In any event, the sampled drums should be placed in an area away from other groups of containers on the site. The reason is that slowly progressing chemical reactions can start when a container is opened and the contents exposed to air or the disturbance caused by handling the drum. Such a reaction could take hours or even days to occur.

<b>Title:</b> <b>Drum Handling and Sampling</b>	<b>No.: SW-MWD-313-0</b> <b>PAGE: Page 21 of 23</b>
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Another reason for the segregation and identification of drums for recovery is for use as evidence and as an indication of which drums have been sampled.

#### **6.12 Sample Control**

The Project Chemist or his/her representative on-site is responsible for the identification, preservation, packaging, handling, shipping, and storage of samples obtained from the site. For detailed guidance in these procedures, refer to Stone & Webster's Labeling, Packaging, and Shipping Environmental Samples SOP.

### **7.0 CHARACTERIZATION AND TEST BLENDING**

A waste blending test is used to determine if the drums included in a waste stream are truly compatible. Whether the wastes are to be blended on site or to be sent in drums to a disposal facility, a waste blending test must be performed for waste profile purposes. Waste blending is usually performed by the on-site Chemist.

Samples of the blended waste to be sent off-site for laboratory analysis for disposal parameters will be shipped by the following procedures and by the procedures listed in Stone & Webster's Labeling, Packaging, and Shipping Environmental Samples SOP.

- 1) The lids of the sample jars will be tight and sealed with tape.
- 2) The sample container will be placed inside two 4-mil plastic, protective bags.
- 3) The sealed sample will be placed in a metal paint can.
- 4) The samples will be placed into a cooler and packed with blue ice to maintain their temperature at 4 degrees Celsius.
- 5) Bubble pack or other insulating packing material will be placed into empty spaces in the cooler.
- 6) The cooler will be sealed, addressed, identified, and placarded according to the nature of the hazards associated with the materials being shipped.

### **8.0 EQUIPMENT**

The equipment listed below will normally be required to accomplish drum sampling on a project site.

- Spill Control Kit
- Remote controlled drum opening equipment - pneumatic, hydraulic or other
- LEL/O<sub>2</sub> meter (MSA Model 260/360)
- HNU portable organic vapor analyzer (Model HW - 101)
- Fire extinguisher, Class A, B and C, size as per Health & Safety Plan requirements
- Radiation survey meter, internal GM detectors (Ludlum Model 5, P/N 48 - 1607)
- Personal protective equipment. This may include: robar or Tingley boots, Tyvek and/or saran protective suit with hood, acid jacket and pants, vinyl booties, vinyl sample gloves, nitrile outer gloves, hard hat with splash shield and respirators.
- Rolls of plastic sheeting (Visqueen)
- Sampling Equipment
- Equipment and supplies needed for drum sampling (per 100 drums)
  - ◇ 120 drum log sheets
  - ◇ 120 8oz jars with Teflon lined lids
  - ◇ 200 tongue depressors
  - ◇ 120 11mm dip tubes
  - ◇ 400 pair sample gloves
  - ◇ 5 mean streaks
  - ◇ 4 rolls of paper towels
  - ◇ 2 30 gal. Polyethylene trash bags
  - ◇ 12 chain-of-custody forms
  - ◇ 4 Liters of isopropanol
  - ◇ 4 Liters of hexane (Pesticide grade)
- Equipment and supplies generally needed per drum job
  - ◇ 1 12-column book
  - ◇ 2 Stone & Webster record books
  - ◇ 1 knife, beryllium copper (BeCu)
  - ◇ 1 bung wrench, Ampco metal
  - ◇ 1 screwdriver, beryllium copper
  - ◇ 1 scraper, beryllium copper

- ◇ 1 hammer, claw, BeCu alloy
  - ◇ 1 chisel, Ampco metal, 1" wide
  - ◇ 2 pairs cut-proof glove liners
  - ◇ (2) 15/16" sockets, BeCu alloy
  - ◇ (2) ½" drive ratchets, BeCu alloy
  - ◇ (1) 1 ¼" x 18"L wood boring bit
  - ◇ (1) ½" air powered drill, low RPM
  - ◇ 1 tool box, polyethylene with lock
  - ◇ 2 wash bottles, isopropanol
  - ◇ 2 wash bottles, hexane
  - ◇ 2 wash bottles, acetone
  - ◇ 1 H<sub>2</sub>S monitox with gas generator
  - ◇ 1 HCN monitox with gas generator
- Source of pressurized air (100 psi and 8 CFM) and air hoses for air drill and remote pneumatic drum punch.



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

<b>TITLE:</b>  <b>Labeling, Packaging, and Shipping Environmental Samples</b>	<b>NO.:</b> SW-MWD-504-0
	<b>PAGE:</b> 1 of 10 plus two attachment pages
	<b>DATE:</b> May 1999
<b>APPROVED:</b>  _____ Project Manager  _____ Project Engineer	

**1.0 PURPOSE**

This Standard Operating Procedure (SOP) - **Labeling, Packaging, and Shipping Environmental Samples** is to be employed at the FUSRAP Maywood Superfund site when samples are to be collected for laboratory analysis.

The purpose of this SOP is to provide detailed guidance on how to label, package and ship samples of various matrices for analysis by a fixed-based laboratory. It also provides guidance on how the samples should be labeled and how the Chain-Of-Custody (COC) form that accompanies the samples should be filled out.

**2.0 SCOPE**

This SOP details the materials, equipment, and methods common to all sample labeling, chain-of-custody, packaging, and shipping activities for groundwater, surface water, soil, and sediment samples. Actual sample collection or addition of chemical preservatives to samples are not addressed in this SOP. See the Maywood task-specific Sampling and Analysis Plan (SAP) for this information. For guidance on shipment of radioactive samples, see Maywood SOP 508, Procedure for Shipping Radiologically Contaminated Environmental Samples. Always consult program-specific requirements for labeling, packaging, and shipping (see Section 3.1.6 of the Maywood Field Sampling Plan (part of the Chemical Data Quality Management Plan) to ensure compatibility of this SOP with project requirements. **Field changes to this SOP shall be discussed with the Project Manager or Project Chemist prior to implementation and shall be documented in project field logbooks.**

**Samples classified as Poison A, Poison B, radioactive, corrosive, or oxidizer, or remediation wastes are not covered in this SOP.**

**3.0 REFERENCES**

FUSRAP Maywood Superfund Site Chemical Data Quality Management Plan, Stone & Webster, May, 1999.

**4.0 DEFINITIONS**

None.

**5.0 RESPONSIBILITIES**

**5.1 PROJECT MANAGER**

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified for the needed work.

**5.2 PROJECT ENVIRONMENTAL ENGINEER**

Translates the USACE's requirements into technical direction of project. Reviews and approves technical progress, ensures that the CQCSM has been properly briefed and is prepared for packaging and shipping task.

**5.3 CONTRACTOR QUALITY CONTROL SYSTEM MANAGER (CQCSM)**

The CQCSM, or his designee ensures that field personnel have been briefed in chain-of-custody, sample packaging and shipping in accordance with the project requirements, this SOP and related SOPs. Assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin. Assures that all necessary personnel are mobilized on time. Maintains daily log of activities during each day of fieldwork.

The CQCSM, Project Chemist, or their designee is also responsible for determining that samples are properly packaged and shipped, and for determining that chain-of-custody procedures are implemented from the time the samples are collected to their release to the shippers.

Should field conditions necessitate changes in the number and/or type of samples collected, or changes in sample shipment dates, the CQCSM must notify the Project Manager and the Project Chemist of the changes prior to completion of field activities.

The CQCSM coordinates and consults with the Task Manager or Project Superintendent on decisions relative to unexpected occurrences or deviations from this SOP during the packaging and shipping phase.

The CQCSM shall notify the Project Chemist of the number and type of samples and approximate collection, shipment, and delivery dates for all samples prior to leaving for the field.

#### 5.4 SITE SAFETY & HEALTH OFFICER

All field activities must be carried out in accordance with the Maywood General Site Safety and Health Plan (SSHP). Ensuring the fulfillment of the requirements of the SSHP is the responsibility of the Site Safety and Health Officer (who may also serve as a sample packer and shipper).

#### 5.5 PROJECT CHEMIST

The Project Chemist is responsible for coordinating sample shipment with the laboratories to minimize holding times and assure proper handling of all samples.

The Project Chemist shares responsibility with the CQCSM for determining that samples are properly packaged and shipped, and that chain-of-custody procedures are implemented from the time the samples are collected to their release to the shippers.

#### 5.6 SITE PERSONNEL

All employees who are engaging in sample packaging and shipping activities are required to read and sign the task-specific Site Safety and Health Plan (SSHP) and to follow the procedures in this SOP, unless superseded by project-specific requirements. All sample packaging and shipping activities, including deviations to this SOP, will be recorded in field logbooks during on-site activities.

Field sampling personnel are expected to carry out the sample packaging and shipping activities. They are responsible for the care and custody of the samples collected until they are properly disposed or dispatched. The CQCSM or Project Chemist should be contacted if any problems arise during this phase of the sample collection process.

Personnel assigned to a project team with the task of collecting and shipping samples will be trained in specific techniques of sample collection and shipment.

## 6.0 PROCEDURE

### 6.1 EQUIPMENT

The following is a list of equipment & material commonly used for labeling, packaging and shipping samples.

- Nylon filament tape
- COC forms
- COC seals
- Vermiculite, Styrofoam, and/or bubble wrap
- Resealable plastic bags
- Permanent felt tip marker
- Pen (black permanent ink)
- Ice
- Shipping coolers
- Labels
- Metal cans (if high hazard samples are anticipated)
- Absorbent pads
- Transparent shipping tape
- Trash bags
- Duct tape (seals off openings in coolers)
- Knife or scissors to cut tape

### 6.2 SAMPLE LABELING

Prior to sample removal from the sampling location and packaging and shipment to an offsite laboratory, all sample containers will be assigned a permanent sample label. All notations on the label will be marked using indelible ink. Use prepared sample labels (whenever possible) to document all information necessary for effective sample tracking. In the case of soil samples, the boring number and the depth at which the sample was taken should also be included on the label. The information on the label will include the following:

- ◆ Date and time of sample collection (use military 24-hour format for the time)
- ◆ Sample ID number
- ◆ Project identification
- ◆ Type(s) of analysis to be performed
- ◆ Preservation method used for sample

The sample label can be modified to satisfy USACE/project specific requirements. For example, all sample labels and COCs associated with samples shipped to the USACE QA laboratory shall have a Chemical Quality Assurance Branch (CQAB) assigned number corresponding to the numbering sequence in the CQAB laboratory's Laboratory Information Management System (LIMS).

A set of labels will be prepared and numbered to correspond with unique samples to be collected. **For certain projects requiring strict quality control, blank, duplicate, or field spikes, the QC sample type shall not be identified as such on the label as this may compromise the quality control function. In those instances, assign a unique sample number to each QC sample and record the type of QC sample collected in the field logbook. In all other instances, assign a sample number using the Sample ID System for all Maywood Sites (from Table 3-1 of the Maywood FSP) as follows:**

XXXX-AAmmNNNNn-##### - to be used for data base reporting

XXXX##### - to be used for sample collection and delivery to lab

XXXX = Site Designator

- Maywood Interim Storage Site = MISS
- Stepan Property = STEP
- Sears Property = SEAR
- New Jersey Vehicle Inspection Station = NJVS
- etc. (others as needed)

AAA = Area/Activity Designator

- Pilot Test = PT1
- Burial Pit 1 = BP1
- Background = BKG
- etc. (others as needed)

mm = Media

- Surface Soil = SS
- Subsurface Soil Boring = SB
- Sediment = SD
- Ground Water = GW
- Surface Water = SW
- Storm Water = ST
- Aquatic Biota = AB
- Terrestrial Biota = TB
- Air Filter = AF
- Radon Detector = RD
- TLDs = TD
- Quality Control = QC
- etc. (as new media types are identified)

NNNN = Station Number

Unique station identifier

n = Sample Type

Regular = 0, Trip Blank = 3, Duplicate = 1,

Equipment Rinsate = 4, Split = 2, Site Source Water Blank = 5

##### = Sequential Sample Number

Unique to each site

### 6.3 CHAIN-OF-CUSTODY

Stone & Webster has established a program of sample custody that shall be followed during sample handling activities from the particular Maywood property to the laboratory. This program is designed to ensure that each sample is accounted for at all times.

The objective of the sample custody identification and control system is to ensure, to the extent practicable, that the following conditions are met:

- Samples scheduled for collection are uniquely identified
- The correct samples are analyzed and are traceable to their records
- Important sample characteristics are preserved
- Samples are protected from loss or damage
- Any alteration of samples (e.g., filtration, preservation) is documented
- USACE confidentiality is maintained
- Sample COC shall be maintained through sample collection, shipment, storage, and analysis as a legal record and auditable trail of sample possession.
- Possession will be traceable by means of a COC record. The COC bears the signatures of the persons in possession of the samples. **The COC shall remain with the samples at all times until receipt by the laboratory.**

The appropriate sampling and laboratory personnel shall complete COC records for each sample. The following COC protocol shall be employed by sampling crews and recorded on the COC for each sample:

- Maywood Sample ID number (as described in the Labeling Section of this SOP). Use a separate column (or line depending on the configuration of the particular COC being used) for each parameter to be tested for a given sample number.
- Bottle types and sizes

- Analytical test parameters or test parameter method (in Analysis/Remarks Section); e.g., EPA Method 8270. Also indicate lab QC sample, if applicable; e.g., MS/MSD
- Specific instructions to the lab; e.g., unique turnaround times, specific analytes or other special instructions for analysis
- Number of containers corresponding to each sample ID number and parameter,
- Preservatives used (if any),
- Specific sample collection method (grab or composite)
- Type of matrix
- Date and time of each sample collection
- Name(s) of the sampler(s) and signature of the person shipping the samples
- Date and time that the samples were sealed for delivery
- Names of those responsible for receiving the samples at the laboratory (to be filled out at the laboratory)

The COC record shall be completed in triplicate using black waterproof ink. If any changes or corrections are made, they should be made by drawing a single line through the entry, initialing and dating the change, and entering the correct information. One copy shall accompany the samples to the laboratory, another is kept by the sample crew chief and transferred to the Project Chemist, and the last copy shall be maintained in the project file. A copy of the chain-of-custody form will also be forwarded via facsimile to the USACE Contracting Officer (CO) whenever samples are shipped from the field site. Additional copies shall be provided as needed for the project. Whenever collocated or split samples are collected for comparison analysis by the USACE QA Laboratory or a government agency, a separate chain-of-custody is prepared for those samples and marked to indicate with whom the samples are being split.

After shipment, the laboratory sample receiver signs and records the date and time of receipt on the COC, completing the sample transfer process.

#### 6.4 SAMPLE PACKAGING

Sample containers are generally packed in insulated coolers for shipment. Appropriate packing materials are bubble wrap and vermiculite. Bottles are packed tight so that they cannot move during shipment. The following steps shall be followed:

- To eliminate the chance of breakage during shipment, approximately one inch of inert cushioning material shall be placed in the bottom of the cooler.
- Place each sample container tightly inside its own plastic bag and seal, as a precaution against cross-contamination due to leakage or breakage.

- Place containers upright in the cooler in such a way that they will not touch during transport.
- After samples have been packed, ice shall be placed in double Ziplock bags and added to the cooler. Use enough ice to ensure that the temperature of the cooler contents are  $\leq 4^{\circ}\text{C}$ . Also make sure the entire cooler is packed tightly so no containers shift during shipping, thus avoiding breakage.
- Include all paperwork in a separate Ziplock bag taped to the inside lid of the cooler.

**Chain-of-Custody documents will accompany all shipped samples**

**For courier pickup** - COC forms will be completed by the sampler and courier and placed in the cooler (see Sections 6.3 and 6.5).

**For sample shipment** - COC forms will be completed by the sampler and placed in the cooler (see Section 6.3).

1. Duct-tape cooler lid seal and drains. Tape the cooler shut with strapping tape.
2. Affix numbered, signed, and dated custody seals to ensure that samples have not been disturbed during transport. Cover custody seals with clear tape.
3. If not already there, the lab address will be written on the top of the cooler with indelible ink.

**6.5 SAMPLE SHIPPING**

After collection, all samples shall be transported to the contract laboratory in such a manner as to preserve their integrity. To maintain the required level of sample custody, overnight carrier shipping manifests are normally employed. Field samples that require shipment shall be sent to the laboratory by an overnight courier service within 24 hours of their collection. No sample shall remain on site for more than 24 hours after collection unless previous arrangements have been made with the laboratory, i.e., weekend sampling.

**Courier Pickup of Environmental Samples**

If the laboratory is located within a reasonable distance from the site, arrangements may be made to have the laboratory pick up the samples. Most laboratories have their own courier service and will pick up samples if the site is within 200 miles of their facility. **Coordinate with the receiving laboratory prior to sample collection events to ensure that the desired pick-up will occur on time.**

When the samples are transferred to a laboratory courier, the sampler shall:

- Sign, date, and enter the time in the “Relinquished by” entry location of the COC form.
- Make sure that the courier receiving the sample signs the “Received by” entry of the COC form.

### Shipping Environmental Samples

Environmental samples requiring shipment to a laboratory shall be sent next-day delivery by Federal Express or an equivalent overnight carrier. **The receiving laboratory shall be given advance notice by the Stone & Webster CQCSM no later than 48 hours before sample shipment.**

If Friday sampling is unavoidable and Saturday delivery is not possible, samples shall be properly stored (custody and sample preservation must be maintained) over the weekend. If prompt shipping and laboratory receipt of samples cannot be guaranteed, the samplers will be responsible for proper storage of samples until adequate transportation arrangements can be made or sample collection schedules will be modified by the CQCSM. If holding times would be exceeded by storing samples over the weekend (e.g., if there are 24 hour turnaround requirements), alternative arrangements must be made by the CQCSM for sample collection and shipment or pickup.

**Note:** Overnight carriers usually will not accept responsibility for signing COC forms. Therefore, the Sampler shall sign, date, enter the time in the “Relinquished by” entry location of the COC form, place inside a zip-lock bag inside the sample container, and seal the container as specified in Section 6.4 - Sample Packaging.

## 6.6 GLOSSARY OF TERMS

COC - Chain-Of-Custody form

Matrix - The physical description of the medium being sampled e.g. soil (solid), aqueous (liquid)

SOP - Standard Operating Procedure

QA - Quality Assurance

QC - Quality Control

CQCSM – Contractor Quality Control System Manager

CQAB – Chemical Quality Assurance Branch

<b>Title:</b> <b>Labeling, Packaging, and Shipping Environmental Samples</b>	<b>No.: SW-E/I-504-0</b>
	<b>PAGE: Page 10 of 10</b>

LIMS – Laboratory Information Management System

Title:

Labeling, Packaging, and Shipping Environmental Samples

No.: SW-E/I-504-0

PAGE: Page 1 of 2

ATTACHMENT A

SAMPLE LABEL

NAME OF SAMPLING ORGANIZATION <u>STONE &amp; WEBSTER</u>	
SAMPLE DESCRIPTION <u>GROUNDWATER FROM MONITORING WELL #1 AT BAINBRIDGE SITE</u>	
JOB #: <u>0141032</u>	REMARKS
DATE: <u>11/2/92</u>	
TIME: <u>10:40</u>	
PRESERVATIVE: <u>HCl</u>	
SAMPLED BY: <u>DAVID JONES DJ</u>	
SAMPLE ID NO.: <u>BA - MW01GW - XX</u>	

No.: SW-EI-504-0  
PAGE: Page 2 of 2

Title: Labeling, Packaging, and Shipping Environmental Samples

 <b>Inchcape Laboratory</b> Environmental Laboratories		55 South Park Drive Colchester, VT 05446		TEL: (802) 655-1203 FAX: (802) 655-1248		PAGE <u>2</u> OF <u>2</u>																												
<b>COMPANY INFORMATION</b> Name: <u>Stone &amp; Webster</u> Address: <u>245 Summer St</u> <u>Boston, MA</u> <u>02210</u> Telephone: <u>617-589-1080</u> Facsimile: <u>617 589-2722</u> Contact Name: <u>Tim Taylor</u>			<b>COMPANY'S PROJECT INFORMATION</b> Project Name: <u>ANG-BURL</u> Project Number: _____ Sampler Name(s): <u>Kevin Scully</u> <u>Paul Garden</u>			<b>SHIPPING INFORMATION</b> Carrier: _____ Airbill Number: _____ Date Shipped: _____ Hand Delivered: <input type="checkbox"/> yes <input type="checkbox"/> no		<b>VOLUME/CONTAINER TYPE/PRESERVATIVE (NOTE 4)</b> <table border="1"> <tr> <td>1L</td><td>Amb</td><td>1L</td><td>500</td><td>500</td> </tr> <tr> <td>40</td><td>GL</td><td>GL</td><td>ML</td><td>ML</td> </tr> <tr> <td>ML</td><td>HCL</td><td>Amb</td><td>ML</td><td>ML</td> </tr> <tr> <td></td><td></td><td>GL</td><td>PL</td><td>PL</td> </tr> <tr> <td></td><td></td><td>Cool</td><td>Cool</td><td>Cool</td> </tr> </table>		1L	Amb	1L	500	500	40	GL	GL	ML	ML	ML	HCL	Amb	ML	ML			GL	PL	PL			Cool	Cool	Cool
1L	Amb	1L	500	500																														
40	GL	GL	ML	ML																														
ML	HCL	Amb	ML	ML																														
		GL	PL	PL																														
		Cool	Cool	Cool																														
<b>INCHCAPE LABORATORY INFORMATION</b>			Quote #: _____		Client Code: _____																													
<b>SAMPLE IDENTIFICATION (NOTE 1)</b>		<b>COLLECTION</b> DATE      TIME		GRAB	COMPOSITE	MATRIX	<b>ANALYSIS/REMARKS (NOTE 2,3)</b>		<b>NUMBER OF CONTAINERS</b>																									
EQ 1		8/21/96 18:20		✓		A	8270		1																									
MCW 101		8/22/96 0900		✓		A	8260		1																									
MCW 101		8/22 0910		✓		A	8270		1																									
MCW 101		8/22 0920		✓		A	Total Metals - 6010 <sup>AS</sup> ONLY		1																									
MCW 101 (B)		8/22 0925		✓		A	Dissolved Metals - 6010 <sup>AS</sup> ONLY		1																									
Relinquished by: (signature) <u>Kevin Scully</u>		DATE <u>8/22/96</u>	TIME <u>10:15</u>	Received by: (signature) <u>James P. Seneau</u>		<b>NOTES TO SAMPLER(S):</b> (1) Limit Sample Identification to 6 characters, if possible; (2) Indicate designated Lab Q.C. sample and type (e.g.: MS/MSD/REP) and provide sufficient sample; (3) Field duplicates are separate sample; (4) e.g.: 40 ml/glass/H <sub>2</sub> SO <sub>4</sub> . Notes to Lab: <u>(B) Filter Sample &amp; Run dissolved metals - DO IMMEDIATELY</u>																												
Relinquished by: (signature)		DATE	TIME	Received by: (signature)																														
Relinquished by: (signature)		DATE <u>8/22/96</u>	TIME <u>1130</u>	Received for Laboratory by: (signature) <u>[Signature]</u>																														

ATTACHMENT B

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

**TITLE:**

Decontamination

**NO.:** SW-MWD-506-0

**PAGE** 1 of 4

**DATE:** September 1999

**APPROVED:**

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Project Engineer

**1.0 PURPOSE**

To describe procedures for removing contamination from personnel and sampling equipment before and after sampling events at the FUSRAP Maywood Superfund Site. Decontamination is necessary to prevent spread of contaminants, to prevent cross-contamination of samples, and to protect the Safety and Health of site personnel.

**2.0 SCOPE**

This SOP provides information on the proper methods for decontamination of personnel and sampling equipment.

**3.0 REFERENCES**

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, DHHS (NIOSH) 85-115, October 1985.

Field Standard Operating Procedures (FSOP) 7, "Decontamination of Response Personnel", USEPA, January 1995.

29 CFR Part 1910, "Hazardous Waste Operations and Emergency Response", March 1989.

U.S. Environmental Protection Agency, Compendium of ERT Soil Sampling and Surface Geophysics Procedures, EPA/540/P-91/006, January 1991.

**4.0 DEFINITIONS**

None.

**5.0 RESPONSIBILITIES**

TITLE: <b>Decontamination</b>	NO.:            SW-E/I-506-0
	PAGE            2 of 8

Personnel requirements for decontamination activities will vary depending upon the size and scope of the sampling effort. Designated field personnel are responsible for implementing all aspects of this SOP. In addition, all field activities must be carried out in accordance with a Maywood Site Safety and Health Plan (SSHP). Ensuring the fulfillment of the requirements of the SSHP is the responsibility of the Site Safety and Health Officer (SSHO) who may also perform sampling and decontamination activities.

## 6.0 PROCEDURE

### 6.1 APPLICABILITY

This procedure serves as guidance on the proper methods of decontaminating personnel and sampling equipment. These procedures can be modified or expanded to meet specific Maywood project requirements. Such changes should be documented with the task-specific Sampling and Analysis Plan or Safety and Health Plan.

### 6.2 EQUIPMENT AND MATERIALS

In selecting decontamination equipment, consider whether the equipment itself can be decontaminated for reuse or can it be easily disposed. The recommended equipment for decontamination of personnel, PPE, and equipment are:

- Appropriate personnel protective clothing (as required by HASP),
- Field Sampling Plan (FSP)
- Health And Safety Plan (HASP). **To be read and signed by all site personnel prior to site activities.**
- Field logbook(s)
- Non-phosphate detergent,
- Selected solvents (e.g., nitric acid (for non-metallic equipment only), acetone, hexane, or methanol), deionized water and tap water,
- Brushes,
- Spray bottles for solvents and water;
- Wash basins,
- Plastic sheets,
- Emergency eyewash bottle,
- Trash containers and paper towels,

<b>TITLE:</b>	<b>Decontamination</b>	<b>NO.:</b>	SW-E/I-506-0
		<b>PAGE</b>	3 of 8

- Aluminum foil and Plastic garbage bags,
- Storage containers (e.g. DOT approved 55 gallon drums and 5 gallon buckets with lids) for storage and disposal of contaminants and contaminated soils

Steam cleaning and pressure washing equipment may be used for larger equipment and vehicles.

Additional equipment necessary for decontaminating personnel vary depending upon the level of personnel protection clothing and equipment used onsite. These additional items are identified in relevant sections of this Standard Operating Procedure.

### 6.3 DECONTAMINATION FACILITY DESIGN

At a hazardous waste site, decontamination facilities should be located in the Contamination Reduction Zone (CRZ), i.e., the area between the Exclusion Zone (the contaminated area) and the Support Zone (the clean area) as described in the Maywood Site Safety and Health Plan.

### 6.4 PERSONNEL DECONTAMINATION

Four levels of personnel protection, as discussed in the PPE procedure, are available for use at any given site. The following is a description of the decontamination process for Level D and modified Level D.

- If required, an area will be designed for the removal of gloves and boot covers. Paper towels will be available for removal of this equipment.
- A trash barrel at the site will be provided for all disposable noncontaminated PPE. This material will be disposed of in a normal trash receptacle at the plant before leaving the site.
- Laundering of personal clothing should be completed as soon as possible once off-site.
- Soap and water will be used to wash hands before eating, drinking or smoking, and before using the bathroom facilities.

### 6.5 EQUIPMENT DECONTAMINATION

#### 6.5.1 General

Adequate supplies of all materials must be kept on hand. This includes all rinsing liquids and other required materials.

#### 6.5.2 Engineering Controls to Minimize Equipment Contamination

Whenever practical, employ engineering controls to either prevent or minimize the exposure of equipment to site contamination. Steps such as placing monitoring equipment in plastic bags, exposing only sampling ports or sensors to the environment can reduce or eliminate the need for decontamination. Once equipment is decontaminated, covering equipment with an impermeable,

TITLE:	Decontamination	NO.:	SW-E/I-506-0
		PAGE	4 of 8

strippable coating (e.g. aluminum foil) will maintain cleanliness for the next use.

### 6.5.3 Material Compatibility

The substances chosen for equipment decontamination must be effective in removing the known or suspected site chemicals of concern.

The chemical and physical compatibility of the decontamination solutions or other decontamination materials to both each other and the chemicals of concern must be determined before they are used. **Any decontamination method that: 1) poses a direct health hazard to workers (e.g., vapors from chemical decontamination solutions may be hazardous if inhaled, or they may be flammable); or 2) permeates, degrades, damages or otherwise impairs the safe functioning of the PPE is incompatible with such PPE and should not be used.**

### 6.5.4 Decontamination Facility Design

At a hazardous waste site, decontamination facilities should be located in the Contamination Reduction Zone (CRZ), i.e., the area between the Exclusion Zone (the contaminated area) and the Support Zone (the clean area). Refer to your site Health and Safety Plan for your site-specific requirements.

The extent of known contamination will determine to what extent equipment needs to be decontaminated. If the extent of contamination cannot be determined, cleansing should be done assuming that the equipment is highly contaminated until enough data are available to allow assessment of the actual level of contamination.

The following general decontamination principles should be considered when laying out the physical arrangement of the decontamination line:

- The decontamination method selected must be effective for the known or suspected chemicals of concern; and
- The decontamination process should consist of a series of steps performed in a specific sequence, each step performed at a separate station in order to prevent cross contamination, with the stations preferably arranged in a straight line.
- All decontamination workers must be decontaminated before entering the clean Support Zone. Refer to SOP - **Personal Protection Equipment Decontamination** and your HASP for your site safety issue considerations.

Site-specific factors that affect the decontamination facility design must be considered. The following are the typical factors for consideration.

- Proximity to work areas, water supplies, and contaminated material staging areas.
- The potential for, exposure based on assigned worker locations, duties, activities and

TITLE:	Decontamination	NO.:	SW-E/I-506-0
		PAGE	5 of 8

- functions.
- The chemical, physical, and toxicological properties of the wastes.
- The movement of personnel and/or equipment among different zones.
- Contingency plans for emergencies
- The methods available for protecting workers during decontamination.

#### 6.5.5 Standard Procedure for Small Equipment Decontamination

The 9-step decontamination procedure listed below is the generic standard procedure for small equipment (e.g. split spoons, hand augers, bailers, etc.) decontamination which combines both physical and chemical removal steps. This procedure may be modified to address site-specific chemicals of concern and media being sampled. Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if analysis does not include inorganics.

- Remove any solid particles from the equipment or material by brushing and then rinsing with available tap water. This initial step is performed to remove gross contamination.
- Wash equipment with a non-phosphate detergent solution.
- Rinse with distilled/deionized water.
- If metals are among site chemicals of concern - Rinse with 10% nitric acid and then rinse with distilled/deionized water. If no samples are being collected for metals analysis, skip this step.
- Use the appropriate solvent rinse(s) if the sample will be analyzed for organics. Refer to Attachment 1 for the appropriate decontamination steps for the known or suspected chemicals of concern cross-referenced by EPA SW 846 analytical numbers. **The decontamination procedure for EPA Method 8270 shall be employed as the organic compound decontamination procedure if samples are being collected for more than one type of organic analysis.**
- Air dry the equipment completely.
- Rinse again with distilled/deionized water.
- Dispose of all rinse and decontamination fluids in an appropriate manner in accordance with specifications in the Remedial Action Work Plan.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing, before commencement of sampling and between sampling

<b>TITLE:</b> Decontamination	<b>NO.:</b> SW-E/I-506-0
	<b>PAGE</b> 6 of 8

locations.

#### 6.5.6 Standard Procedure for Large Equipment Decontamination

Steam cleaning is the method of choice for large equipment decontamination. The pressurized fluid stream provides effective physical contaminant removal that can be rapidly applied to both large areas and small, hard to reach areas. Detergents and water soluble solvents such as isopropanol can be added to the steam cleaning water reservoir as required for the chemicals of concern. The use of this procedure does require the use and/or construction of containment devices for the capture of the solids and rinsates generated during the process. Tubs such as plastic wading pools can be placed under smaller equipment to catch runoff.

The decontamination process for larger equipment such as drilling rigs require the construction of containment areas to capture the runoff. The design of this containment area can be as simple or as elaborate as frequency-of-use and chemicals of concern dictate. A simple containment area can be constructed from landscaping timbers and a waterproof pool tarp. A sloped, hard surface such as a paved portion of parking lot should be used to keep the tarp from tearing due to differential settling of the heavy equipment. The landscaping timbers should be arranged in a squared off "U" with the open side on the uphill side of the area. The "U" structure should be wide enough to allow decontamination workers to move freely around the equipment being decontaminated. The tarp is then draped over the timbers and pulled in tight against the inside side of the landscaping timbers to form a flat working area. Heavy duty staples can be used to secure the tarp to the outer sides of the landscaping timbers. The heavy equipment or portion (such as the bucket of an excavator) that requires decontamination is placed in the area and steam cleaned as appropriate. Drill rigs are usually backed in since the rear of the truck normally requires the most decontamination. The solids and rinsate from the cleaning process will accumulate on the lower side of the tarp. Liquids can be bailed or pumped (using a sump pump) into the appropriate drum or tank. Solids can be shoveled into the appropriate drum or roll-off container. Plastic "walls" can be erected using wooden frames should more complete spray containment be required.

Should site conditions or traffic volume require, a more elaborate decontamination facility can be constructed by digging a sloped excavation, placing an impermeable liner and sump pump, and backfilling with gravel. The vehicles requiring decontamination can then be driven on from one end, cleaned, and driven out the other side.

**It should be noted that steam cleaning can create exposure conditions for workers due to both splashing and inhalation. Refer to your health and safety plan for proper personal protection requirements.**

#### 6.5.7 Sanitizing Procedures

Reusable clothing and other personal articles must be decontaminated and sanitized before reuse. If practical, reusable protective clothing should be machine washed after a thorough decontamination. Otherwise, clean the clothing by hand.

### 6.6 QUALITY ASSURANCE

<b>TITLE:</b> <b>Decontamination</b>	<b>NO.:</b> <b>SW-E/I-506-0</b>
	<b>PAGE</b> <b>7 of 8</b>

The effectiveness of any decontamination method used at a site should be assessed at the beginning of a project periodically throughout the life of a project. Visual observation, equipment blanks, and wipe sampling are the typical methods that can be employed to determine the effectiveness of decontamination. Equipment blanks are collected by capturing analyte free water which is poured over sampling equipment after decontamination. These samples are normally included in the task-specific SAP as part of the project Quality Control program. Refer to your Field Sampling Plan for equipment blank collection frequency.

The Site Safety & Health Officer shall monitor project procedures to determine their effectiveness.

The Project Chemist shall monitor the effectiveness of decontamination procedures by evaluating the results of equipment rinsate blanks. Equipment rinsate blanks are samples of analyte-free water that are brought into contact with decontaminated equipment prior to collection in sample bottles. If contaminants of concern are detected when equipment blanks are analyzed, insufficient equipment decontamination is indicated and procedures shall require modification.

If a decontamination method is not considered effective, the decontamination program must be revised.

Visual observation, wipe sampling, cleaning solution analysis, and permeation testing are the typical methods used to determine the effectiveness of decontamination.

## 6.7 DISPOSAL METHODS

All equipment used for decontamination must be decontaminated and/or disposed of properly. Buckets, brushes, PPE, tools, and other contaminated equipment should be collected, placed in containers, and labeled. All spent solutions and wash water should be collected and disposed of properly. PPE that is not completely decontaminated should be placed in plastic bags, pending further decontamination and/or disposal. Refer to SW-MWD-505-0, Cuttings and Fluids Management, for specific instructions regarding the handling and disposition of these materials.

**7.0 ATTACHMENTS**

Attachment 1 - DECONTAMINATION FOR ORGANICS BY ANALYTICAL METHOD

<b>EPA ANALYTICAL METHOD NUMBER</b>	<b>DECONTAMINATION STEPS</b>
8010 <b>HALOGENATED VOLATILES</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with solution of 90% Ethyl Acetate and 10% Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8015 <b>NON-HALOGENATED VOLATILES</b>	<ol style="list-style-type: none"> <li>1. Rinse with Isopropanol</li> </ol>
8020 <b>AROMATIC VOLATILES</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% MIBK</li> <li>2. Rinse with Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8080/8081 <b>ORGANOCHLORINE PESTICIDES/PCB</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with solution of 90% Ethyl Acetate and 10% Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8100 <b>TOTAL PETROLEUM HYDROCARBONS</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8150 <b>CHLORINATED HERBICIDES</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8240/8260 <b>VOLATILE ORGANICS</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>
8250/8270 <b>SEMIVOLATILE EXTRACTABLE ORGANICS</b>	<ol style="list-style-type: none"> <li>1. Rinse with mixture of 90% Hexane and 10% Ethyl Acetate</li> <li>2. Rinse with solution of 90% Ethyl Acetate and 10% Isopropanol</li> <li>3. Rinse with distilled/deionized water</li> </ol>



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

**TITLE:**

**Field Notebook Content and Control**

**NO.:**

**SW-MWD-507-0**

**PAGE**

**1 of 8**

**DATE:**

**May 1999**

**APPROVED:**

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Project Engineer

**1.0 PURPOSE**

The objective of this Standard Operating Procedure (SOP) is to set criteria for content entry and form of field notebooks for the FUSRAP Maywood Superfund Site.

**2.0 SCOPE**

This procedure presents the proper methods of using and maintaining field notebooks for site operations for the Maywood Project.

**3.0 REFERENCES**

Nielsen Environmental Field School, Field Notebook Guidelines, 1997.

**4.0 DEFINITIONS**

*Biota* - The flora and fauna of a region.

*Decontamination* - To remove contaminants from field sampling equipment that might bias analytical results.

**5.0 RESPONSIBILITIES**

**5.1 Project Manager**

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified to perform required work.

<b>TITLE:</b>  Field Notebook Content and Control	<b>NO.:</b> SW-MWD-507
	<b>PAGE</b> 2 of 8

## **5.2 Project Engineer**

Translates client's requirements into technical direction of project. Reviews and approves technical progress, ensures that the Project Superintendent has been properly briefed and is prepared for the task.

## **5.3 Site Safety and Health Officer**

All field activities must be carried out in accordance with the SSHP. The Site Safety and Health Officer is responsible for ensuring that all site workers (Stone & Webster and subcontractors) have read, signed and are familiar with the requirements of the SSHP and that the requirements of the SSHP are met during site activities.

## **5.4 Project Superintendent**

The Project Superintendent is the individual designated by the Project Manager to supervise investigative activities by Stone & Webster and related subcontracting personnel at a given site for the designated tasks. The Project Superintendent is responsible for ensuring that the field personnel have been briefed on maintenance of the field notebook in accordance with the project requirements, this SOP, and related SOPs. He or she assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin, and that all necessary personnel are mobilized on time. The Project Superintendent maintains a daily log of activities each work day.

The Project Superintendent coordinates and consults with the Project Manager on decisions relative to unexpected encounters during field investigations and deviations from this SOP.

## **5.5 Site Personnel**

Site personnel assigned to maintain the field notebook will be trained in the proper techniques for conducting the work. They are required to read and sign the site-specific SSHP and to follow the procedures in this SOP, unless superseded by other project-specific requirements. All site operations, including deviations to SOPs, will be recorded in field notebooks during on-site activities.

# **6.0 PROCEDURES**

## **6.1 General**

Each site or operation, as applicable, will have one current site logbook, which will serve as an index of all activities performed at the site. It is initiated at the start of the first on-site activity (e.g., initial reconnaissance survey). Summary entries are made for every day that on-site activities take place. The details of all field activities shall be recorded in a separate field notebook. These field notebooks and the site logbook shall be made part of the project

<b>TITLE:</b>  <b>Field Notebook Content and Control</b>	<b>NO.:</b> SW-MWD-507
	<b>PAGE</b> 3 of 8

files.

Information recorded in field notebooks include observations, data, calculations, time, weather, description of the data collection activity, methods, instruments, and results. Additionally, the field notebook may contain descriptions of wastes, biota, geologic material, and site features including sketches, maps, or drawings as appropriate.

## **6.2 Equipment and Materials**

- Site logbook
- Site-specific plans
- Hard-covered, waterproof field notebook(s)
- Indelible black ink pen
- Ruler or similar scale (in some circumstances)

## **6.3 Preparation**

In addition to this SOP, site personnel responsible for maintaining field notebooks must be familiar with other SOPs pertinent to the task at hand. These should be consulted as necessary to obtain specific information about equipment and supplies, health and safety, sample collection, packaging, decontamination, and documentation.

The field notebook is assigned to an individual responsible for its care and maintenance.

Field notebooks shall be bound with lined, consecutively numbered pages. All pages must be numbered prior to initial use of the field notebook. The following information shall be recorded inside the front cover of the field notebook:

- Person and organization to whom the book is assigned, and phone number(s)
- Start date
- Project Name
- Stone & Webster Job Number
- Project Superintendent's Name
- Sequential Book Number (if applicable)

The first five pages of the field notebook shall be reserved for a table of contents. Mark the first page with the heading and enter the following:

TITLE:  Field Notebook Content and Control	NO.:	SW-MWD-507
	PAGE	4 of 8

### TABLE OF CONTENTS

Date/Description	Page
(Start Date/Reserved for TOC)	1-5

The remaining pages of the Table of Contents will be designated as such with "TOC" written on the top center of each page.

#### 6.4 Operation

The following is a list of requirements that must be followed when using a field notebook:

- Record work, observations, quantities of materials, calculations, drawings, and related information directly in the field notebook. If data-collection forms are specified by an activity-specific work plan, this information need not be duplicated in the field notebook. However, any forms used to record site information must be referenced in the field notebook.
- Information should be factual and unbiased.
- Do not start a new page until the previous one is full or has been marked with a single diagonal line so that additional entries cannot be made. Use both sides of each page.
- Write in black, indelible ink. Do not write in pencil unless working in wet conditions.
- Do not erase or blot out any entry at any time. Before an entry has been signed and dated, changes may be made but care must be taken not to obliterate what was written originally. Indicate any deletion by a single line through the material to be deleted. A change should be initiated and coded using one of the common data error codes shown in Table 1. All error codes should be circled.
- Do not remove any pages from the book.
- Do not use loose paper and copy into field notebook later.
- Record as much information as possible.
- All entries should be neat and legible.

Specific requirements for field notebook entries include:

<b>TITLE:</b>  Field Notebook Content and Control	<b>NO.:</b> SW-MWD-507
	<b>PAGE</b> 5 of 8

- Initial and date each page.
- Sign and date the final page of entries for each day.
- Initial and date all changes.
- Multiple authors must sign out the field notebook by inserting the following:

Above notes authored by:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Sign name)  
(Print name)  
(Date)

- A new author must sign and print his/her name before additional entries are made.
- Draw a diagonal line through the remainder of the final page at the end of the day.
- Record the following information on a daily basis:
  - a) Date and time
  - b) Name of individual making entry
  - c) Description of activity being conducted including station (i.e., well, boring, sampling, location number) if appropriate
  - d) Unusual site conditions
  - e) Weather conditions (i.e., temperature, cloud cover, precipitation, wind direction, and speed) and other pertinent data
  - f) People on site
  - g) Level of personnel protection to be used
  - h) Arrival/departure of site visitors
  - i) Arrival/departure of equipment
  - j) Sample pickup (chain-of-custody form numbers, carrier, time)
  - k) Sampling activities/sample logsheet numbers
  - l) Start or completion of borehole/trench/monitoring well installation or sampling activity
  - m) Health and Safety issues
  - n) Instrumentation calibration details

Entries into the field notebook shall be preceded with the time of the observation. The time should be recorded frequently and at the point of events or measurements that are critical to the activity being logged. All measurements made and samples collected must be recorded unless they are documented by automatic methods (e.g., data logger) or on a separate form required by an operating procedure. In these cases, the field notebook must reference the automatic data record or form.

<b>TITLE:</b>  <b>Field Notebook Content and Control</b>	<b>NO.:</b> SW-MWD-507
	<b>PAGE</b> 6 of 8

While sampling, record observations such as color and odor. Indicate the locations from which samples are being taken, sample identification numbers, the order of filling bottles, sample volumes, and parameters to be analyzed.

A sketch of the station location may be warranted. All maps or sketches made in the field notebook should have descriptions of the features shown and a direction indicator. It is preferred that maps and sketches be oriented so that north is towards the top of the page.

Other events and observations that should be recorded include (but are not limited to):

- Changes in weather that impact field activities
- Subcontractor activities
- Deviations from procedures outlined in any governing documents. Also record the reason for any noted deviation.
- Problems, downtime, or delays.
- Upgrade or downgrade of personnel protective equipment.

## **6.5 Post-Operation**

To guard against loss of data due to damage or disappearance of field notebooks, copies of completed pages shall be periodically and securely stored by the project. Documents which are separate from the field notebook shall be copied and submitted regularly and as promptly as possible to the project files. This includes all automatic data recording media (print-outs, logs, disks or tapes) and activity-specific data collection forms required by other SOPs.

At the conclusion of each activity or phase of site work, the individual responsible for the field notebook will ensure that all entries have been appropriately signed and dated, and that corrections were made properly (single lines drawn through incorrect information, then initialed, coded, and dated). The completed field notebook shall be submitted to the project records file.

## **7.0 RESTRICTIONS/LIMITATIONS**

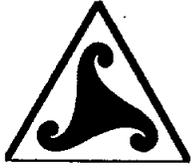
Field notebooks constitute the official record of on-site technical work, investigations, and data collection activities. Their use, control, and ownership is restricted to activities pertaining to specific field operations carried out by Stone & Webster personnel and their subcontractors. They are documents that may be used in court to indicate and defend dates, personnel, procedures, and techniques employed during site activities. Entries made in these notebooks should be factual, clear, precise, and as non-subjective as possible. Field notebooks, and entries within, are not to be utilized for personal use.

<b>TITLE:</b>  <b>Field Notebook Content and Control</b>	<b>NO.:</b> SW-MWD-507
	<b>PAGE</b> 7 of 8

**TABLE 1 COMMON DATA ERROR CODES**

- RE** Recording Error
- CE** Calculation Error
- TE** Transcription Error
- SE** Spelling Error
- CL** Changed for Clarity
- DC** Original Sample Description Changed After Further Evaluation
- WO** Write Over
- NI** Not Initialed and Dated at Time of Entry
- OB** Not Recorded at the Time of Initial Observation

All Error Codes should be circled



**STANDARD OPERATING PROCEDURE  
FUSRAP MAYWOOD SUPERFUND SITE  
STONE & WEBSTER ENGINEERING CORPORATION**

**TITLE:**

**Procedure for Shipping Radiologically  
Contaminated Environmental Samples**

**NO.:** SW-MWD-508-0

**PAGE:** 1 of 4

**DATE:** May 1999

**APPROVED:**

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Project Engineer

## **1.0 PURPOSE**

This procedure presents the proper method for shipping low level radiologically contaminated environmental samples at the FUSRAP Maywood Superfund Site.

## **2.0 SCOPE**

This procedure applies to excepted packages for limited quantities of radioactive materials as defined in 49 CFR 173.421.

## **3.0 REFERENCES**

49 CFR Parts 171 and 173 of the Transportation Regulations

## **4.0 DEFINITIONS**

None

## **5.0 RESPONSIBILITIES**

### **5.1 Project Manager**

Sets technical capability requirement criteria for personnel and ensures that personnel assigned to project tasks are properly qualified to perform required work.

<b>Title:</b> <b>Procedure for Shipping Radiologically Contaminated Environmental Samples</b>	<b>No.: SW-MWD-508-0</b>
	<b>PAGE: Page 2 of 4</b>

## **5.2 Project Engineer**

Translates client's requirements into technical direction of project. Reviews and approves technical progress, ensures that the Project Superintendent has been properly briefed and is prepared for the task.

## **5.3 Site Safety and Health Officer**

All field activities must be carried out in accordance with a site-specific SSHP. The Site Safety and Health Officer is responsible for ensuring that all site workers (Stone & Webster and subcontractors) have read, signed and are familiar with the requirements of the SSHP and that the requirements of the SSHP are met during site activities.

## **5.4 Project Superintendent**

The Project Superintendent is the individual designated by the Project Manager to supervise investigative activities by Stone & Webster and related subcontracting personnel at a given site for the designated tasks. The Project Superintendent is responsible for ensuring that the field personnel have been briefed on shipping samples in accordance with the project requirements, this SOP, and related SOPs. He or she assures that all necessary equipment including safety equipment is available and functioning properly before project operations begin, and that all necessary personnel are mobilized on time. The Project Superintendent maintains a daily log of activities each work day.

The Project Superintendent coordinates and consults with the Project Manager on decisions relative to unexpected encounters during field investigations and deviations from this SOP.

## **5.5 Site Personnel**

Site personnel assigned to ship radiologically contaminated environmental samples will be trained in the proper techniques for conducting the work. They are required to read and sign the site-specific SSHP and to follow the procedures in this SOP, unless superseded by other project-specific requirements. All shipping activities, including deviations to this SOP, will be recorded in field logbooks during on-site activities.

## **6.0 PROCEDURES**

This section outlines the method for shipping limited quantities of radioactive materials as defined in 49 CFR 173.421.

### **6.1 Determining if the Package is an Excepted Package for Limited Quantities of Radioactive Materials**

A package can be shipped as an excepted package for limited quantities of radioactive materials if the following requirements are met:

- 1) The activity does not exceed the limits specified in 49 CFR 173.421.
- 2) The package meets the general design requirements specified in 49 CFR 173.410.
- 3) The exposure rate at any point on the external surface of the package does not exceed 0.5 mR/hour.
- 4) The removable radioactive surface contamination on the external surface of the package does not exceed 22 dpm/cm<sup>2</sup> for beta, gamma, and low toxicity alpha emitters, or 2.2 dpm/cm<sup>2</sup> for all other alpha emitting radionuclides.
- 5) The package does not contain more than 15 grams of <sup>235</sup>U.

## **6.2 Package Shipment**

Package shipment consists of the following steps:

- 1) A cooler which conforms to the general design requirements in 49 CFR 173.410 will be used for shipment. Prior to shipment, the cooler must be prepared so that no leakage during shipment can occur. All valves on the cooler will be securely duct taped, both inside and outside the cooler and the cooler will be lined with either plastic or a large garbage bag.
- 2) All sample bottles will be placed in separate zip-lock bags before being placed in the cooler.
- 3) When placing sample bottles in the cooler, the less contaminated samples will be placed toward the outside of the cooler, and the more contaminated samples will be placed near the center of the cooler. Packing material will be placed above and below the samples.
- 4) When shipping more than one cooler, the more highly contaminated samples will be distributed among several coolers.
- 5) After the cooler is filled, the plastic or garbage bag will be closed and securely taped. A sticker which reads "Radioactive" will be placed on the outside of the garbage bag (or plastic).
- 6) A notice with the following information will be placed inside a zip-lock bag and taped to the inside of every cooler:

**Title:**

**Procedure for Shipping Radiologically Contaminated  
Environmental Samples**

**No.: SW-MWD-508-0**

**PAGE: Page 4 of 4**

“This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive materials, limited quantity, N.O.S., UN 2910. If you have questions, call \_\_\_\_\_.” (The cosigner’s or consignee’s name, address, and phone number will follow this statement.)

- 7) Once the cooler is completely packed, the outside of the cooler will be thoroughly wiped with damp paper towels. The cooler will then be scanned with a sodium iodide (NaI) 1” x 1” detector to ensure that the exposure rate along the external surface of the package does not exceed 0.5 mR/hour. All external surfaces of the cooler will be scanned including the top, sides, and bottom.
- 8) If the exposure rate at the surface of any cooler exceeds 0.5 mR/hour, the cooler will be repacked with additional packing material and/or the samples bottles will be further segregated so that more highly contaminated samples are placed into separate coolers. If the surface activity still exceeds 0.5 mR/hour, the cooler will not be shipped and the company health physicist will be consulted for assistance.

**APPENDIX F**

**Excavation Work Permit and Hazardous Work Permit**

# EXCAVATION PERMIT

FMSS-  
EP-SWALE - 2000 - 001

Date 12.27.99

LOCATION AND DESCRIPTION OF EXCAVATION  
EXCAVATION & RE-ESTABLISHMENT OF DRAINAGE SWALE  
IN MAYWOOD, NJ.

PRECAUTIONS/HOLDPOINTS REFER TO PROTOCOL FOR DETAILS.

**PART I - FOR ALL EXCAVATING THAT REASONABLY MAY BE EXPECTED TO ENCOUNTER SEWER, TELEPHONE, FUEL, ELECTRIC, WATER LINES OR ANY OTHER UNDERGROUND INSTALLATION.**

- Local utility company(s) contacted.
- Additional subsurface scanning performed.
- Utilize Part II of Excavation Permit as an initial planning tool.

Shawn M. Andrews  
PRINTED NAME

EMPLOYEE NO.

[Signature]  
SIGNATURE (i.e., STR, FE, SS)

12.23.99  
DATE

**PART II - FOR EXCAVATION EXCEEDING 4 FEET IN DEPTH AND REQUIRES PERSONNEL ENTRY**

Complete back side of the permit for daily inspection.

**EXCAVATION PERMIT NO.** FMSS-SWATE - 2000 - 001

Must be dated with today's date before entry is authorized.

Inspection	Date/ Initial												
Excavations show no sign of soil cracks, sloughing, cave-in, or other movement.													
Water seepage will not endanger personnel or cause cave-in.													
Protective systems are in place and are sound.													
Adjacent structures are shored appropriately.													
Slopes are as designed and are not moving.													
Safety barriers are in place per safety requirements.													
Bridges and ramps are appropriate and meet requirements.													
An access/egress is located every 25 feet (for vertical cuts $\geq 4$ feet)													
Equipment location relative to excavation is safe.													
Equipment is grounded appropriately.													
Vehicular traffic control is planned.													
Shoring and/or shielding systems as required.													
Soil, debris, tools, etc., are set back a minimum of 2 feet from the edge of the excavation.													
If the excavation is a confined space, air has been checked and entry is approved.													
Utilities are protected and shored or braced as appropriate.													
Unknown utilities are identified (i.e., subsurface scanning as required).													
Hazardous soil conditions are checked when potential danger exists.													
Work is frequently monitored during progress to verify <ul style="list-style-type: none"> <li>- proper use of protective systems</li> <li>- vehicular traffic management</li> <li>- equipment and personnel interface</li> <li>- care around utilities</li> <li>- safe work habits</li> <li>- safety barrier use</li> </ul>													

Shawn M. Andrews  
 PRINTED NAME

\_\_\_\_\_  
 EMPLOYEE NO.

[Signature]  
 SIGNATURE

12-27-99  
 DATE

# FMSS HAZARDOUS WORK PERMIT (HWP)

NO. 9 9 0 0 0 9

Revision Number

Technical Work Document Number:

Work Description:

## SPECIAL OPERATIONS

REMEDIATION OF HOWCROFT SWALE TO INCLUDE:

Soil excavation activities; associated support activities.

WORK LOCATION:

MISS RESTRICTED AREA

Est. Start Date/Time 2-1-00/0700

Termination Date

Requested by Dan Samela

Request Date 12-23-99

### HAZARDOUS CONDITIONS

Is a Radiological/ALARA Review Required? No  Yes  (see Rad Con 312)

>1 mg/m3 DUST	Exposure Rate: 5 mR/hr @ 30cm	To be monitored initially and	General Area Exposure Rate: <1 mR/hr
> 10 % LEL	Loose Alpha: 1000 dpm/100cm2	periodically	Loose Alpha Activity: < 200 dpm/100cm2
19.5 - 21.5 % OXYGEN	Limiting Isotope: TH 232		Rad Soil Concentration: <150 pCi/gm
> 5 PPM VOC	Limiting DAC: 1E-12 uCi/ml		
	DAC Limit: 5E-13 uCi/ml		

### REQUIRED PERSONAL PROTECTIVE CLOTHING & EQUIPMENT

Head/Eyes	Feet/Legs	Body
<input checked="" type="checkbox"/> Hard Hat <input checked="" type="checkbox"/> Safety Glasses <input type="checkbox"/> Monogoggles <input type="checkbox"/> Face Shield <input type="checkbox"/> Other (specify)	<input checked="" type="checkbox"/> Sturdy Work Shoes <input checked="" type="checkbox"/> Disposable shoe covers <input type="checkbox"/> Other (Specify):	<input type="checkbox"/> Cotton Coveralls <input checked="" type="checkbox"/> Tyvek Coveralls (Regular) <input type="checkbox"/> Tyvek Coveralls (Coated) <input type="checkbox"/> Other (Specify)
Respiratory	Hands	Miscellaneous
<input type="checkbox"/> Full Face (Negative Pressure) * <input type="checkbox"/> Powered Air Purifying * Specify Cartridge or Canister Type Below <input type="checkbox"/> Other (specify)	<input checked="" type="checkbox"/> Cotton Work Gloves <input checked="" type="checkbox"/> Latex Gloves <input type="checkbox"/> Rubber Gloves <input type="checkbox"/> Other (Specify):	<input checked="" type="checkbox"/> Tape Gloves & Boots to Coveralls <input type="checkbox"/> Fall Protection <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Other (Specify)

### SPECIAL INSTRUCTIONS / REQUIREMENTS AND LIMITING HAZARDOUS CONDITIONS

<input type="checkbox"/> MSDS <input type="checkbox"/> Firewatch <input type="checkbox"/> Portable Fire Extinguisher <input type="checkbox"/> Tagging and Lockout <input type="checkbox"/> Confined Space Entry Permit <input type="checkbox"/> Pre-Entry Monitoring <input type="checkbox"/> Emergency Response Equipment <input type="checkbox"/> Hand-Held Radio Communication <input checked="" type="checkbox"/> Portable Eyewash Station <input checked="" type="checkbox"/> "Buddy System" in effect <input checked="" type="checkbox"/> Job Coverage by Safety and Health Personnel <input type="checkbox"/> Special training <input checked="" type="checkbox"/> Excavation Permit <input type="checkbox"/> Fire Retardant Clothing <input type="checkbox"/> Special Personnel Frisking Consideration <input type="checkbox"/> Special Dose or Contamination Reduction Considerations <input type="checkbox"/> Stay Time Controls <input checked="" type="checkbox"/> Other (Specify) FIRST AID KIT	<b>Required Engineering Controls (Specify):</b> 1. Work area shall be posted as an RMA prior to beginning work. 2. Only RWT trained workers may handle contaminated materials. 3. Excavated soils shall be captured on plastic sheeting or equivalent if not loaded directly into trucks. 4. Real time organic vapor and LEL monitoring shall be conducted initially upon surface breach and periodically throughout the course of excavation. 5. RPT shall provide continuous HP/IH coverage. 5. Full dress (tyvek) required for all manual labor activities inside work area; all other entries may be made with shoe covers/gloves. 6. Work area shall be surveyed and downposted accordingly at completion of task.	<table border="1"> <thead> <tr> <th>Dosimetry</th> <th>Indiv.</th> <th>Group</th> </tr> </thead> <tbody> <tr> <td>TLD Badge</td> <td>X</td> <td></td> </tr> <tr> <td>Extremity TLD</td> <td></td> <td></td> </tr> <tr> <td>Other (Specify):</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <th>Air Monitoring</th> <th>Indiv.</th> <th>Work Area</th> </tr> <tr> <td>Lapel-Breathing Zone</td> <td>X</td> <td></td> </tr> <tr> <td>Dust</td> <td></td> <td>X</td> </tr> <tr> <td>Low Volume</td> <td></td> <td>X</td> </tr> <tr> <td>PID &amp; 4 GAS</td> <td></td> <td>X</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Expiration Date/Time</td> <td colspan="2">3-31-00/2400</td> </tr> <tr> <td>Comments:</td> <td colspan="2"></td> </tr> <tr> <td></td> <td colspan="2"></td> </tr> <tr> <td></td> <td colspan="2"></td> </tr> </tbody> </table>	Dosimetry	Indiv.	Group	TLD Badge	X		Extremity TLD			Other (Specify):						Air Monitoring	Indiv.	Work Area	Lapel-Breathing Zone	X		Dust		X	Low Volume		X	PID & 4 GAS		X				Expiration Date/Time	3-31-00/2400		Comments:								
Dosimetry	Indiv.	Group																																													
TLD Badge	X																																														
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PID & 4 GAS		X																																													
Expiration Date/Time	3-31-00/2400																																														
Comments:																																															

Approval	Date	Termination	Date
Site RSO 	12-23-99	Site RSO or SSHO	
SSHO 	12-23-99	Reason:	

## **APPENDIX G**

### **CQCP Checklists**

- Mobilization
- Utility Clearance
- Instrument Calibration
- Surveying
- Field Decontamination
- Demobilization/Decontamination
- Data Management
- Field Safety
- Sample Collection
- Packaging, Storing, and Shipment of Samples

### MOBILIZATION CHECKLIST

Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the Field Representative prior to mobilization to the site and reviewed by the CQCSM/PM.

Yes   No   NA

#### Site Access And Security

Has a copy of the Right-of-Entry Permit been received from the offsite landowner?  Yes  No  NA

Are the time frames on the Right-of-Entry Permits adequate for the entire job, including IDW disposal?  Yes  No  NA

Exp: \_\_\_\_\_

#### Permits And Licenses

Are all subcontractors licensed to operate in New Jersey?  Yes  No  NA

Exp: \_\_\_\_\_

Are license numbers of subcontractors recorded in the project files?  Yes  No  NA

Exp: \_\_\_\_\_

Have subcontractors provided proof of insurance?  Yes  No  NA

Exp: \_\_\_\_\_

Have variances been obtained for flush-mount wells?  Yes  No  NA

Exp: \_\_\_\_\_

Have variances been obtained for double-cased wells having less than 20 feet of surface casing?  Yes  No  NA

Exp: \_\_\_\_\_

Is geologist licensed?  Yes  No  NA

Exp: \_\_\_\_\_

Are contractors licensed?  Yes  No  NA

Exp: \_\_\_\_\_

Have well permits been obtained?  Yes  No  NA

Exp: \_\_\_\_\_

Has asbestos permit been obtained?  Yes  No  NA

Exp: \_\_\_\_\_

Have highway right-of-way permits been obtained?  Yes  No  NA

Exp: \_\_\_\_\_

Have work permits been obtained?  Yes  No  NA

Exp: \_\_\_\_\_

#### Safety Planning And Equipment

Has the SSHP been submitted to subcontractors for review?  Yes  No  NA

Exp: \_\_\_\_\_

Are all training certificates, including subcontractors, in a file to take to the field?  Yes  No  NA

Exp: \_\_\_\_\_

Are all training certificates current?  Yes  No  NA

Exp: \_\_\_\_\_

Are all MSDSs in a file to take to the field?  Yes  No  NA

Exp: \_\_\_\_\_

Has the PID been reserved?  Yes  No  NA

Exp: \_\_\_\_\_

Does the PID have the correct lamp?  Yes  No  NA

Exp: \_\_\_\_\_

Has the LEL meter been reserved?  Yes  No  NA

Exp: \_\_\_\_\_

Does the LEL meter have the correct sensors?  Yes  No  NA

Exp: \_\_\_\_\_

**MOBILIZATION CHECKLIST (Continued)**

- Are the detector tubes stored properly?
- Exp: \_\_\_\_\_
- Is calibration for detector tube pump current?
- Exp: \_\_\_\_\_
- Are any additional meters specified in SSHP reserved?
- Exp: \_\_\_\_\_
- Is personnel radiation monitoring in place?
- Exp: \_\_\_\_\_

**Construction**

- |   | <u>Yes</u>               | <u>No</u>                | <u>N/A</u>               |
|---|--------------------------|--------------------------|--------------------------|
| Does subcontractor's equipment onsite match the proposed equipment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |

**Logistical Planning**

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| Has notice to proceed from the USACE been received?                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Were the project personnel available and scheduled?                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Were the subcontractors' purchase orders complete?                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Has the laboratory agreed to the planned sample volume load?                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Has the sample container order been placed?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Have correct sample containers been received?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Has storm water management system been installed and is it ready for operation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |

**MOBILIZATION CHECKLIST (Continued)**

**Coordination With Federal, State, And Local Environmental Authorities**

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| Has CENWK approved the 100 Percent Construction Plans?                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____   |                          |                          |                          |
| Has USACE been notified of schedule?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____   |                          |                          |                          |
| Has the appropriate state agency been informed of the planned sampling events? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____   |                          |                          |                          |
| Has USEPA approved the 100 Percent Construction Specifications?                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____   |                          |                          |                          |
| Has USEPA been informed of the planned sampling events?                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____   |                          |                          |                          |

**Environmental Site Protection**

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| Are drilling and sampling locations accessible without destroying land resources?       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| If field activities destroy land resources, will measures be taken to restore the site? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |
| Are drillers aware of work areas and proper environmental site protection practices?    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exp: _____  |                          |                          |                          |

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM

Signature:: \_\_\_\_\_

Date \_\_\_\_\_

**UTILITY CLEARANCE CHECKLIST**

Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. To be completed by the Field Representative prior to mobilization to the site and reviewed by the CQCSM/PM.

**Utility Clearance**

**Yes   No   NA**

Has the PSE & G (1-201-342-7000) been notified and a utility meeting scheduled?

Exp: \_\_\_\_\_

Has a representative from each notified utility called to confirm the utility meeting?

Exp: \_\_\_\_\_

Was the PSE & G work authorization number recorded?

Exp: \_\_\_\_\_

Was the property owner asked about the existence of any underground utilities or tanks?

Exp: \_\_\_\_\_

If yes to above question, is report available?

Exp: \_\_\_\_\_

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_

Date \_\_\_\_\_

**INSTRUMENT CALIBRATION CHECKLIST**

**Sampling Date:**

**Monitoring Well Number(s):**

Answer each question by checking the appropriate column (yes, no, or N/A). If no or N/A are checked, an explanation should be provided in the space available. Complete daily.

**Instrument Calibration**

Were all field instruments calibrated properly?

Yes

No

N/A

Were all field instruments calibrated on the schedule in the Work Plan/SSHP?

Did the Field Calibration Forms list all calibration events?

List instruments used at the site:

If no or N/A to any of the above, state explanation: \_\_\_\_\_

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they have been implemented.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The CQCFE shall sign this checklist upon completion of all items on the checklist.

CQCFE Signature: \_\_\_\_\_

Date: \_\_\_\_\_

### SURVEYING CHECKLIST

Sampling Date: \_\_\_\_\_

Monitoring Well Number(s): \_\_\_\_\_

Answer each question by checking the appropriate column (yes, no, or N/A). If no or N/A are checked, an explanation should be provided in the space available. Complete daily.

**Surveying**

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Was the Scope of Work reviewed with the surveyor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the schedule for the work provided to the surveyor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were references of past work in file?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did surveyor submit QA/QC data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were all sample points surveyed by a licensed land surveyor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was each point surveyed for horizontal and vertical control?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the ground surface and top of casing surveyed for each monitoring well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were surveyor's closure calculations reviewed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was surveyor interviewed by CQCSM before leaving site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A to any of the above, state explanation:

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they have been implemented.

_____	_____
_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**FIELD DOCUMENTATION CHECKLIST**

Date: \_\_\_\_\_

Answer each question by checking the appropriate column (yes, no, or N/A). If no or N/A are checked, an explanation should be provided in the space available. Complete daily.

<u>Field Documentation</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Was all original field data, except boring logs, recorded in black indelible ink?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were log books filled out properly; accurately recounting the days events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were all field forms completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daily QC Records?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Log Books?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was field documentation forwarded to office for peer review and QC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were deficiencies reported to CQCSM/PM?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List additional field forms completed:			

If no or N/A to any of the above, state explanation:

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**DEMOBILIZATION DECONTAMINATION CHECKLIST**

**Date:** \_\_\_\_\_

Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the CQCSM.

<u>Equipment</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Was the drill rig and all drilling equipment decontaminated upon arrival; after each location; and before leaving the site? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was each decontamination event recorded in the logbook? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was IDW (decontamination water) properly handled? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
What equipment, other than drill rig and associated equipment, left the site today? Exp: _____			
Was each unit leaving site properly decontaminated? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>Personnel</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Did driller's personnel wear appropriate PPE during work? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was each decontamination event documented in the logbook? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did personnel wear proper PPE during decontamination of equipment? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_

Date \_\_\_\_\_

## DATA MANAGEMENT CHECKLIST

Sampling Date: \_\_\_\_\_

Laboratory Name & Project Number \_\_\_\_\_

Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the CQCSM on at least one data deliverable.

**Tracking Of Data Deliverable Receipt**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
Were due dates calculated? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the laboratory contacted regarding upcoming due dates? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were dates received recorded? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the laboratory contacted regarding late deliverables? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Field Samples Summary**

Was the COC checked for accuracy and completeness? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the cooler receipt received from the laboratory correct? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the laboratory contacted regarding problems with the COC or cooler receipt? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Laboratory Communication During Sample Analyses**

Did the laboratory provide a summary of sample log-in information (e.g., proper sample information and correct analytical assignments)? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the laboratory contacted frequently about sample analytical status or problems? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were problems properly addressed and/or corrected? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Initial Review Of Analytical Data Package (Hard Copy)**

Was data package reviewed for completeness (e.g., all sample results and lab QC information present, signed COC present)? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was data package reviewed for obvious errors or inconsistencies? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was laboratory contacted regarding any problems with the data package? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DATA MANGEMENT CHECKLIST (Continued)**

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_ Date \_\_\_\_\_

**FIELD SAFETY CHECKLIST**

**Work Location:**

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Reviewed work plans with project engineer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Requested maps of aboveground and underground utilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reviewed utility maps (water supply, firewater, sewer, process sewer, electric , gas, telephone, navigational, other underground facilities)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Met with facilities representative to review utility locations and asked each representative the following questions:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any underground utilities at work site location?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any on-going construction that would affect field activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any chemical releases associated with unit operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any other hazards associated with operating units?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any special requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Names of utilities and their representatives:

_____	_____
_____	_____
_____	_____
_____	_____

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Determine if any permits are required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type: _____			
Obtained necessary permits?	<input type="checkbox"/>	<input type="checkbox"/>	
Permit expiration date?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Requested MSDS for any onsite chemical or expected in the subsurface?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Client(s) established protocol, if any?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Comments:**

**Corrective Actions:**

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**SAMPLE COLLECTION CHECKLIST**

**Project Name/Number:** \_\_\_\_\_

**Boring/Monitoring Well Number:** \_\_\_\_\_

**Surface Soil/Sediment/Surface Water Sample Number(s):** \_\_\_\_\_

**Sampling Date:** \_\_\_\_\_

Complete daily for each boring, monitoring well, and surface soil, sediment and sampling location. For sediment and surface water samples, complete daily per site. Answer each question by checking the appropriate column (yes, no, not observed [N/O] or N/A). If a "no" is checked, provide an explanation on the Noncompliance Report and Corrective Action Request form.

**General**

	<u>Yes</u>	<u>No</u>	<u>N/O</u>	<u>N/A</u>
Were new protective gloves worn between sampling locations and/or intervals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples collected using methods described in the Work Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers filled in the correct order?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sampling equipment appropriate for the purpose and site conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were procedures for collecting QA/QC samples followed as per the Work Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sampling locations properly identified by land survey?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Groundwater for Chemical Analysis**

Were groundwater samples collected a minimum of one week after development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were groundwater parameters stable before sample collection (as per Work Plan)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were turbidity readings below 50 NTU?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was a ground water sampling report form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the analytical parameters and QA/QC samples recorded on the sampling report form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the CQCSM present during one entire sampling event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Corrective Actions:**

The CQCSM shall sign this checklist upon completion of all items.

CQCSM: \_\_\_\_\_ Date: \_\_\_\_\_

**PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST**

**Project Name/Number:** \_\_\_\_\_

**Boring/Monitoring Well Number:** \_\_\_\_\_

**Groundwater Sample Number(s):** \_\_\_\_\_

**Sampling Date:** \_\_\_\_\_

Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the CQCSM for each occurrence of the subject field activity.

**Packing, Storing, And Shipment Of Samples**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
Were the samples handled according to the SAP? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the samples stored on ice or in a refrigerator after collection? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the samples wrapped appropriately (e.g., bubble wrap) to prevent breakage during shipment? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the samples shipped with bagged ice or blue ice? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was a shipping label attached to the cooler? Exp: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they were implemented.

_____	_____
_____	_____
_____	_____

The CQCSM shall sign this checklist upon completion of all items on the checklist.

CQCSM Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX H**

### **TCRA Schedule/Design Drawings**

- **TCRAWP Schedule**
- **TCRA-1: Cover Sheet and Index to Drawings**
- **TCRA-2: Existing Site Layout Map**
- **TCRA-3: Site Preparation/Layout**
- **TCRA-4: Limits of Site Work**
- **TCRA-5: Miscellaneous Details**
- **TCRA-6: Construction Notes and Specifications**

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Weeks															
					-1	1	2	3	4	5	6	7	8	9	10	11	12			
0206-F00	Notice to Proceed	0	0	0		◆														
0206-F00	Site Preparation	5	5	0		■														
0206-F00	Mobilization	5	5	0		■														
0206-F10	Storm water pipe cleaning - by Maywood Township	5	5	0		■														
0206-F00	Bypass Drainage Swale Flow	2	2	0			■													
0206-F01	Soil Excavation & Transportation	8	8	0			■													
0206-F01	Swale Construction	6	6	0				■												
0206-F01	Site Restoration	4	4	0					■											
0206-F02	Demobilization	4	4	0						■										

Run Date 20JAN00

■ Early Bar  
 ■ Progress Bar  
 ■ Critical Activity

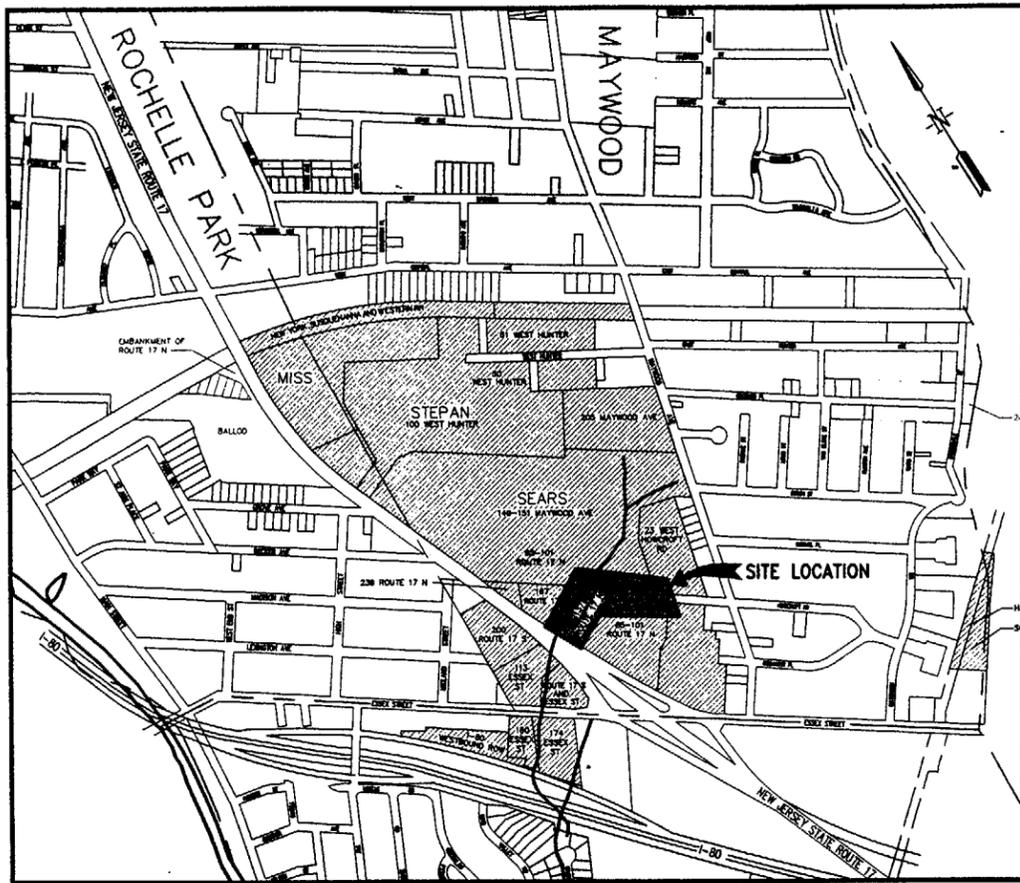
SW0B

Franklin Environmental Services  
 Time Critical Swale  
 Baseline Schedule

Sheet 1 of 1

Revision #0

Date	Revision	Checked	Approved



SITE LOCATION MAP

SCALE: 1" = 400'

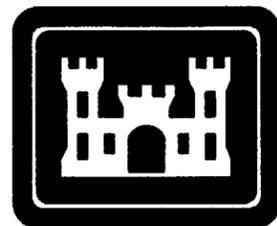
## INDEX TO DRAWINGS

DRAWING TITLE	DRAWING NO.
COVER SHEET AND INDEX TO DRAWINGS	TCRA-1
EXISTING SITE LAYOUT MAP	TCRA-2
SITE PREPARATION/LAYOUT	TCRA-3
LIMITS OF SITE WORK	TCRA-4
MISCELLANEOUS DETAILS	TCRA-5
CONSTRUCTION NOTES AND SPECIFICATIONS	TCRA-6
CONSTRUCTION NOTES AND SPECIFICATIONS	TCRA-7

# DESIGN DRAWINGS FUSRAP MAYWOOD SUPERFUND SITE DRAINAGE SWALE/TIME CRITICAL REMOVAL ACTION MAYWOOD, NEW JERSEY

PREPARED FOR

**U.S. ARMY  
CORPS OF ENGINEERS  
NEW YORK DISTRICT**



**FUSRAP**

U.S. Army Corps  
of Engineers  
NEW YORK DISTRICT

Symbol	Description	Revisions	Date
A	ORIGINAL ISSUE		

	Designed by: M. CHILNERA Date: 11/16/99	Approved: D. SAMELA, PE Date: 1/6/00	File Name: \\MAYWOOD\8575A05A.dwg
	Drawn by: C. BURSICH Date: 11/23/99		
	Reviewed by: A. BROWN, PE Date: 1/6/00		
	Project Number: 08575.0250		

U.S. ARMY ENGINEER DIVISION  
MAYWOOD, NEW JERSEY  
**FUSRAP**

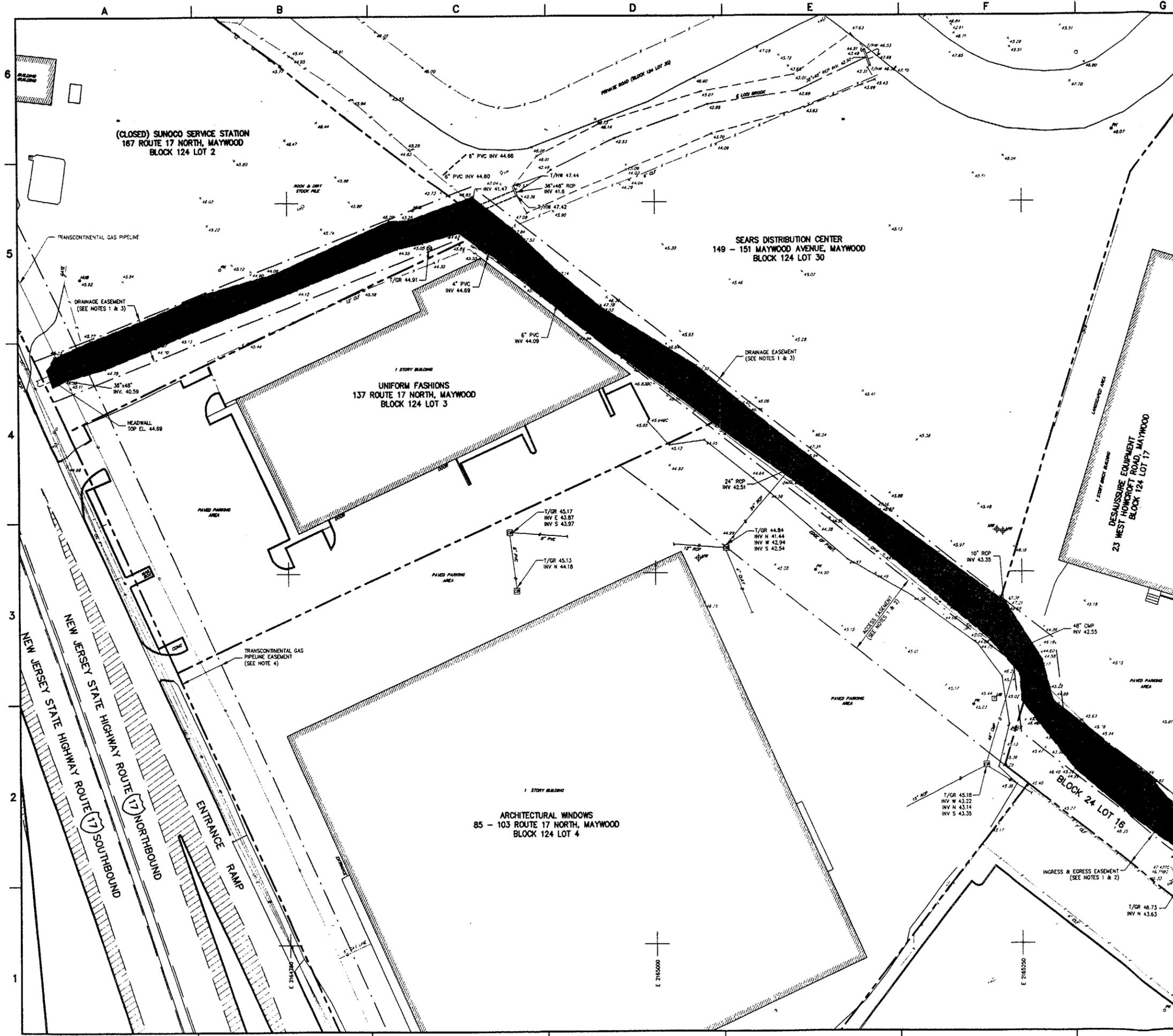
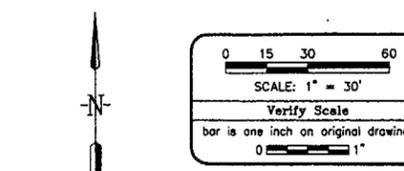
FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY  
COVER SHEET AND  
INDEX TO DRAWINGS

Project Number:  
08575.0250  
Drawing Number:  
**TCRA-1**

### LEGEND

	CONSERVATIVE AERIAL EXTENT OF PROPOSED REMOVAL ACTION (SEE NOTE 7)
	PROPERTY BOUNDARY
	APPROXIMATE EASEMENT LOCATION
	EXISTING SHALE AND LOON BROOK SLOPE CONTOURS
	CENTERLINE OF SHALE/LOON BROOK
	EXISTING POINT ELEVATION
	EXISTING CATCH BASIN
	EXISTING SNIP
	EXISTING CLEAN-OUT
	EXISTING MONITORING WELL
	BOTTOM OF CURB ELEVATION
	CHAIN LINK FENCE
	CORRUGATED METAL PIPE
	INVERT ELEVATION
	INVERT ELEVATION - NORTH SIDE
	INVERT ELEVATION - SOUTH SIDE
	INVERT ELEVATION - EAST SIDE
	INVERT ELEVATION - WEST SIDE
	LIGHT POST
	OVERHEAD WIRE
	PVC
	POLYVINYL CHLORIDE PIPE
	REINFORCED CONCRETE PIPE
	RM
	RM ELEVATION
	TC
	TOP OF CURB ELEVATION
	TOP OF GRATE ELEVATION
	T/HW
	TOP OF HEADWALL ELEVATION
	UB
	UNKNOWN BOX ELEVATION
	UP
	UTILITY POLE
	SM
	SURVEY MONUMENT

- ### NOTES
- EASEMENT LOCATION IS APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE DEEDS.
  - EASEMENT FOR INGRESS AND EGRESS.
  - EASEMENT FOR DRAINAGE.
  - TRANSCONTINENTAL EASEMENT - BOOK 3134, PAGE 414.
  - NUDOT SLOPE EASEMENTS - BOOK 1807, PAGE 10.
  - BOROUGH OF MAYWOOD 15' EASEMENT FOR TRUNK SEWER - BOOK 5705, PAGE 164, BOOK 3990, PAGE 502.
  - THIS IS A SUBSET OF THE ENTIRE AREA WITHIN WHICH CONTRACT WORK WILL OCCUR. SEE DRAWINGS NOS. 3 AND 4.
  - BLOCK 124 LOT 16 IS OWNED BY THE BOROUGH OF MAYWOOD.
  - THE HORIZONTAL DATUM IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM (NAD) 1927.
  - THE VERTICAL DATUM IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
  - THIS SURVEY SHOWS CONDITIONS AS OF OCTOBER 1999. THE DRAWING IS BASED ON AERIAL MAPPING PREPARED BY GEO CORP. AND GROUND SURVEY BY GARDEN STATE ENGINEERING SURVEYING & PLANNING.
  - THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO ACCURACY AND COMPLETENESS. CONTACT ALL APPROPRIATE UTILITY COMPANIES AND AGENCIES PRIOR TO ANY EXCAVATION.



Revision	Date	Description
1		ORIGINAL ISSUE

DESIGNED BY:	M. CHINEA	DATE:	11/16/99
DRAWN BY:	C. BURROGH	DATE:	11/19/99
REVIEWED BY:	A. BROWN	DATE:	1/6/00
APPROVED BY:	D. SAMUELA	DATE:	1/6/00

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

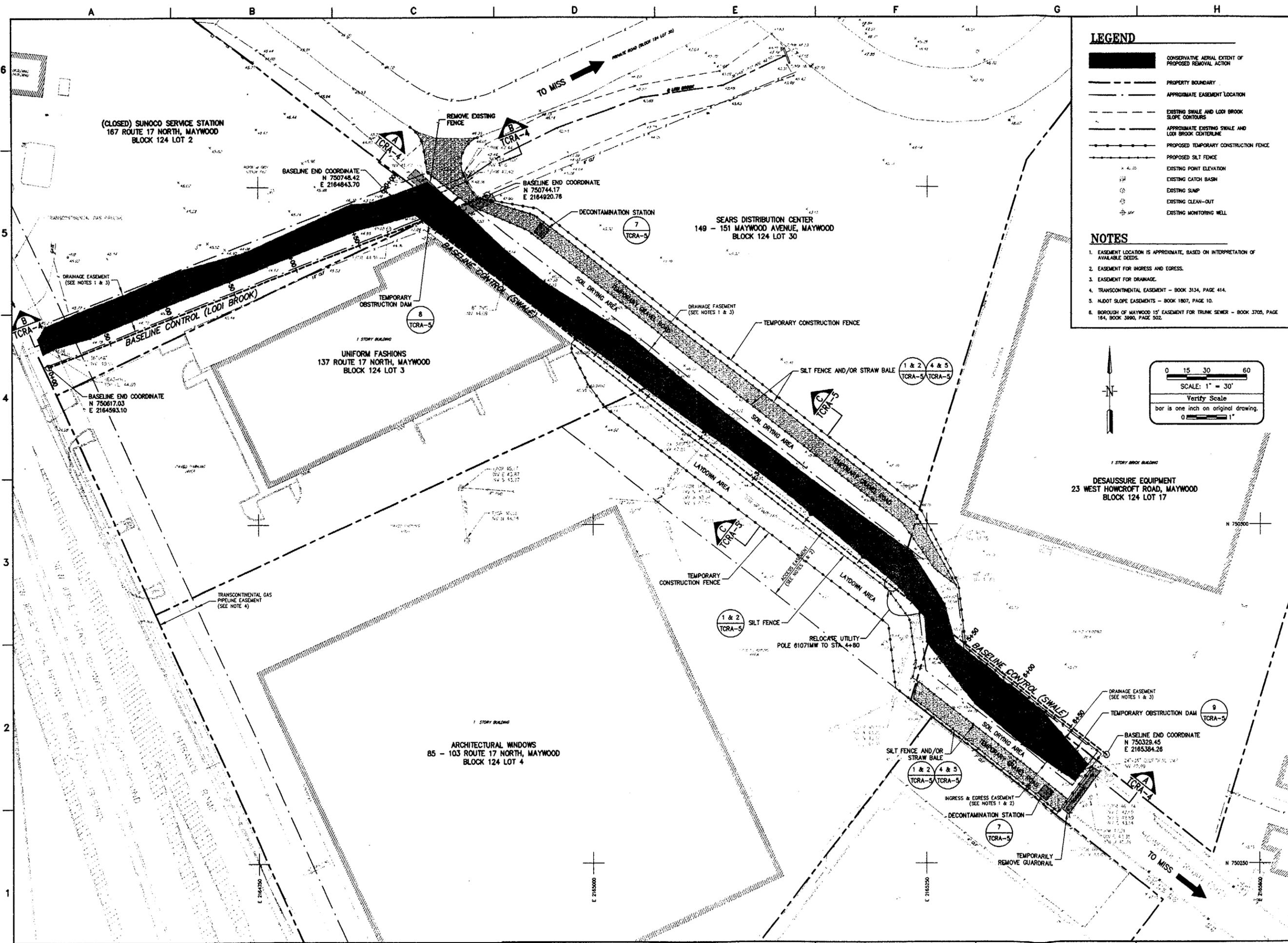
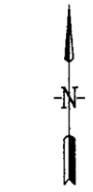
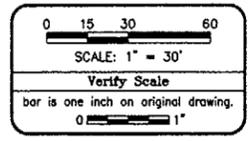
EXISTING SITE LAYOUT MAP

Contract Number: DACW11-99-D-9001  
Delivery Order Number: 08575.0250  
Drawing Number: TCRA-2

### LEGEND

- CONSERVATIVE AERIAL EXTENT OF PROPOSED REMOVAL ACTION
- PROPERTY BOUNDARY
- APPROXIMATE EASEMENT LOCATION
- EXISTING SWALE AND LODI BROOK SLOPE CONTOURS
- APPROXIMATE EXISTING SWALE AND LODI BROOK CENTERLINE
- PROPOSED TEMPORARY CONSTRUCTION FENCE
- PROPOSED SILT FENCE
- EXISTING POINT ELEVATION
- EXISTING CATCH BASIN
- EXISTING SUMP
- EXISTING CLEAN-OUT
- EXISTING MONITORING WELL

- ### NOTES
1. EASEMENT LOCATION IS APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE DEEDS.
  2. EASEMENT FOR INGRESS AND EGRESS.
  3. EASEMENT FOR DRAINAGE.
  4. TRANSCONTINENTAL EASEMENT - BOOK 3134, PAGE 414.
  5. HADOT SLOPE EASEMENTS - BOOK 1807, PAGE 10.
  6. BOROUGH OF MAYWOOD 15' EASEMENT FOR TRUNK SEWER - BOOK 3705, PAGE 184, BOOK 3990, PAGE 502.



NO.	DATE	DESCRIPTION	BY	CHKD.
1	1/16/99	ORIGINAL ISSUE		
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3				
4				
5				
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7				
8				
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STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES

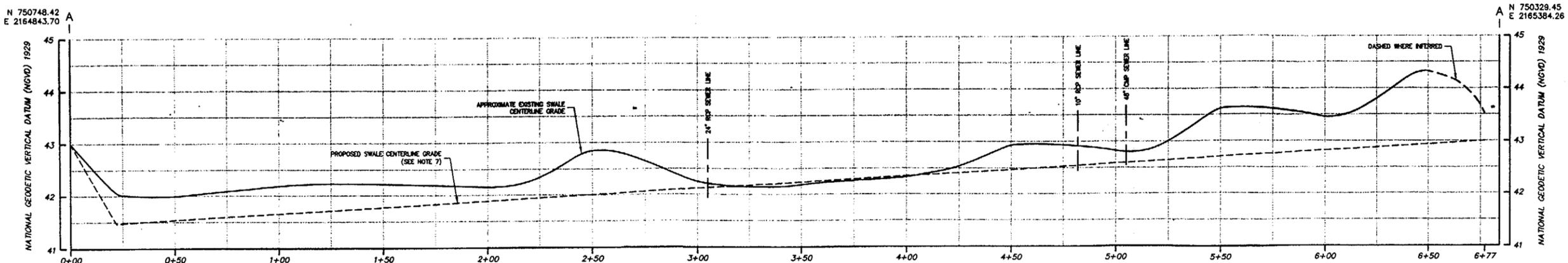
Prepared by: M. CHAFFIN Date: 1/16/99  
 Checked by: C. BIRSCH Date: 1/20/99  
 Drawn by: A. BROWN Date: 1/6/00  
 Approved by: D. SABELL, PE Date: 1/6/00  
 File Name: \MAYWOOD\8575402A.dwg

U.S. ARMY ENGINEER DIVISION  
 CORPS OF ENGINEERS  
 MAYWOOD, NEW JERSEY

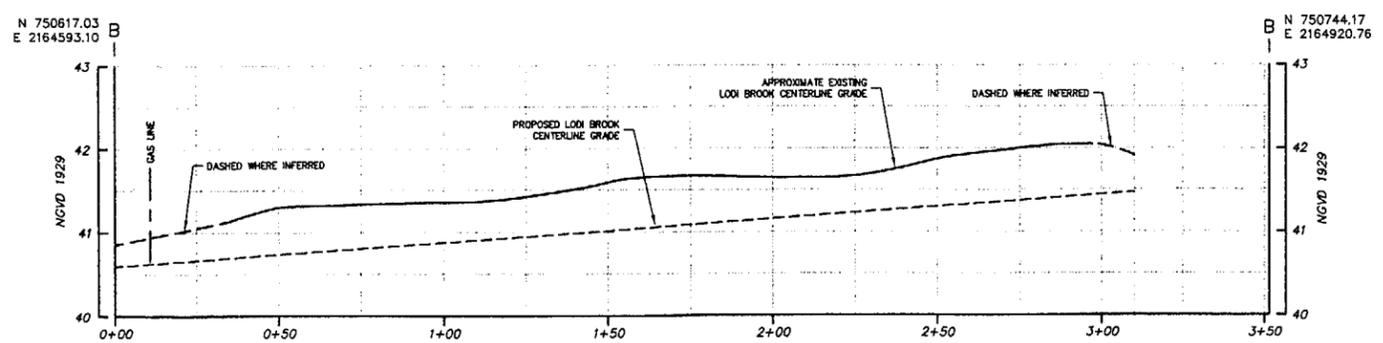
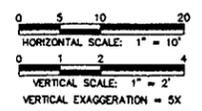
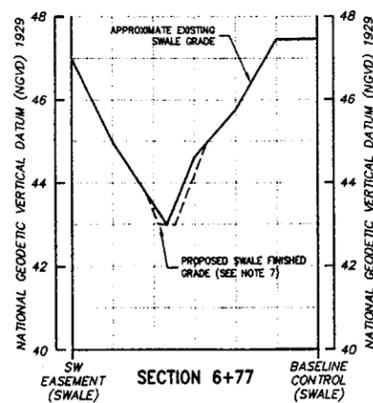
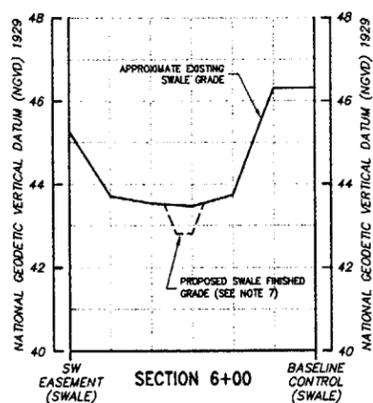
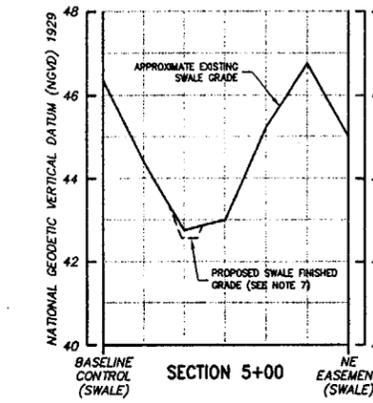
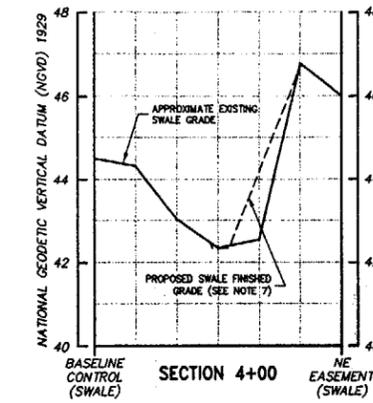
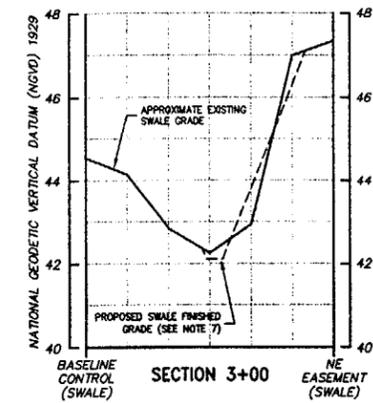
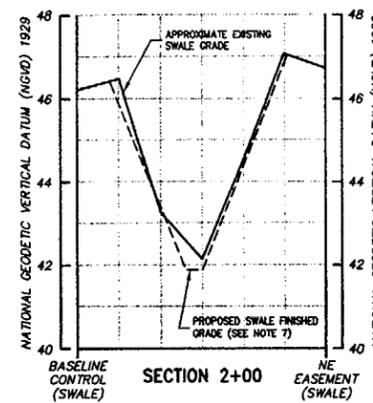
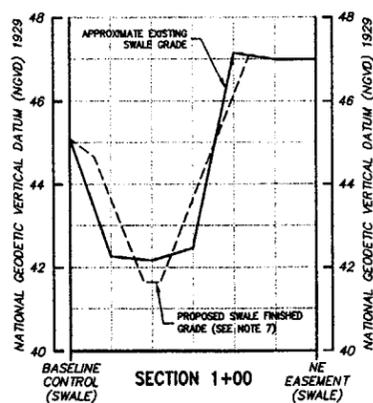
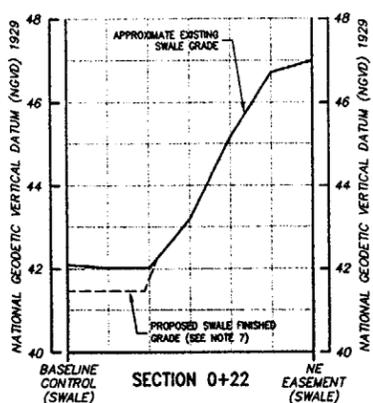
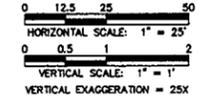
FUSRAP MAYWOOD SUPERFUND SITE  
 MAYWOOD, NEW JERSEY

SITE PREPARATION/LAYOUT

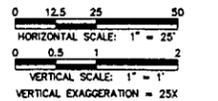
Contract Number: DACW41-99-D-9001  
 Delivery Order Number:  
 Project Number: 08575-0250  
 Drawing Number: TCRA-3



CROSS SECTION A-A (SWALE)  
REFER TO DRAWING NUMBER TCRA-3



CROSS SECTION B-B (LODI BROOK)  
REFER TO DRAWING NUMBER TCRA-3

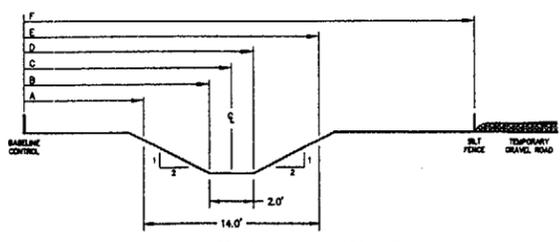


**SWALE FINISHED GRADE SCHEDULE**

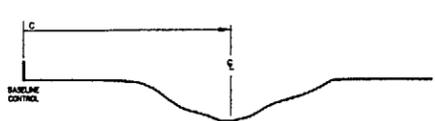
STATION	LOCATION	DISTANCE FROM BASELINE CONTROL (H)	FINISHED ELEVATION (NGVD 1929)
0+22	A	0.0	42.00
	B	7.0	42.02
	C	8.0	42.02
	D	9.0	42.02
	E	15.0	42.02
	F	30.0	42.02
1+00	A	3.0	44.85
	B	9.0	41.85
	C	10.0	41.85
	D	11.0	41.85
	E	17.0	44.85
	F	41.0	44.85
2+00	A	7.0	44.88
	B	13.0	41.88
	C	14.0	41.88
	D	15.0	41.88
	E	21.0	44.88
	F	42.0	44.88
3+00	A	8.8	43.21
	B	14.8	42.11
	C	15.8	42.11
	D	18.8	42.11
	E	23.8	43.11
	F	43.0	43.11
4+00	A	6.3	43.48
	B	13.3	43.54
	C	16.3	42.54
	D	18.3	42.54
	E	23.3	43.54
	F	42.0	43.54
5+00	A	3.7	44.91
	B	9.7	42.91
	C	10.7	42.91
	D	11.7	42.91
	E	17.7	44.91
	F	30.0	44.91
6+00	A	-9.0	44.27
	B	-15.0	42.81
	C	-16.0	42.81
	D	-17.0	42.81
	E	-23.0	43.81
	F	-43.4	43.81
6+77	A	-11.4	43.43
	B	-17.4	42.99
	C	-18.4	42.99
	D	-19.4	42.99
	E	-25.4	43.99
	F	-43.4	43.99

**LODI BROOK CUT SCHEDULE**

STATION	LOCATION	DISTANCE FROM BASELINE CONTROL (H)	FINISHED ELEVATION (NGVD 1929)
0+00	C	17.7	40.59
0+50	C	19.8	40.73
1+00	C	20.3	40.87
1+50	C	17.8	41.02
2+00	C	17.2	41.16
2+50	C	17.5	41.30
3+00	C	15.9	41.44
3+10	C	15.1	41.47



SWALE FINISHED GRADE SCHEDULE



LODI BROOK CUT SCHEDULE

**NOTES**

- EASEMENT LOCATIONS ARE APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE DEEDS.
- ALL EXCAVATION SLOPES SHALL COMPLY WITH SECTION 6.0 OF THE CONSTRUCTION NOTES AND SPECIFICATIONS IDENTIFIED ON DRAWING NUMBER TCRA-6.
- REFER TO DRAWING NUMBER TCRA-3 FOR CROSS SECTION LOCATIONS.
- REFER TO DRAWING NUMBER TCRA-5 FOR TYPICAL SWALE RECONSTRUCTION DETAIL (DETAL 6) AND THE CRITICAL REMOVAL ACTION PROGRESSION PROCESS FLOW DIAGRAM.
- THE HORIZONTAL DATUM IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM (NAD) 1927.
- THE VERTICAL DATUM IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
- THIS IS THE FINISHED GRADE. ALLOW FOR EXCAVATION FOR RIPRAP AND/OR GABION PLACEMENT.



U.S. Army Corps of Engineers  
NEW YORK DISTRICT

Revision	Date	By	Appr'd

STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES  
 Date: 1/16/99  
 Approved: D. SAMELA, PE  
 Drawn by: M. CIMBERA  
 Checked by: C. BURSICH  
 File Name: \MAYWOOD\B575A03A.dwg  
 Date: 1/16/00  
 Approved: A. BROOK, PE

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

LIMITS OF SITE WORK

Project Number: 08575.0250  
 Drawing Number: TCRA-4

A B C D E F G H



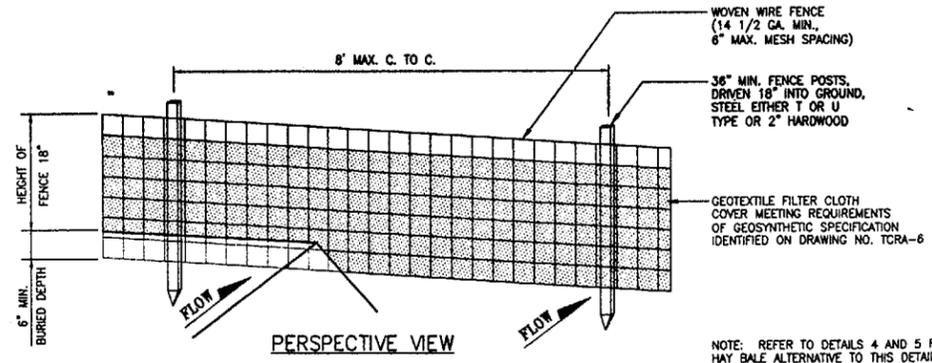
Revision	Symbol	Description	Date
1		ORIGINAL ISSUE	

DESIGNED BY:	M. CHINIERA	DATE:	11/16/99
DRAWN BY:	C. BURRICH	DATE:	11/22/99
APPROVED BY:	A. BROWN	DATE:	1/6/00
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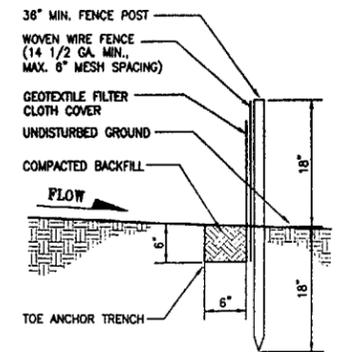
U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

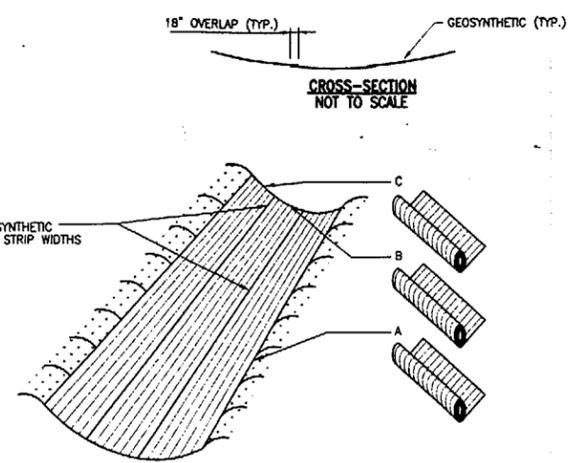
Contract Number: DACW41-99-D-9001  
Delivery Order Number:  
Project Number: 0825/0250  
Drawing Number: TCRA-6



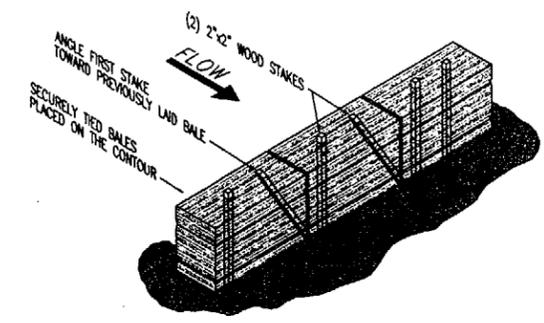
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NOT TO SCALE



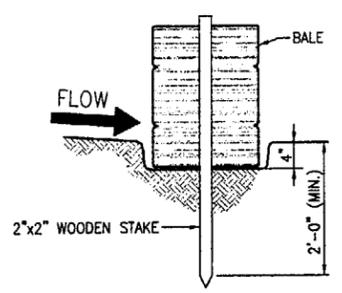
2 SILT FENCE DETAIL  
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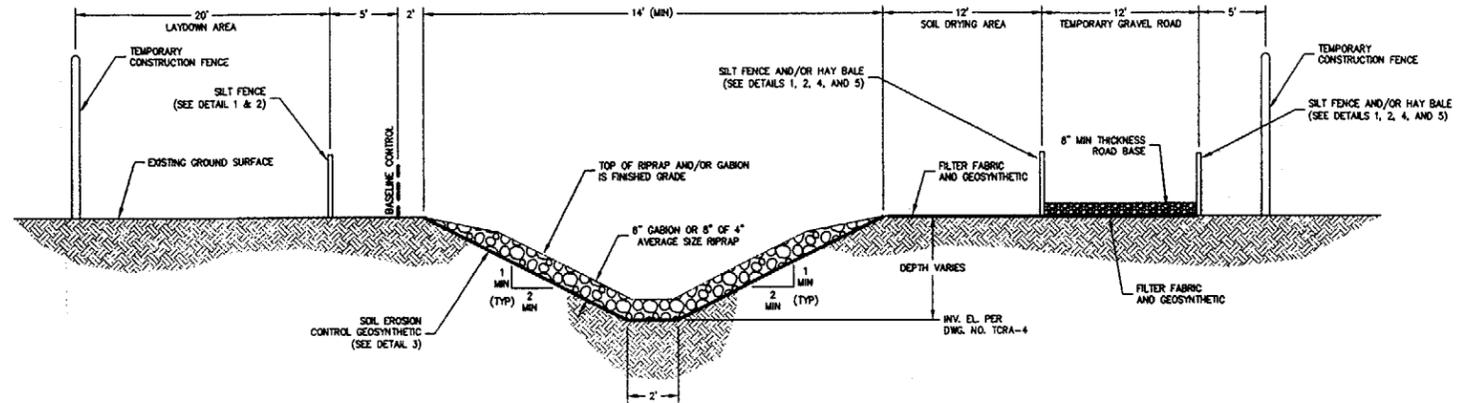
3 SOIL EROSION CONTROL GEOSYNTHETIC  
NOT TO SCALE



4 STRAW BALE INSTALLATION DETAIL  
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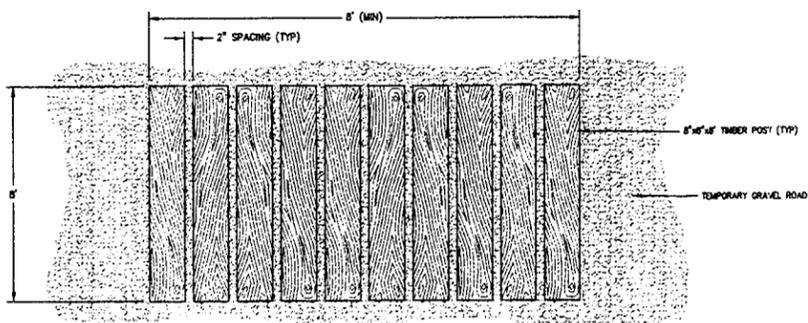
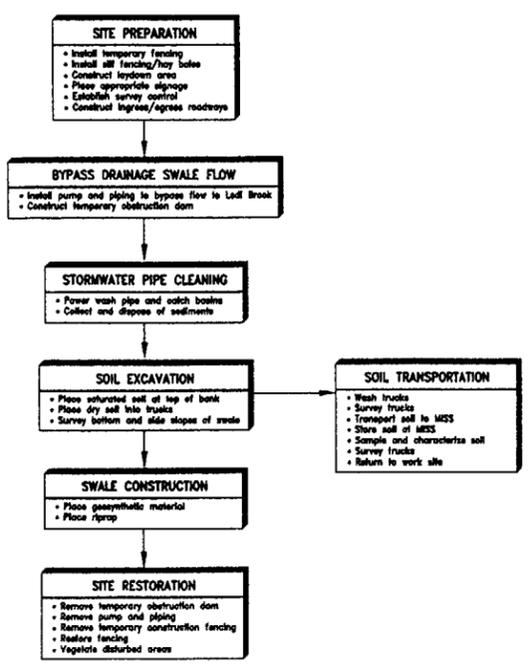


5 STRAW BALE  
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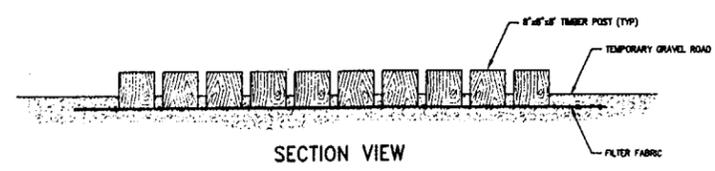


C TYPICAL SWALE RECONSTRUCTION DETAIL  
NOT TO SCALE

TIME CRITICAL REMOVAL ACTION PROGRESSION PROCESS FLOW

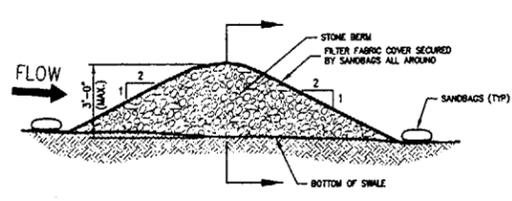


PLAN VIEW

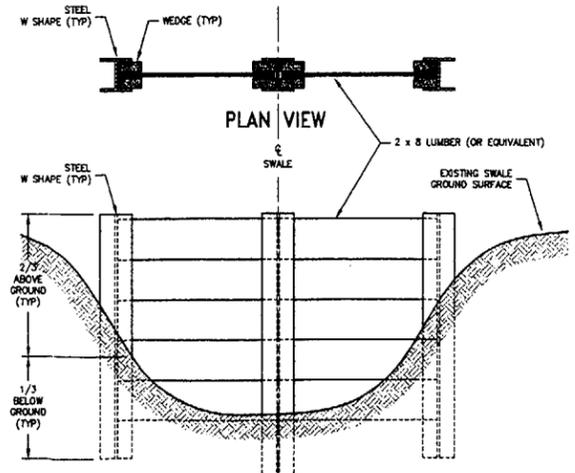


SECTION VIEW

7 DECONTAMINATION STATION  
NOT TO SCALE



8 TEMPORARY OBSTRUCTION DAM DETAIL AT NORTHWEST END OF SWALE  
NOT TO SCALE



9 TEMPORARY OBSTRUCTION DAM DETAIL AT HOWCROFT RD.  
NOT TO SCALE

NOTE  
1. REFER TO DRAWING NUMBER TCRA-6 FOR CONSTRUCTION NOTES AND SPECIFICATIONS.

MISCELLANEOUS DETAILS



# CONSTRUCTION NOTES AND SPECIFICATIONS



No.	Description	Date

**STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES**

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**CONSTRUCTION NOTES AND SPECIFICATIONS**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

**CONSTRUCTION NOTES AND SPECIFICATIONS**

**TCRA-7**

Contract Number: DACW41-99-D-5001  
Delivery Order Number:    
Project Number: 08575-0250  
Drawing Number:

9. GEOTEXTILES AND FACTORY SEAMS SHALL MEET REQUIREMENTS IN ORDER TO MAINTAIN MANUFACTURING QUALITY CONTROL.

10. THE REQUIRED PHYSICAL PROPERTIES FOR GEOTEXTILES AND GEOSYNTHETICS ARE DETAILED BELOW.

**GEOTEXTILE FOR SEPARATION AND STABILIZATION**

PHYSICAL PROPERTY	PROCEDURE	MINIMUM REQUIREMENT
GRAB TENSILE STRENGTH	ASTM D 4632	200 LBS.
GRAB ELONGATION (%)	ASTM D 4632	30% (MAX.)
MULLEN BURST	ASTM D 3786	350 PSI
TRAPEZOID TEAR STRENGTH	ASTM D 4633	85 LBS.
PUNCTURE RESISTANCE	ASTM D 3787	105 LBS.

**GEOTEXTILE FOR SILT FENCE**

PHYSICAL PROPERTY	PROCEDURE	MINIMUM REQUIREMENT
GRAB TENSILE STRENGTH	ASTM D 4632	100 LBS.
GRAB ELONGATION (%)	ASTM D 4632	30 % (MAX.)
MULLEN BURST	ASTM D 3786	250 PSI
TRAPEZOID TEAR STRENGTH	ASTM D 4633	55 LBS.
PUNCTURE RESISTANCE	ASTM D 3787	55 LBS.
PERMITTIVITY	ASTM D 4491	0.15 SEC-1
APPARENT OPENING SIZE	ASTM D 4751	U.S. STD. SIEVE NO. 20-100.

**GEOMEMBRANE**

PHYSICAL PROPERTY	PROCEDURE	MINIMUM REQUIREMENT
THICKNESS	ASTM D 5199	30 MIL
TENSILE YIELD STRESS	ASTM D 638	40 LB/IN
TENSILE YIELD ELONGATION	ASTM D 638	13-20 %
PUNCTURE RESISTANCE	ASTM D 4833	45 LBS.
TEAR RESISTANCE	ASTM D 1004	20 LBS.

**10.0 SURVEY CONTROL**

1. PERMANENT MONUMENTS, IF REQUIRED, SHALL BE ESTABLISHED TO HORIZONTAL AND VERTICAL CONTROL OF +/- 0.01 FT.
2. CONSTRUCTION STAKING SHALL BE ESTABLISHED WITH HORIZONTAL AND VERTICAL CONTROL OF +/- 0.1 FT.
3. THE FOLLOWING TOPOGRAPHIC SURVEYS SHALL BE PERFORMED:
  - a. EXISTING GRADE.
  - b. GROUND SURFACE AFTER ALL EXCAVATION HAS BEEN PERFORMED.
  - c. GROUND SURFACE AFTER FINAL GRADE HAS BEEN ACHIEVED.
4. THE THREE CONTROL SURVEYS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER TO VERIFY THE EXTENT OF EXCAVATION PERFORMED AND TO PROVIDE A "FINAL GRADE" RECORD DRAWING. THE DRAWINGS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
  - a. THE DRAWING SHALL UTILIZE THE STATE PLANE COORDINATE SYSTEM.
  - b. ALL BENCHMARK ELEVATIONS SHALL BE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
  - c. ALL HORIZONTAL CONTROLS SHALL BE BASED ON THE NORTH AMERICAN DATUM (NAD) 1927.
  - d. ALL ELEVATIONS SHALL BE SHOWN IN NGVD 1929.
  - e. ELEVATION MEASUREMENTS SHALL BE ACCURATE TO WITHIN 0.1 FT.
  - f. DRAWINGS SHALL BE SUBMITTED ON 22" X 34" SIZE PAPER AND USE A STANDARD TITLE BLOCK
  - g. SITE PLANS SHALL BE DRAWN USING SCALE OF 1" = 50' OR LESS.
  - h. CROSS SECTIONS SHALL BE SCALED AS SHOWN ON THE DRAWINGS

**11.0 SUBMITTALS**

1. SUBMITTAL PROCEDURES SHALL BE IN ACCORDANCE WITH THE SUBMITTALS SOP PROVIDED IN THE CQCP.
2. ALL SUBMITTALS SHALL BE PROVIDED TO STONE & WEBSTER ADMINISTRATIVE SUPPORT FOR ENTRY INTO THE SUBMITTAL TRACKING REGISTER AND TRANSMITTAL TO THE APPROPRIATE REVIEWING ORGANIZATION. ALL GOVERNMENT SUBMITTALS, WHETHER FOR APPROVAL OR INFORMATION ONLY, SHALL BE TRANSMITTED TO THE CONTRACTING OFFICER.
3. ALL REGULATORY SUBMITTALS SHALL BE FIRST TRANSMITTED TO THE CONTRACTING OFFICER FOR GOVERNMENT APPROVAL. NO TRANSMITTAL SHALL BE PROVIDED DIRECTLY TO ANY REGULATORY AGENCY.
4. SUBMITTALS SHALL BE CLASSIFIED AS ONE OF THE FOLLOWING THREE APPROVAL LEVELS:
  - a. GOVERNMENT APPROVAL (GA) - GA SUBMITTALS SHALL BE APPROVED BY STONE & WEBSTER PRIOR TO TRANSMITTAL TO THE CONTRACTING OFFICER. NO WORK SHALL PROCEED UNTIL APPROVAL IS RECEIVED FROM THE GOVERNMENT.
  - b. GOVERNMENT INFORMATION ONLY (GIO) - GIO SUBMITTALS SHALL BE APPROVED BY STONE & WEBSTER PRIOR TO TRANSMITTAL TO THE CONTRACTING OFFICER. WORK SHALL PROCEED UPON STONE & WEBSTER APPROVAL AND A COPY WILL BE PROVIDED TO THE GOVERNMENT.
  - c. STONE AND WEBSTER ONLY (SWO) - SWO SUBMITTALS ARE REQUIRED BY STONE & WEBSTER TO ENSURE THE QUALITY AND TIMELY PROGRESS OF WORK. THEY DO NOT REQUIRE GOVERNMENT SUBMITTAL DURING THE PROGRESS OF WORK. COPIES WILL BE PROVIDED TO THE GOVERNMENT WITH THE PROJECT FILES UPON JOB CLOSEOUT
5. REQUIRED SUBMITTALS ARE IDENTIFIED IN THE TCRAWP. ADDITIONAL SUBMITTALS MAY BE REQUESTED BY THE CONTRACTING OFFICER OR BY STONE & WEBSTER.

**8.0 FINAL GRADING, RESTORATION, AND REVEGETATION**

1. ALL AREAS COVERED BY THE PROJECT, INCLUDING EXCAVATED AND FILLED SECTIONS AND ADJACENT TRANSITION AREAS, SHALL BE UNIFORMLY SMOOTH-GRADED. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH, COMPACTED, AND FREE FROM IRREGULAR SURFACE CHANGES. THE DEGREE OF FINISH SHALL BE THAT ORDINARILY OBTAINABLE FROM DOZER OPERATIONS. DITCHES AND GUTTERS SHALL BE FINISHED TO PERMIT ADEQUATE DRAINAGE. LOW AREAS RESULTING FROM REMOVAL OF UNSATISFACTORY OR CONTAMINATED MATERIAL OR FROM EXCAVATION OF ROCK SHALL BE BROUGHT UP TO REQUIRED GRADE WITH APPROVED BORROW, AND THE ENTIRE SUBGRADE SHALL BE SHAPED TO LINE, GRADE, AND CROSS SECTION AND SHALL BE COMPACTED AS SPECIFIED. SURFACES SHALL BE FINISHED WITHIN 0.10 FOOT ABOVE OR BELOW THE ESTABLISHED GRADE OR APPROVED CROSS SECTION.
2. AREAS WITHIN THE LIMITS OF DISTURBANCE FROM WHICH TOPSOIL HAS BEEN REMOVED SHALL BE TOPSOILED. THE SURFACE SHALL BE FREE OF MATERIALS THAT WOULD HINDER PLANTING OR MAINTENANCE OPERATIONS. THE SUBGRADE SHALL BE PULVERIZED TO A DEPTH OF 2 INCHES BY DISKING OR PLOWING FOR THE BONDING OF TOPSOIL WITH THE SUBSOIL. TOPSOIL SHALL THEN BE UNIFORMLY SPREAD, GRADED, AND COMPACTED TO THE THICKNESS, ELEVATIONS, SLOPES SHOWN, AND LEFT FREE OF SURFACE IRREGULARITIES. TOPSOIL SHALL BE COMPACTED BY ONE PASS OF A CULTIPACKER, ROLLER, OR OTHER APPROVED EQUIPMENT WEIGHING 100 TO 160 POUNDS PER LINEAR FOOT OF ROLLER. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN, OR EXCESSIVELY WET, OR DRY, OR IN A CONDITION OTHERWISE DETRIMENTAL TO SEEDING, PLANTING, OR PROPER GRADING.
3. NEWLY GRADED AREAS SHALL BE PROTECTED FROM TRAFFIC, EROSION, AND ANY SETTLEMENT OR WASHING. PRIOR TO ACCEPTANCE OF THE WORK, ALL EROSION AND DRAINAGE PROBLEMS SHALL BE REPAIRED AND GRADES REESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION SPECIFICATIONS.
4. STATE-APPROVED SEED OF THE LATEST SEASON'S CROP SHALL BE PROVIDED IN ORIGINAL SEALED PACKAGES BEARING THE PRODUCER'S GUARANTEED ANALYSIS FOR PERCENTAGES OF MIXTURE, PURITY, GERMINATION, HARD SEED, WEED SEED CONTENT, AND INERT MATERIAL. LABELS SHALL BE IN CONFORMANCE WITH AMS-01 AND APPLICABLE STATE SEED LAWS.
5. SEED MIXTURES SHALL BE PROPORTIONED BY SEASON AS FOLLOWS:
  - A. TYPE I: 70 PERCENT KENTUCKY 31 FESCUE, 15 PERCENT WHITE DUTCH CLOVER, AND 15 PERCENT ANNUAL RYE
  - B. TYPE II: 100 PERCENT PERENNIAL RYE FOR TEMPORARY GROUND COVER DURING WINTER MONTHS, WHICH MUST LATER BE REPLACED BY TYPE I.
6. SEED SHALL BE INSPECTED UPON ARRIVAL AT THE JOB SITE FOR CONFORMITY TO TYPE AND QUALITY. OTHER MATERIALS SHALL BE INSPECTED FOR MEETING SPECIFIED REQUIREMENTS AND UNACCEPTABLE MATERIALS SHALL BE REMOVED FROM THE JOB SITE. WEED SEED SHALL NOT EXCEED 1 PERCENT BY WEIGHT OF THE TOTAL MIXTURE. WET, MOLDY, OR OTHERWISE DAMAGED SEED SHALL BE REJECTED.
7. SOIL AMENDMENTS SHALL CONSIST OF LIME, FERTILIZER, ORGANIC SOIL AMENDMENTS AND SOIL CONDITIONERS MEETING THE FOLLOWING REQUIREMENTS:
  - A. LIME SHALL BE AGRICULTURAL LIMESTONE AND SHALL HAVE A MINIMUM CALCIUM CARBONATE EQUIVALENT OF 90 PERCENT AND SHALL BE GROUND TO SUCH A FINENESS THAT AT LEAST 90 PERCENT WILL PASS A 10-MESH SIEVE AND AT LEAST 50 PERCENT WILL PASS A 60-MESH SIEVE.
  - B. FERTILIZER SHALL BE COMMERCIAL GRADE, FREE FLOWING, UNIFORM IN COMPOSITION AND CONFORMING TO CID A-1909.
  - C. STRAW SHALL BE STALKS FROM OATS, WHEAT, RYE, BARLEY, OR RICE FURNISHED IN AIR-DRY CONDITION AND WITH A CONSISTENCY FOR PLACING WITH COMMERCIAL MULCH-BLOWING EQUIPMENT FREE FROM WEEDS, MOLD, AND OTHER DELETERIOUS MATERIALS.
8. LIME SHALL BE APPLIED AT THE RATE RECOMMENDED BY THE SOIL TEST. LIME SHALL BE INCORPORATED INTO THE SOIL TO A MINIMUM DEPTH OF 4 INCHES OR MAY BE INCORPORATED AS PART OF THE TILLAGE OPERATION.
9. FERTILIZER SHALL BE APPLIED AT THE RATE RECOMMENDED BY THE SOIL TEST. FERTILIZER SHALL BE INCORPORATED INTO THE SOIL TO A MINIMUM DEPTH OF 4 INCHES AND MAY BE INCORPORATED AS PART OF THE TILLAGE OR HYDROSEEDING OPERATION.
10. WATER SHALL NOT CONTAIN ELEMENTS TOXIC TO PLANT LIFE.
11. WHEN PESTICIDE BECOMES NECESSARY TO REMOVE A PEST OR DISEASE, A STATE-CERTIFIED APPLICATOR SHALL APPLY REQUIRED PESTICIDES IN ACCORDANCE WITH EPA LABEL RESTRICTIONS AND RECOMMENDATIONS. HYDRAULIC EQUIPMENT SHALL BE PROVIDED FOR THE LIQUID APPLICATION OF PESTICIDES WITH A LEAK-PROOF TANK, POSITIVE AGITATION METHODS, CONTROLLED APPLICATION PRESSURE AND METERING GAUGES. A PESTICIDE PLAN SHALL BE PROVIDED TO THE CONTRACTING OFFICER.
12. PESTICIDE MATERIAL SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL, UNOPENED CONTAINERS BEARING LEGIBLE LABELS INDICATING THE EPA REGISTRATION NUMBER AND THE MANUFACTURER'S REGISTERED USES.
13. PESTICIDE SHALL BE INSECTICIDE, HERBICIDE, FUNGICIDE, NEMATOCIDE, RODENTICIDE AND MITICIDE. FOR THE PURPOSE OF THIS SPECIFICATION, SOIL FUMIGANT SHALL HAVE THE SAME REQUIREMENTS AS A PESTICIDE. THE PESTICIDE MATERIAL SHALL BE REGISTERED AND APPROVED BY THE EPA.
14. MATERIALS SHALL BE STORED IN AREAS DESIGNATED BY THE CONTRACTING OFFICER. SEED, LIME AND FERTILIZER SHALL BE STORED IN COOL, DRY LOCATIONS AWAY FROM CONTAMINANTS. CHEMICAL TREATMENT MATERIALS SHALL NOT BE STORED WITH OTHER LANDSCAPE MATERIALS.
15. REVEGETATION OPERATIONS SHALL BE PERFORMED ONLY DURING PERIODS WHEN BENEFICIAL RESULTS CAN BE OBTAINED. WHEN DROUGHT, EXCESSIVE MOISTURE OR OTHER UNSATISFACTORY CONDITIONS PREVAIL, THE WORK SHALL BE STOPPED. WHEN SPECIAL CONDITIONS WARRANT A VARIANCE TO THE REVEGETATION OPERATIONS, PROPOSED TIMES SHALL BE SUBMITTED TO AND APPROVED BY THE CONTRACTING OFFICER.
16. SOIL EROSION CONTROL FOR REVEGETATED AREAS SHALL CONFORM TO THE FOLLOWING: MACHINE PRODUCED MAT OF WOOD EXCELSDIOR FORMED FROM A WEB OF INTERLOCKING WOOD FIBERS, COVERED ON ONE SIDE WITH EITHER KNITTED STRAW BLANKET-LIKE MAT CONSTRUCTION, COVERED WITH BIODEGRADABLE PLASTIC MESH, OR INTERWOVEN BIODEGRADABLE THREAD, PLASTIC NETTING OR TWISTED KRAFT PAPER CORD NETTING.
17. REVEGETATED AREAS SHALL BE FILLED AS NEEDED OR HAVE SURPLUS SOIL REMOVED TO ATTAIN THE FINISHED GRADE. DRAINAGE PATTERNS SHALL BE MAINTAINED AS INDICATED ON DRAWINGS. REVEGETATED AREAS COMPACTED BY CONSTRUCTION OPERATIONS SHALL BE COMPLETELY PULVERIZED BY TILLAGE. FINISHED GRADE SHALL BE 1 INCH BELOW THE ADJOINING GRADE OF ANY SURFACED AREA. NEW SURFACES SHALL BE BLENDED TO EXISTING AREAS. PRIOR TO SEEDING, ANY PREVIOUSLY PREPARED SEEDBED AREAS COMPACTED OR DAMAGED BY INTERIM RAIN, TRAFFIC OR OTHER CAUSE, SHALL BE REWORKED TO RESTORE THE GROUND CONDITION. SEEDING OPERATIONS SHALL NOT TAKE PLACE WHEN THE WIND VELOCITY WILL PREVENT UNIFORM SEED DISTRIBUTION.
18. FINISHED GRADED AREAS SHALL BE PROTECTED FROM DAMAGE BY VEHICULAR OR PEDESTRIAN TRAFFIC AND EROSION.

19. SEED AND FERTILIZER SHALL BE ADDED TO WATER AND THOROUGHLY MIXED AT THE RATES SPECIFIED. SLURRY SHALL BE UNIFORMLY APPLIED UNDER PRESSURE OVER THE ENTIRE AREA. THE HYDROSEEDING AREA SHALL NOT BE ROLLED. TYPE I SEEDED SLURRY SHALL BE APPLIED AT A RATE OF 8 LB/1000 SQ FT AND TYPE II SEEDED SLURRY SHALL BE APPLIED AT A RATE OF 2 LB/1000 SQ FT EVENLY IN TWO INTERSECTING DIRECTIONS WITH A HYDRAULIC SEEDER. HYDROSEEDING SHALL NOT OCCUR IN AN AREA THAT CANNOT BE MULCHED ON THE SAME DAY.
20. STRAW OR HAY MULCH SHALL BE SPREAD UNIFORMLY AT THE RATE OF 2 TONS PER ACRE. MULCH SHALL BE SPREAD BY HAND, BLOWER-TYPE MULCH SPREADER, OR OTHER APPROVED METHOD. MULCHING SHALL BE STARTED ON THE WINDWARD SIDE OF RELATIVELY FLAT AREAS OR ON THE UPPER PART OF A STEEP SLOPE AND CONTINUED UNIFORMLY UNTIL THE AREA IS COVERED. THE MULCH SHALL NOT BE BUNCHED. ALL SEEDED AREAS SHALL BE MULCHED ON THE SAME DAY AS THE SEEDING.
21. WATERING SHALL BE STARTED WITHIN 7 DAYS AFTER COMPLETING THE SEEDING AREA. WATER SHALL BE APPLIED AT A RATE SUFFICIENT TO ENSURE MOIST SOIL CONDITIONS TO A MINIMUM DEPTH OF 1 INCH. FREQUENCY OF WATERING AND QUANTITY OF WATER SHALL BE ADJUSTED IN ACCORDANCE WITH THE GROWTH OF THE VEGETATION. RUN-OFF, PUDDLING AND WILTING SHALL BE PREVENTED.
22. EROSION CONTROL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PLACEMENT OF THE EROSION CONTROL MATERIAL SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO INSTALLED MATERIAL OR WITHOUT DEVIATION TO FINISHED GRADE.
23. WHEN THERE ARE CONTRACT DELAYS IN THE REVEGETATION OPERATION OR A QUICK COVER IS REQUIRED TO PREVENT EROSION, THE AREAS DESIGNATED FOR VEGETATION SHALL BE SEEDED WITH A TEMPORARY SEED AS DIRECTED BY THE CONTRACTING OFFICER.
24. WHEN NO OTHER REVEGETATION MATERIALS HAVE BEEN APPLIED, THE QUANTITY OF ONE HALF OF THE REQUIRED SOIL AMENDMENTS SHALL BE APPLIED AND THE AREA TILLED. SEED SHALL BE UNIFORMLY HYDROSEEDED. THE AREA SHALL BE WATERED AS REQUIRED.
25. EXISTING VEGETATION AREAS, PAVEMENTS AND FACILITIES THAT HAVE BEEN DAMAGED FROM THE REVEGETATION OPERATION SHALL BE RESTORED TO ORIGINAL CONDITION.
26. EXCESS AND WASTE MATERIAL SHALL BE REMOVED FROM THE PLANTING OPERATION AND SHALL BE DISPOSED OFF THE SITE. ADJACENT PAVED AREAS SHALL BE CLEANED.
27. IMMEDIATELY AFTER REVEGETATION, THE AREA SHALL BE PROTECTED AGAINST TRAFFIC OR OTHER USE BY ERECTING BARRICADES AND PROVIDING SIGNAGE AS REQUIRED, OR AS DIRECTED BY THE CONTRACTING OFFICER.
28. THE VEGETATION ESTABLISHMENT PERIOD FOR ESTABLISHING A HEALTHY STAND OF VEGETATION SHALL BEGIN ON THE FIRST DAY OF WORK UNDER THIS CONTRACT AND SHALL END THREE (3) MONTHS AFTER THE LAST DAY OF REVEGETATION OPERATIONS REQUIRED BY THIS CONTRACT. A SATISFACTORY STAND OF VEGETATION FROM THE SEEDING OPERATION FOR A FIELD AREA IS DEFINED AS A MINIMUM OF 10 GRASS PLANTS PER SQUARE FOOT. THE TOTAL BARE SPOTS SHALL NOT EXCEED 2 PERCENT OF THE TOTAL SEEDING AREA.
29. MAINTENANCE OF THE TURFED AREAS SHALL INCLUDE ERADICATING WEEDS, ERADICATING INSECTS AND DISEASES, PROTECTING EMBANKMENTS AND DITCHES FROM EROSION, MAINTAINING EROSION CONTROL MATERIALS AND MULCH, PROTECTING TURFED AREAS FROM TRAFFIC, MOWING, WATERING, AND POST-FERTILIZATION.
30. ERODED, DAMAGED OR BARREN AREAS SHALL BE RE-ESTABLISHED. MULCH SHALL ALSO BE REPAIRED OR REPLACED, AS REQUIRED.

**9.0 GEOSYNTHETICS**

1. GEOSYNTHETICS ARE TO BE USED IN TEMPORARY APPLICATIONS TO EXPEDITE CONSTRUCTION. GEOSYNTHETICS SHALL CONSIST OF GEOTEXTILES, TO BE USED FOR SILT FENCES, ROAD STABILIZATION, FILTRATION, EROSION CONTROL ETC., AND GEOMEMBRANES, TO BE USED TO SEPARATE AND CONTAIN RAIN WATER FALLING ON "CLEAN" EXCAVATION AREAS.
2. GEOTEXTILE SHALL BE A PERVIOUS SHEET OF POLYMERIC MATERIAL THAT IS RESISTANT TO DETERIORATION BY ULTRAVIOLET LIGHT, OXIDATION, AND HEAT EXPOSURE. THE GEOTEXTILE SHALL CONSIST OF POLYMERIC FILAMENTS THAT ARE FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER.
3. GEOMEMBRANES SHALL BE IMPERVIOUS SHEETS OF POLYMERIC MATERIAL THAT IS RESISTANT TO DETERIORATION BY ULTRAVIOLET LIGHT, OXIDATION, AND HEAT EXPOSURE.
4. GEOSYNTHETICS SHALL BE LABELED, HANDLED, AND STORED IN ACCORDANCE WITH ASTM D 4873 AND AS SPECIFIED HEREIN. EACH ROLL SHALL BE WRAPPED IN AN OPAQUE AND WATERPROOF LAYER OF PLASTIC DURING SHIPMENT AND STORAGE. THE PLASTIC WRAPPING SHALL NOT BE REMOVED UNTIL DEPLOYMENT. EACH ROLL SHALL BE LABELED WITH THE MANUFACTURER'S NAME, GEOSYNTHETIC TYPE, LOT NUMBER, ROLL NUMBER, AND ROLL DIMENSIONS (LENGTH, WIDTH, GROSS WEIGHT). GEOSYNTHETIC OR PLASTIC WRAPPING DAMAGED AS A RESULT OF STORAGE OR HANDLING SHALL BE REPAIRED OR REPLACED, AS DIRECTED. GEOSYNTHETIC SHALL NOT BE EXPOSED TO TEMPERATURES IN EXCESS OF 140 DEGREES F OR LESS IF RECOMMENDED BY THE MANUFACTURER.
5. NO HOOKS, TONGS OR OTHER SHARP INSTRUMENTS SHALL BE USED FOR HANDLING GEOSYNTHETICS. GEOSYNTHETICS SHALL NOT BE DRAGGED ALONG THE GROUND.
6. THE SURFACE UNDERLYING THE GEOSYNTHETIC SHALL BE SMOOTH AND FREE OF RUTS OR PROTRUSIONS, WHICH COULD DAMAGE THE GEOSYNTHETIC.
7. GEOSYNTHETIC PANELS SHALL BE CONTINUOUSLY OVERLAPPED A MINIMUM OF 18 INCHES. WHERE IT IS REQUIRED THAT SEAMS BE ORIENTED ACROSS THE SLOPE, THE UPPER SHEET SHALL BE LAPPED OVER THE LOWER SHEET.

13. THE FOLLOWING INFORMATION SHALL BE RECORDED IN THE DAILY CQC REPORTS:
  - A. DATES WHEN THE MAJOR GRADING ACTIVITIES OCCUR, (E.G., EXCAVATION, GRADING)
  - B. DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE
  - C. DATES WHEN STABILIZATION PRACTICES ARE INITIATED
14. INSPECTIONS FOR COMPLIANCE WITH STORM WATER POLLUTION PREVENTION REQUIREMENTS SHALL BE CONDUCTED AT LEAST ONCE EVERY CALENDAR DAY. THE FOLLOWING AREAS SHALL BE INSPECTED: SEDIMENTATION BASIN, DISTURBED AREAS OF THE CONSTRUCTION SITE, AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT BEEN FINALLY STABILIZED, STABILIZATION PRACTICES, STRUCTURAL PRACTICES, OTHER CONTROLS, AND AREAS WHERE VEHICLES EXIT THE SITE.
15. DISTURBED AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE TCRAWP SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS OR POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. LOCATIONS WHERE VEHICLES EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.
16. EXCAVATIONS SHALL BE KEPT FREE FROM WATER DURING THE PERFORMANCE OF THE WORK. DAMS AND OTHER DEVICES NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO EXCAVATIONS SHALL BE BUILT. PUMPS OF SUFFICIENT CAPACITY TO REMOVE PONDED WATER IN EXCAVATIONS SHALL BE PROVIDED AND OPERATED.
17. GROUNDWATER FLOWING INTO EXCAVATIONS SHALL BE CONTROLLED TO PREVENT SLOUGHING OF EXCAVATION SLOPES AND WALLS, BOILS, UPLIFT AND HEAVE IN THE EXCAVATION AND TO ELIMINATE INTERFERENCE WITH ORDERLY PROGRESS OF WORK. CONTROL MEASURES SHALL BE TAKEN BEFORE THE EXCAVATION DEPTH REACHES THE WATER LEVEL IN ORDER TO MAINTAIN THE INTEGRITY OF THE IN-SITU MATERIAL.

**6.0 EXCAVATION AND FILLING**

1. ALL EXCAVATION PROCEDURES SHALL BE PERFORMED IN ACCORDANCE WITH THE TCRAWP OTHERWISE MODIFIED IN THESE SPECIFICATIONS.
2. PRIOR TO COMMENCEMENT OF INTRUSIVE WORK ON SITE, NEW JERSEY ONE-CALL SYSTEM (800-272-1000) SHALL BE CONTACTED FOR UTILITY LOCATIONS AND IDENTIFICATION. ALL EFFORTS TO IDENTIFY, LOCATE, AND MARK UTILITIES SHALL BE DOCUMENTED.
3. PRIOR TO BEGINNING EXCAVATION, A FIELD SAFETY CHECKLIST SHALL BE COMPLETED AND THE REQUIRED SIGNATURES SHALL BE OBTAINED.
4. EARTHWORK SHALL NOT BE PERFORMED WHEN WEATHER CONDITIONS OR THE CONDITION OF MATERIALS ARE SUCH THAT WORK CANNOT BE PERFORMED TO THE SATISFACTION OF THE CONTRACTING OFFICER.
5. EXCAVATIONS SHALL BE KEPT FREE OF STANDING WATER AT ALL TIMES. SURFACE WATER CONTROL MEASURES SHALL BE USED TO PREVENT SURFACE WATER FROM ENTERING EXCAVATIONS. EXCAVATIONS EXTENDING BELOW THE WATER TABLE SHALL BE DEWATERED IN ACCORDANCE WITH THE SPECIFICATIONS UNDER SOIL EROSION CONTROL AND WATER MANAGEMENT.
6. CONTAMINATED MATERIAL SHALL BE REPLACED WITH SATISFACTORY MATERIAL AS SHOWN ON THE CONTRACT DRAWINGS.
7. BORROW SOURCES SHALL BE ANALYZED FOR TARGET ANALYTE LIST/TARGET COMPOUND LIST (TAL/TCL) AND RADIONUCLIDES.
8. APPROVED BORROW SHALL BE USED IN BRINGING FILLS TO THE LINES AND GRADES INDICATED AND FOR REPLACING UNSATISFACTORY MATERIALS.
9. ANY PONDING AREAS/GULLIES TO BE FILLED/COMPACTED PER FIELD DIRECTION BY THE PROJECT SUPERINTENDENT.

**7.0 TRANSPORTATION AND STORAGE**

1. TRANSPORTATION AND STORAGE OF WASTE SHALL BE PERFORMED IN ACCORDANCE WITH THE TCRAWP.
2. ALL RADIOLOGICALLY-CONTAMINATED WASTE SHALL BE IDENTIFIED, MANAGED, TRANSPORTED AND DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL AND STATE LAWS, REGULATIONS AND REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, 10 CFR 20 AND EM-385-1-1 AND THE DISPOSAL FACILITY REQUIREMENTS.
3. SUITABLY TIGHT VEHICLES SHALL BE USED TO PREVENT SPILLAGE WHEN HAULING OF SOFT OR WET SOIL MATERIAL. OVER ROADWAYS IS NECESSARY. SPILLAGE OF MATERIALS ON ROADWAYS CAUSED BY HAULING SHALL BE REMOVED IMMEDIATELY.
4. PRECAUTIONARY MEASURES AGAINST ACCIDENTAL SPILLAGE SHALL BE TAKEN, SUCH AS BERMING OR OTHER APPROPRIATE MEASURES.
5. SPILL RESPONSE MATERIALS, INCLUDING, BUT NOT LIMITED TO, CONTAINERS, ADSORBENT, SHOVELS, AND PERSONAL PROTECTIVE EQUIPMENT, SHALL BE AVAILABLE AT ALL TIMES IN WHICH WASTES ARE BEING HANDLED OR TRANSPORTED. SPILL RESPONSE MATERIALS SHALL BE COMPATIBLE WITH THE TYPE OF MATERIAL BEING HANDLED.
6. WATER CONTENT OF SOILS WILL BE VISUALLY DETERMINED.

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# **Construction Work Plan for Swale Time-Critical Removal Action**

**New York District  
Formerly Utilized Sites Remedial Action Program  
Maywood Superfund Site**

**Prepared by:  
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**for:  
US Army Corps of Engineers - Kansas City District  
Formerly Utilized Sites Remedial Action Program  
Contract No. DACW41-99-D-9001**



**US Army Corps  
of Engineers**

Revision 1 February 17, 2000

**CONSTRUCTION WORK PLAN  
FOR  
SWALE TIME-CRITICAL REMOVAL ACTION**

**FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY**

**SITE-SPECIFIC ENVIRONMENTAL RESTORATION  
CONTRACT NO. DACW41-99-D-9001  
TASK ORDER No. 0002  
WAD 02, WBS 06**

*Submitted to:*

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**Revision 1, February 2000**

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## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>5</b>
1.1	CONSTRUCTION WORK PLAN .....	5
1.2	BACKGROUND.....	5
<b>2.0</b>	<b>SITE DESCRIPTION .....</b>	<b>7</b>
2.1	PROJECT LOCATION .....	7
2.2	FIELD SAMPLING RESULTS.....	7
<b>3.0</b>	<b>PURPOSE .....</b>	<b>8</b>
<b>4.0</b>	<b>TASK ORGANIZATION .....</b>	<b>9</b>
4.1	PROJECT STAFFING PLAN .....	9
4.1.1	PROJECT SUPERINTENDENT(PS) .....	9
4.1.2	SITE HEALTH AND SAFETY OFFICER(SHSO) .....	9
4.1.3	TASK QC MANAGER .....	9
4.1.4	TASK ENGINEER .....	9
4.2	QUALITY CONTROL.....	9
<b>5.0</b>	<b>REGULATORY COMPLIANCE.....</b>	<b>10</b>
5.1	REGULATORY PERMITS .....	10
5.2	WASTE MANAGEMENT .....	10
<b>6.0</b>	<b>TASK EXECUTION .....</b>	<b>11</b>
6.1	SAFETY .....	11
6.2	TASK SCHEDULE.....	11
6.3	MOBILIZATION .....	11
6.4	WORK SEQUENCE/METHODS.....	11
6.5	EQUIPMENT .....	13
6.6	WASTE TRANSPORT & DISPOSAL.....	13
6.7	TEMPORARY WASTE PROTECTION & STAGING.....	14
6.8	DECONTAMINATION .....	14
<b>7.0</b>	<b>ENVIRONMENTAL MONITORING .....</b>	<b>15</b>
7.1	SOIL.....	15
7.2	SURFACE WATER .....	15
7.3	AIR.....	16
7.4	STANDARD OPERATING PROCEDURES: .....	16
<b>8.0</b>	<b>REFERENCES .....</b>	<b>17</b>

analysis analyses

## 1.0 INTRODUCTION

### 1.1 CONSTRUCTION WORK PLAN

Stone & Webster has been contracted by the United States Army Corps of Engineers, Kansas City District, under Site-Specific Environmental Restoration Contract (SSERC) No. DACW41-99-D-9001, Task Order 0002, to perform a time-critical removal action at the Howcroft Swale and contiguous Lodi Brook in Maywood, New Jersey.

The purpose of this Construction Work Plan is to establish the construction philosophy and plan of execution for the time-critical removal action (the "Work") within the Howcroft swale and Lodi Brook. The Work consists of removal of contaminated sediments from the drainage swale for the purpose of restoring free drainage flow, grading of the embankments, and stabilization of the banks and swale invert to provide erosion protection against future high-flow and flood events. Excavated sediments found to be contaminated will be disposed of off-site in accordance with applicable state and federal regulations. The purpose of this Work is an interim fix to potential flooding and related erosion effects. This Work is not intended to remediate contamination in proximity to, and including underneath the swale and brook.

The scope of the Work has been defined by the *Time Critical Removal Action Work Plan* (TCRAWP), dated January 26, 2000. Modifications to the scope of work, as presented in the TCRAWP, have been made to provide greater clarity of design, to address the proposed method of construction, and in response to value engineering. These changes affect the initial site preparation and the final stabilization effort. They do not modify the primary intention of the project: that of removing contaminated sediments from the channel to improve the drainage hydraulics of the swale and brook, and the contouring and stabilization of the swale invert and banks.

This Construction Work Plan and attached redlined design drawings specify how Stone & Webster will implement the time-critical removal action.

### 1.2 BACKGROUND

Extremely heavy rainfall associated with Hurricane Floyd on September 16-17, 1999, and additional heavy rains over the following two weeks created regional and localized flooding. The extremely heavy rainfall caused the swale that accepts drainage from Howcroft Road storm water discharge pipe to backup due to sedimentation within the swale. Some of the sediments in the swale contain elevated levels of radium-226, thorium-232, and uranium-238. Field sampling results show that there are no hazardous contaminants in the soil to be removed. The sediments require removal to minimize the potential that additional rainfall might cause the migration and continued release of hazardous contaminants from parts of the FUSRAP Maywood Superfund Site onto adjacent and nearby properties.

Given this situation, the USACE has determined the need to perform a time-critical removal action (TCRA) to remove contaminated sediments from a drainage swale in the vicinity of the Maywood Interim Storage Site (MISS) so that the flow can be restored.

Contaminated and non-contaminated sediments within the swale & Lodi Brook will be removed as defined by the TCRA Work Plan (TCRAWP) and corresponding design drawings as revised. All

contaminated soil, vegetation, and debris will be transported to the MISS for storage pending characterization and final disposal at a permitted facility. After the removal of the sediments, additional measures will be taken to stabilize surfaces and reduce the potential for future erosion and transport of sediments.

This Construction Work Plan (CWP) and related design drawings specify how Stone & Webster will implement the TCRA.

The intent of the TCRA is to: reestablish the hydraulic grade in the swale & Lodi Brook to allow for unimpeded drainage, to prevent the back up and flooding caused by heavy runoff in the area, and to reduce the potential for swale sediments to be eroded & transported off-site. This action is not intended to be the final cleanup of this area. Further remedial action will be planned and designed following issuance of the ROD.

Contaminated soil will be transported to the MISS. The waste material removed will be combined with other waste soil for disposal later this year.

## **2.0 SITE DESCRIPTION**

### **2.1 PROJECT LOCATION**

The TCRA is located on or adjacent to six of the properties that abut the Lodi Brook & Swale as shown on Attachment #1.

The drainage swale originates at a culvert near 23 West Howcroft Road and runs adjacent to the properties listed below:

- 23 West Howcroft Road (Maywood Furniture Corp./Maywood Equipment Corp.)
- 29 NJ Route 17 N (FedEx Building)
- 85-101 NJ Route 17 N (Architectural Windows Building)
- 137 NJ Route 17 N (Uniform Fashions Building)
- 167 NJ Route 17 N (Former Sunoco Gas Station)
- 149-151 Maywood Avenue (SLS)

### **2.2 FIELD SAMPLING RESULTS**

Soil and water samples from the swale and the immediate surrounding area were collected and analyzed by an off-site laboratory to determine radioactive and chemical concentration.

Results of sampling completed to date are included in Attachment 2.

The sampling results show that there are no hazardous contaminants in the soil to be removed. There is radiological contamination in the piles north of the swale, in the swale and in Lodi Brook sediments. The piles south of the swale near FedEx are not contaminated.

### **3.0 PURPOSE**

The proposed removal action consists of the removal of contaminated sediments currently impeding flow in the drainage swale and culverts. After the removal of sediments, additional measures will be taken to restore the normal hydraulic flow of the channel and prevent future erosion & re-deposition of contaminated sediments. These measures may consist of installing erosion control devices on the site and in the swale and/or sediment traps in the swale. It is estimated that 700 cubic yards of radiologically contaminated sediments require removal from the culvert and drainage swale. Removal of contaminated sediments from the swale will be accomplished with conventional earth-moving equipment. These sediments will be transported to the MISS, dewatered, characterized for disposal, and transported to an authorized disposal facility in accordance with the approval Project MHTDP.

## **4.0 TASK ORGANIZATION**

### **4.1 PROJECT STAFFING PLAN**

The organization chart for this project is provided in Attachment # 3.

#### **4.1.1 Project Superintendent(PS)**

The PS will coordinate all daily site operations and enforce HASP implementation. He shall also be responsible for the coordination of all subcontractors.

#### **4.1.2 Site Health and Safety Officer(SHSO)**

The SHSO will be responsible for the enforcement of the HASP, air monitoring, sampling, training, and coordination of medical surveillance for all site personnel. The SHSO has a communication line to the Program Health and Safety Manager. The SHSO also has "stop work" authority if unsafe conditions arise.

#### **4.1.3 Task QC Manager**

The QC Manager is responsible for implementing the three phases of Quality Control in accordance with Construction Quality Control Plan for the Time Critical Removal Action

#### **4.1.4 Task Engineer**

The Task Engineer is responsible for providing the PS support during construction activities and review field conditions as they affect the design and environmental monitoring,

### **4.2 QUALITY CONTROL**

The Site Specific CQC Plan for this Task has been prepared as an addendum to the Final Contractor Control Program Plan (Stone & Webster, 1999) and will be submitted with this Construction Work Plan.

## 5.0 REGULATORY COMPLIANCE

### 5.1 REGULATORY PERMITS

The *Action Memorandum, Time-Critical Removal Action, Removal of Contaminated Sediments at Vicinity Properties of the Maywood Interim Storage Site (MISS) CERCLIS #NJD980529762* was approved by the USACE in December 1999 and cites Section 104(a)(1)(A) of CERCLA as the basis of authorization for the Removal Action. Section 104(a)(1)(A) provides that the President may undertake a removal action "...whenever any hazardous substance is released or there is a substantial threat of such release into the environment."

The United States Environmental Protection Agency (USEPA) and New Jersey department of Environmental Protection (NJDEP) Project Managers for the Maywood Site were notified of the TCRA. Both the USEPA and NJDEP were issued copies of the TCRAWP.

The USACE has submitted a Permit Equivalency Document for a Statewide General Permit No. 4 for the activities that will be performed as part of the TCRAWP. In addition, the Permit Equivalency Document requested a Letter of No Jurisdiction, in accordance with New Jersey Administrative Code (NJAC) 7:7A *et seq.* and 7.13 *et seq.* from the NJDEP regarding stream encroachment regulations. The Permit Equivalency Document is included in Appendix D of Reference #1.

A Permit Equivalency Document for soil erosion and sediment control has been prepared and filed with the Soil Conservation Service (SCS). A copy of this document is included in Appendix D of Reference #1.

### 5.2 WASTE MANAGEMENT

Soil transportation will be in conformance with the MHTDP that addresses the actions necessary to ensure compliance for the management of waste generated from the FUSRAP Maywood Superfund Site.

## 6.0 TASK EXECUTION

### 6.1 SAFETY

Attachment #5 provides the Activity Hazard Analysis for this Task

### 6.2 TASK SCHEDULE

Attachment # 4 presents the schedule for this task

### 6.3 MOBILIZATION

Mobilization and initial site preparatory work shall consist of:

- Utility layout by One Call
- Establish survey controls
- Install temporary fencing
- Install silt fence/hay bales
- Construct access roads at Sears and the backside of Sunoco Station
- Post appropriate signs and radiation controls
- Construct gravel lay-down area for soil load-out and transport
- Pump clean water out of culvert at Howcroft Rd.
- Install temporary obstruction dam at station 6+75 and 0+40
- Install road plates at Lodi Brook crossing
- Cut trees along swale and Lodi Brook as needed

### 6.4 WORK SEQUENCE/METHODS

1. Remove soil piles along the north side of swale between sta. 0+40 to 5+25 using a front-end loader to stockpile material near load-out area for transport to MISS. Stockpiles will be covered with poly. Until transported, first phase of swale reconstruction will start at the dam at sta.0+40 and proceed east to sta.5+00 using an excavator to cut the south side to a 2to1 slope, the flow line to proposed grade, and drawing wet material onto north bank to dewater. Piled material will be covered with poly until dewatered.
2. Dewatered soil will then be removed using an excavator to cut North side to a 2to1 slope and a front-end loader to carry soil to the load out area. At the load-out area, the front-end loader will place soil into 30 c.y. watertight roll-off boxes lined with poly. The roll-off will then be filled to legal limits and covered with a trampoline for transport. Once ready, a roll-off truck will drop off a clean box and pick up the loaded box .The truck will be surveyed and inspected before leaving for MISS.

3. Once at MISS, the roll-off will be dumped in approved area. A decon station will set up to wash tire and box if needed. The truck and roll-off will then return to load-out area after being surveyed clean. This procedure will be followed throughout the transport of soil.
4. Once the swale is cut to proposed grade and alignment in this area, hay bales will be placed every 100 ft. in flow line and one on either side up the slope and double staked until vegetation is established.
5. Equipment will then be given a gross decon removing all loose soil from bucket, track and undercarriage. When completed, equipment will be walked through parking lot at Desaussure to south side of swale between sta. 5+00 and 6+75.
6. Piles in south of the Swale by FedEx will be leveled off and left in place. If clean, the excavator will cut north side to a 2to1 slope and draw material to south bank to dewater. Piles will be covered until dewatered.
7. Once soil is dewatered, south slope will be cut to grade and alignment and loaded into roll-off boxes staged on poly to prevent contamination of area. When filled to legal limits and tarped, empty box will be dropped off and full box pick-up. Truck will be surveyed and inspected and proceed to MISS and follow step 3&4.
8. When finished in this area, equipment will be gross deconed. The equipment will then be moved to Sunoco Station by low-bed via Sears Distribution road.
9. Once at Lodi Brook area excavator draw material from flow line up onto the West Bank to dewater. Piles will be covered with poly until dewatered. Once dewatered, piles will be loaded into lined roll-off boxes and then tarped. Roll-off truck will drop off an empty box and pick up the filled container. Truck will be surveyed and inspected and released to MISS and follow steps 3&4.
10. After the excavation is done, soil samples for radiological analysis will be collected every 25 linear feet. Individual samples will be taken from the base and side slopes. These samples will be analyzed in the MISS on-site gamma spectroscopy laboratory using a Canberra Model 3020, 30% P-Type Coaxial HPGe Detector. Ten percent of the radiological samples will be sent off-site for laboratory analysis. These samples will be for QA/QC purposes.
11. In addition, soil samples will be taken every 100 feet for chemical analysis. Sample containers and preservatives will be selected based on Tables 4-1 and 4-2 of the CDQMP Quality Assurance Project Plan (QAPP). Encore samplers will be used to collect samples for volatile organic compound (VOC) analysis. Each chemical sample will be consigned to Severn Trent Laboratories (or then approved project laboratory) for pickup at the MISS the day the samples are collected. Samples will be analyzed for target compound list (TCL) and target analyte list (TAL) constituents in accordance with the appropriate SW-846 methods (see section 8.4 of the TCRAWP). A 30-day turnaround time is required. Testing of samples shall be performed in accordance with the Contract Laboratory standard operating procedures (SOPs) contained in Appendix D of the CDQMP.
12. After evaluation of the above results by S&W & the USACE, the method of surface stabilization will be determined.
13. Upon approval of the USACE, the swale and brook will have surface restoration installed such as filter fabric and hydroseed as required.
14. Obstruction dams will be removed.

15. Temporary fencing will remain in place until vegetation is established, then it will be removed.
16. All poly sheeting will have a minimum thickness of 4 mils.

## 6.5 EQUIPMENT

The following equipment is anticipated to support this work:

- Excavator 65,000 lbs. Class
- Front-end loader 3 ½ to 4 c.y.
- 3 roll-off boxes 30 c.y.
- Roll-off truck 80,000lbs. G.V.W.
- ¾ ton pick-up
- 2 generators
- 3-inch. Elec. Pump w/hose

## 6.6 WASTE TRANSPORT & DISPOSAL

All excavated contaminated soils, vegetation, and debris will be transported to the MISS for temporary storage pending characterization and final disposal at a permitted facility. Each truck leaving the Removal Action work area site will be decontaminated and surveyed to assure that no contaminated materials leave in an uncontrolled manner.

All trucks will follow designated routes to and from the MISS. The routes have been established for safety and to reduce encumbrances to adjacent property owners. Trucks that are loaded north of the swale will proceed as described below. They will return to the work area by following the route in reverse:

- Exit the work area and follow the SLS Private Road (Block 124 Lot 30) to Maywood Avenue.
- Turn left onto Maywood Avenue and proceed north on Maywood Avenue.
- Turn left onto West Hunter Avenue and proceed west on West Hunter Avenue.
- Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

Trucks that are loaded south of the swale will proceed as described below. They will return to the work area by following the route in reverse:

- Exit the work area in an easterly direction and follow West Howcroft Avenue to Maywood Avenue.
- Turn left onto Maywood Avenue and proceed north on Maywood Avenue.
- Turn left onto West Hunter Avenue and proceed west on West Hunter Avenue.
- Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

As an alternative, trucks that are loaded west of Lodi Brook (former Sunoco, Block 124 Lot 2) may proceed as follows:

- Exit the work area and proceed onto NJ Route 17 North
- Follow NJ Route 17 North
- Turn right onto Hergesell Avenue and proceed to West Central Avenue.
- Turn left onto West Central Avenue and proceed east to Maywood Avenue.
- Turn right onto Maywood Avenue and proceed south to West Hunter Avenue.
- Turn right onto West Hunter Avenue and proceed west on West Hunter Avenue. Go through the Stepan Company gate.
- Go through the MISS gate and proceed to the soil staging area.

Trucks returning to the former Sunoco, Block 124 Lot 2, will proceed as follows:

- Exit the MISS and Stepan Company gates onto West Hunter Avenue.
- Proceed east on West Hunter Avenue to Maywood Avenue.
- Turn right onto Maywood Avenue and proceed south to Essex Street.
- Turn right onto Essex Street and proceed west to the NJ Route 17 North on-ramp.
- Turn right onto the NJ Route 17 North on-ramp.
- Follow the on-ramp to Block 124 Lot 2.
- Turn right onto Block 124 Lot 2.

At the MISS, the FUSRAP materials will be off-loaded per the direction of the MISS Site Superintendent. The MISS Site Superintendent will obtain custody of the materials and manage them appropriately. Materials will be placed adjacent to other materials. Materials will be graded, and covered with poly and sandbagged at the end of each shift.

The exterior of each truck and container leaving the MISS will be decontaminated and surveyed to assure that no contaminated materials leave the MISS in an uncontrolled manner. When appropriate, each truck will be washed or brush cleaned.

## **6.7 TEMPORARY WASTE PROTECTION & STAGING**

All stockpiled material will be covered with poly and sandbagged at the end of each shift at both the construction sites and MISS.

## **6.8 DECONTAMINATION**

Excavator and loader will be transported via truck low-bed to main decontamination pad at the MISS to be pressure washed. When in transport, tires, tracks, and buckets will be wrapped in poly until unloaded at MISS. All tools, fence posts, etc. will also be pressure washed and put back into general use.

## 7.0 ENVIRONMENTAL MONITORING

Environmental Monitoring will be in accordance with the CDQMP and the FUSRAP Maywood Superfund Site General Environmental Protection Plan (GEPP). Media to be monitored during the remedial action include soil, surface water, and air.

### 7.1 SOIL

Excavation at the swale and Lodi Brook will generate waste soils, vegetation, and debris. Contaminated materials will be transported to the MISS. Therefore, it will be necessary to both monitor and sample excavated materials during the excavation. For radiological monitoring, soil will be surveyed with a sodium iodide meter per CDQMP procedure SW-MWD-404. For chemical monitoring, soil will be surveyed with a photo-ionization detector per CDQMP procedure SW-MWD-401 or a flame ionization detector per CDQMP procedure SW-MWD-402.

After the appropriate hydraulic grade and alignment have been developed, and no additional excavation is required, soil samples will be collected from the base and side slopes for radiological and chemical analysis in accordance with Section 8.0 of Reference #1. This information will be used during the future remedial design phase to determine if any additional remedial activities will be necessary in the removal action area.

### 7.2 SURFACE WATER

Downgradient surface water will be monitored to determine if surface water quality is being impacted by the construction. Surface water samples will be collected within Lodi Brook immediately north of NJ Route 17 North. The location will be the same as that sampled as part of the GEPP environmental monitoring program. Surface water samples will be collected one day prior to and at the end of each day sediment soils are disturbed when there is flow in the swale. An additional surface water sample will be collected immediately following the completion of the removal action and one-week thereafter.

Sample containers and preservatives will be selected based on Tables 4-1 and 4-2 of the CDQMP QAPP. Each surface water sample will be consigned to Severn Trent Laboratories (or the existing project laboratory) for pickup at the MISS, the day the samples are collected. Each filtered sample will be analyzed for radium-226, thorium-232, and uranium-238. A 30-day turnaround time will be required. Testing of samples shall be performed in accordance with the Contract Laboratory standard operating procedures (SOPs) contained in Appendix D of the CDQMP.

All surface water sampling will be in accordance with the CDQMP. The following CDQMP procedures will be implemented:

- SW-MWD-302 – Surface Water Sampling
- SW-MWD-504 – Labeling, Packaging and Shipping Environmental Samples
- SW-MWD-506 – Decontamination
- SW-MWD-507 – Field Notebook Content and Control
- SW-MWD-508 – Procedure for Shipping Radiologically Contaminated Environmental Samples

### 7.3 AIR

Air monitoring will be conducted in accordance with the FUSRAP Maywood Superfund Site Safety and Health Plan (SSHP), Section 8.0 "Air Monitoring Program." Both personal and ambient air monitoring will be performed. Real-time (direct reading) instruments will measure the following:

- Oxygen
- Flammable/combustible vapors
- Organic vapors
- Dust

Action levels above background have been established for oxygen, flammable and combustible vapors, organic vapors, and dust. Those levels and associated actions are:

- |  |   |
|--|---|
| • Oxygen (At work site)                | <20% - stop work                          |
| • Lower explosive level (At work site) | > 10% - stop work                         |
| • Organic Vapors (At work site)        | 5 ppm – upgrade PPE<br>10 ppm – stop work |
| • Dust (At work site)                  | 1 mg/m <sup>3</sup> – upgrade PPE         |

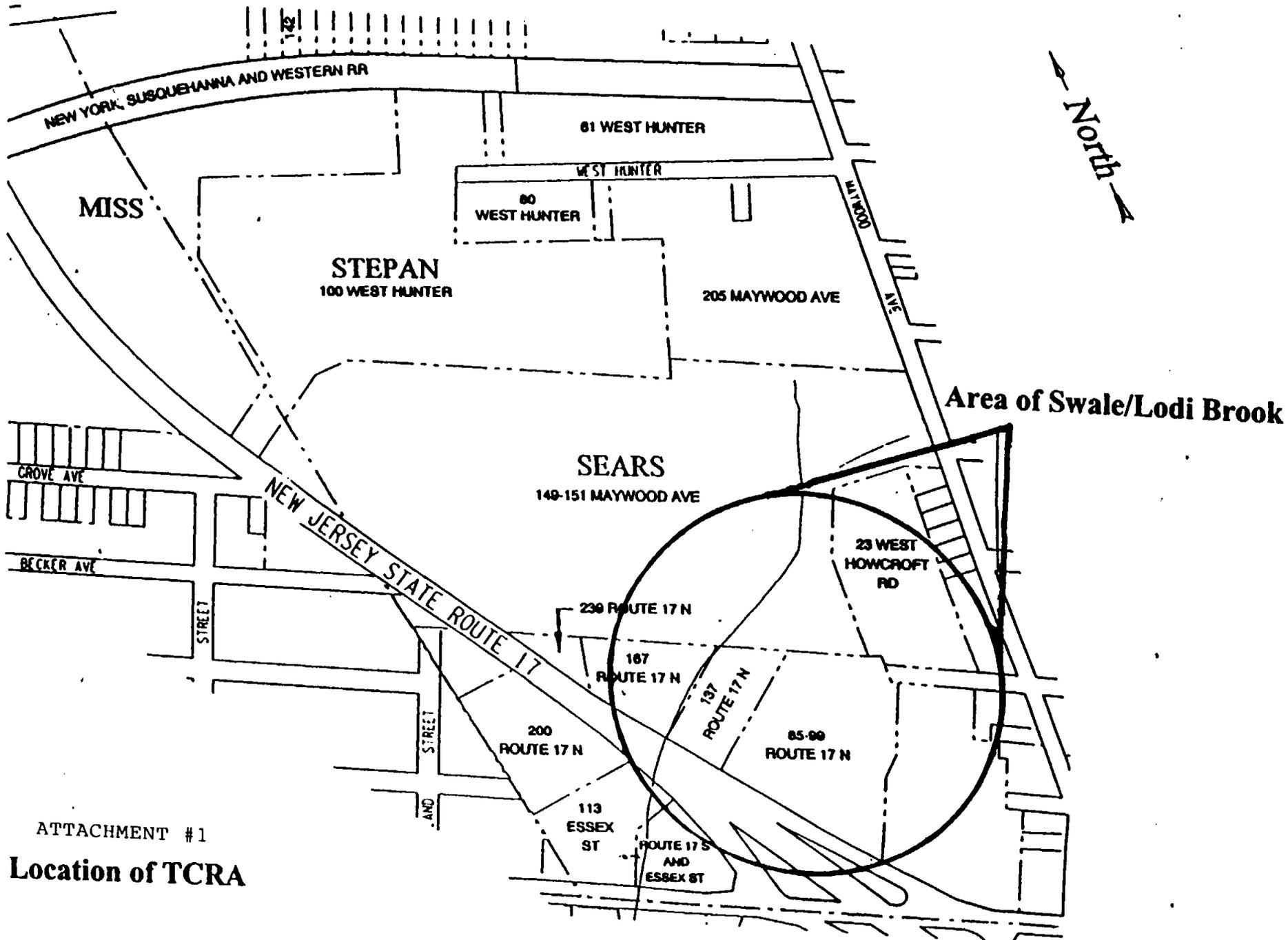
In addition, both personal and ambient air monitoring will be performed for airborne radioactive particulate using the appropriate air sampling equipment. Radioactive air sample analysis will be accomplished by gross alpha counting utilizing a low background gas flow proportional detector, and/or by alpha spectroscopy.

### 7.4 STANDARD OPERATING PROCEDURES:

All health and safety support will be conducted in accordance with the standard operating procedures contained within the Stone & Webster Site Safety & Health Plan (SSHP) dated August 6, 1999. Additionally, all sampling activities will be conducted in accordance the standard operating procedures contained within the Chemical Data Quality Management Plan (CDQMP).

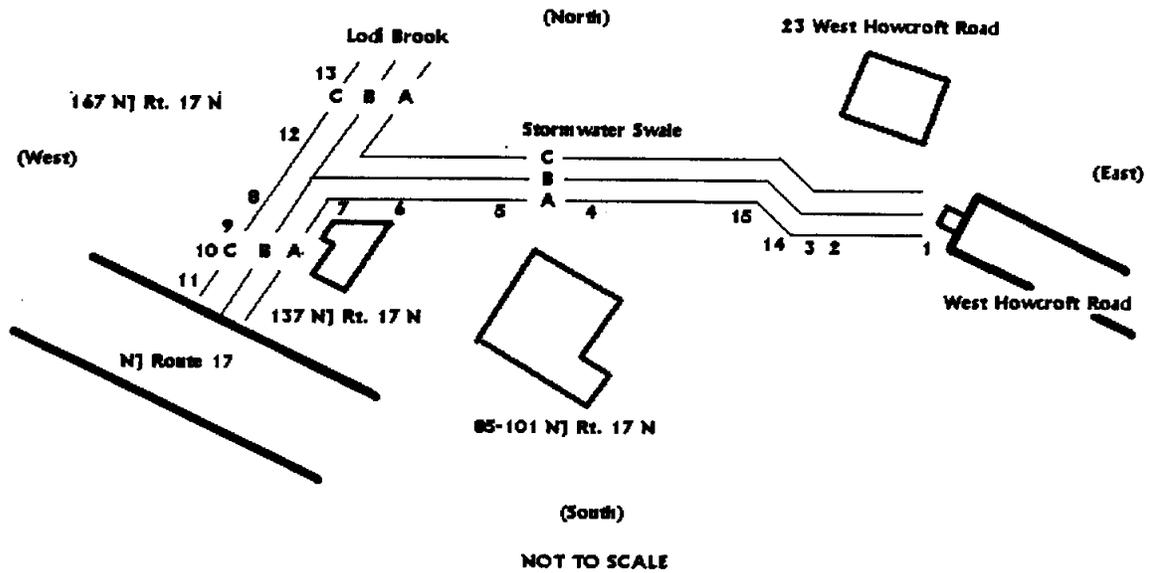
## 8.0 REFERENCES

*Time Critical Removal Action Work Plan* dated January 26, 2000



ATTACHMENT #1  
**Location of TCRA**

Figure 2  
1999 Swale/Lodi Brook Sampling Locations



**Table 1**  
**1999 Swale/Lodi Brook Sediment Sampling**  
**Radiological Analyses (pCi/g)**

SAMPLE ID	Depth Interval (Average)																	
	0-0.5 Feet			0.5-1.0 Feet			1.0-1.5 Feet			1.5-2.0 Feet			2.0-2.5 Feet			2.5-3.0 Feet		
	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238	Ra-226	Th-232	U-238
1A	0.468	0.947	ND	0.454	0.751	0.285	0.358	0.546	ND	0.372	0.631	ND						
2C	0.466	0.595	ND	0.504	0.537	ND	0.411	0.525	ND	0.457	0.491	ND				0.49	0.58	0
3C	0.585	2.21	0.952	0.6	1.12	0.922	0.637	0.961	2.39									
14C	0.436	0.733	ND	0.488	0.635	ND	0.555	0.828	2.881	0.523	0.672	ND	1.876	8.249	ND			
15C	<b>5.361</b>	<b>71.003</b>	22.556	1.999	<b>99.145</b>	17.94	1.276	<b>6.515</b>	0.685	1.232	<b>7.466</b>	ND						
4C	<b>7.185</b>	<b>80.1</b>	ND	4.175	<b>124.13</b>	39.1	1.71	<b>16.94</b>	7.3									
5C	<b>7.27</b>	<b>64.52</b>	ND	<b>5.94</b>	<b>51.37</b>	17.8	3.01	<b>19.73</b>	ND	1.45	<b>7.46</b>	0.75						
6B	3.86	<b>47.37</b>	13.26	3.87	<b>44.08</b>	14.59												
7B	2.42	<b>27.75</b>	22.74	1.72	<b>10.29</b>	14.96	0.599	1.25	1.9									
8A	1.54	<b>6.16</b>	8.25															
9C	1.62	<b>9.96</b>	7.66	1.41	<b>7.64</b>	4.32	0.739	1.86	ND									
10A	0.679	2.06	ND	0.586	0.818	ND	0.505	0.64	ND									
11A	0.504	1.94	ND	0.478	0.672	ND												
12A	2.823	<b>12.256</b>	2.585	1.538	1.548	1.398												
13A	2.811	<b>16.307</b>	ND	1.112	1.459	1.852												
Average	2.535	22.927	5.200	1.777	24.585	8.083	0.98	4.980	1.516	0.807	3.344	0.15	1.876	8.249		0.49	0.58	0

Notes: Results have not been corrected for background.

Bold indicates that the concentration exceeds 5 pCi/g for radium-226 and thorium-232, and 50 pCi/g for uranium-238.

Samples were collected in October 1999.

Areas shaded represent soils not sampled.

**Table 2**  
**1999 Swale/Lodi Brook Surface Water Samples**  
**Radiological Analyses (pCi/l)**

Sample ID	Radium-226	Thorium-232	Uranium-238
SWDH-1	0.27	0.21	0.06
SWDH-2	-0.01	0.04	0.17
SWDH-3	0.1	0.05	0.04
SWDH-4	-0.14	0.27	1.46
SWDH-5	0.18	0.65	1.69
SWDH-6	0.2	0.28	3.29
SWDH-7	0.25	0.1	11.78
SWDH-8	0.27	0.14	2.36
SWDH-9	0.1	-0.04	2.99
SWDH-10	-0.08	0.07	2.7
SWDH-11	0.09	0.03	3.08
SWDH-12	0.28	1.21	1.36
SWDH-13	0.35	0.07	0.96
SWDH-14	-0.02	0.05	0.11
SWDH-15	-0.25	0.25	0.14

Notes: Results have not been corrected for background.  
Water samples were filtered prior to analyzing.

**Table 3**  
**1999 Swale/Lodi Brook Sediment Samples**  
**Chemical Analyses<sup>(a)</sup>**

Sample ID	Lead <sup>(b)</sup> (mg/kg)	Total Chromium <sup>(c)</sup> (mg/kg)	Arsenic <sup>(d,e)</sup> (mg/kg)	Thallium <sup>(f,g)</sup> (mg/kg)
1	534			2.5
2	770			
3	502			
4	602	334	22.0	8.0
5				3.2
6		409	30.8	4.0
7		1300	29.5	4.7
8	428	432		
9				
10				4.8
11		282		

- Notes:
- (a) Results for selected metals which exceed NJ Residential Soil Cleanup Criteria, proposed rule, Cleanup Standards for Contaminated Sites, NJAC 7:26.
  - (b) NJ Residential Direct Contact Cleanup Criteria is 400 mg/kg.
  - (c) NJ Residential Direct Contact Cleanup Criteria is 240 mg/kg for hexavalent chromium and 120,000 mg/kg for trivalent chromium. For most of the results shown the hexavalent chromium contribution would have to be 30% or more for the criteria to be exceeded.
  - (d) NJ Residential Direct Contact Cleanup Criteria is 20 mg/kg.
  - (e) Cleanup standard proposed was based on natural background level.
  - (f) NJ Residential Direct Contact Cleanup Criteria is 2 mg/kg.
  - (g) Health criterion is lower than analytical limits; cleanup criterion is based on typical practical quantitation level.

**FUSRAP MAYWOOD SUPERFUND SITE  
Swale/Lodi Brook Sediment/Soil Sampling  
for RCRA/TCLP Analysis**

Sample ID	Matrix	Ignitability	Reactivity	Reactivity	Corrosivity	TCLP(Chromium)	TCLP(Lead)
			Cyanide(mg/kg)	Sulfide(mg/kg)			
08b020000 <sup>(1)</sup>	Soil	Not Ignitable	< 0.2	< 30	7.17	< 0.100	0.212
08b020001 <sup>(2)</sup>	Soil	Not Ignitable	< 0.2	< 30	6.55	< 0.100	0.386
08b020002 <sup>(3)</sup>	Soil	Not Ignitable	< 0.2	< 30	7.43	< 0.100	< 0.100
08b020003 <sup>(4)</sup>	Soil	Not Ignitable	< 0.2	< 30	7.12	< 0.100	< 0.100
08b020004 <sup>(5)</sup>	Soil	Not Ignitable	< 0.2	< 30	5.24	< 0.100	< 0.100
08b020005 <sup>(6)</sup>	Soil	Not Ignitable	< 0.2	< 30	6.91	< 0.100	< 0.100
08b020006 <sup>(7)</sup>	Soil	Not Ignitable	< 0.2	< 30	7.55	< 0.100	1.22

- (1) Stockpile adjacent to the swale along the south side at W. Howcroft Road.
- (2) Swale sediment composite from W. Howcroft Road to 180 ft west of W. Howcroft.
- (3) Stockpile adjacent to the swale along the north side.
- (4), (5), (6) each of these composite samples was collected over a 200 ft region for the entire length of 600 ft.
- (7) Swale sediment composite in Lodi Brook from NJ RT. 17 to 200 ft north.

**FUSRAP MAYWOOD SUPERFUND SITE  
Swale/Lodi Brook Sediment/Soil Sampling  
for Radiological Analysis**

Sample ID	Matrix	Radionuclide	Result (pCi/g)	Sediment Criteria
			pCi/g	pCi/g
08b020000 <sup>(1)</sup>	Soil	Ra-226	1.15	5
08b020000	Soil	Th-232	0.12	5
08b020000	Soil	U-238	1.09	50
08b020001 <sup>(2)</sup>	Soil	Ra-226	0.2	5
08b020001	Soil	Th-232	0.61	5
08b020001	Soil	U-238	0.99	50
08b020002 <sup>(3)</sup>	Soil	Ra-226	2.15	5
08b020002	Soil	Th-232		5
08b020002	Soil	U-238	11.41	50
08b020003 <sup>(4)</sup>	Soil	Ra-226	-0.5	5
08b020003	Soil	Th-232	1.08	5
08b020003	Soil	U-238	1.33	50
08b020004 <sup>(5)</sup>	Soil	Ra-226	0.17	5
08b020004	Soil	Th-232	1.02	5
08b020004	Soil	U-238	6.35	50
08b020005 <sup>(6)</sup>	Soil	Ra-226	0.74	5
08b020005	Soil	Th-232	2.92	5
08b020005	Soil	U-238	3.51	50
08b020006 <sup>(7)</sup>	Soil	Ra-226	1.92	5
08b020006	Soil	Th-232		5
08b020006	Soil	U-238	8.59	50

(1) Stockpile adjacent to the swale along the south side at W. Howcroft Road.

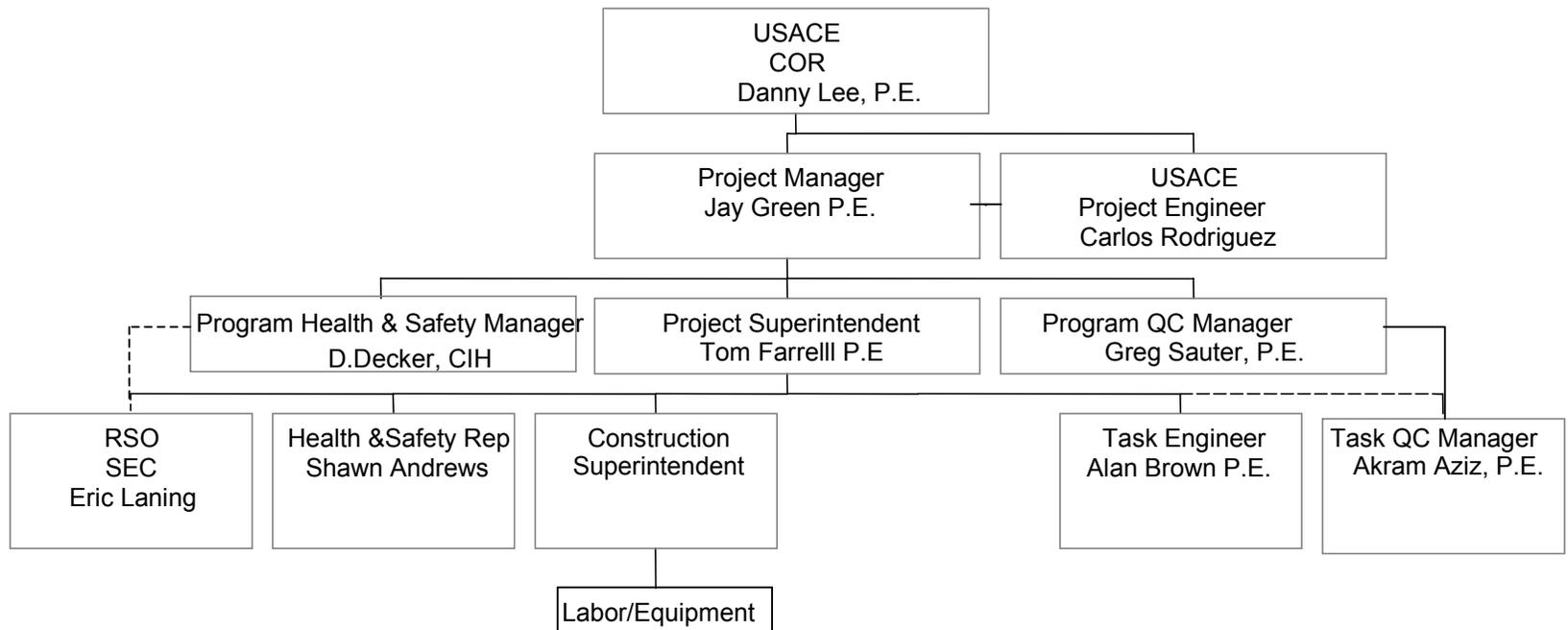
(2) Swale sediment composite from W. Howcroft Road to 180 ft west of W. Howcroft.

(3) Stockpile adjacent to the swale along the north side.

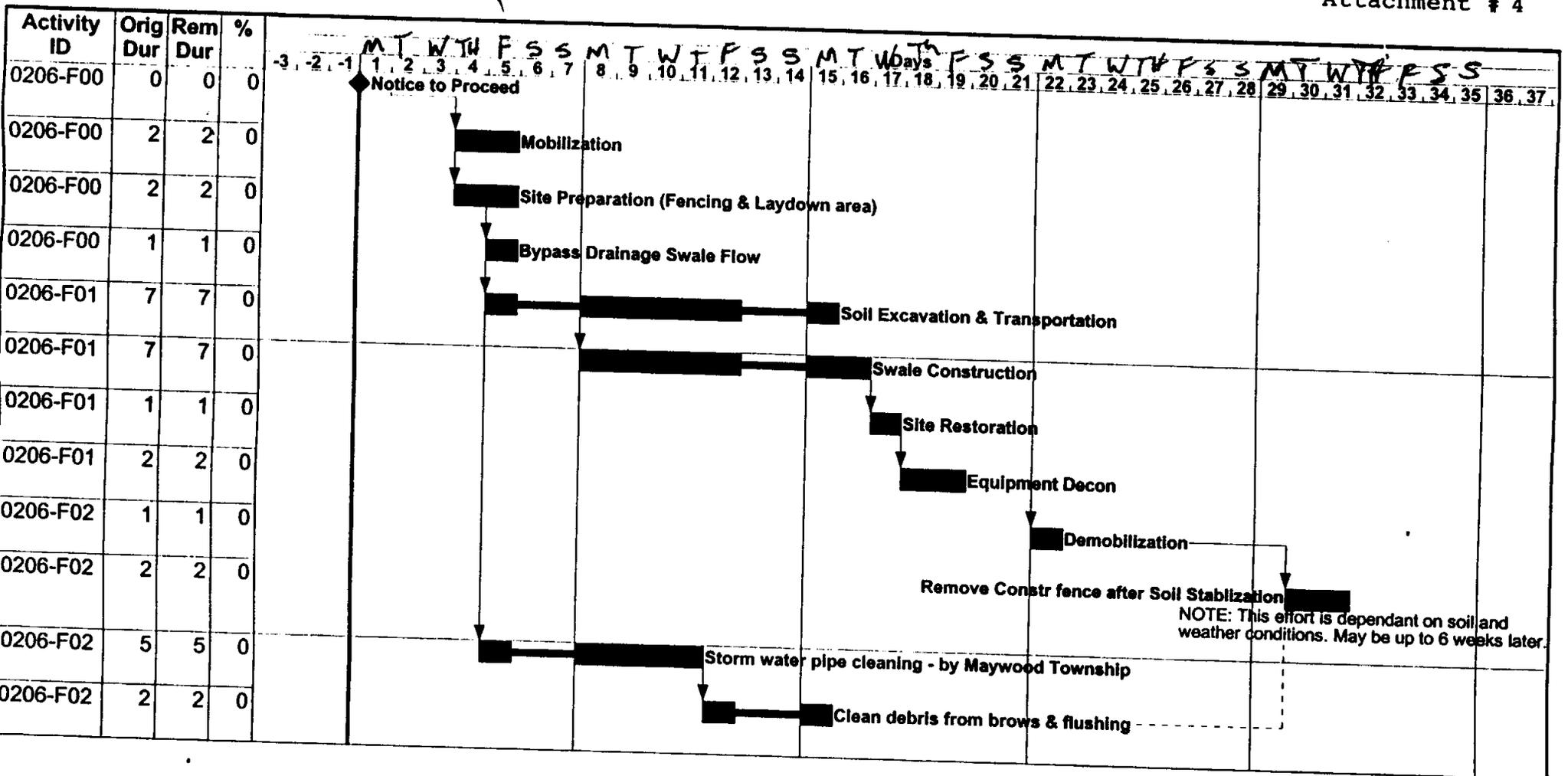
(4), (5), (6) each of these composite samples was collected over a 200 ft region for the entire length of 600 ft.

(7) Swale sediment composite in Lodi Brook from NJ RT. 17 to 200 ft north.

# USACE/STONE & WEBSTER TCRA TASK ORGANIZATION CHART



Attachment #3





Activity: Swale TCRA

Reviewed by/date: Dirk Decker, CIH / 2-14-00

**ACTIVITY HAZARD ANALYSIS**

PRINCIPAL STEPS	POTENTIAL HAZARDS	CONTROL MEASURES
<p>Unload equipment</p>	<p>Unfamiliarity with: site, general site hazards, project safety rules, chain of command, emergency procedures.</p> <p>Heavy lifting / strains, sprains.</p> <p>Use of mechanical equipment.</p>	<p>All personnel shall attend the site orientation training.</p> <p>No individual employee is permitted to lift any object that weighs over 60 pounds. Proper lifting techniques shall be used. Multiple employees or the use of mechanical lifting devices are required for lifting objects over the 60-pound limit.</p> <p>Only qualified personnel shall be permitted to operate equipment. Forklifts and mechanical equipment shall be inspected daily. Deficiencies in equipment shall be noted on the inspection form. Equipment found to be unsafe shall not be used.</p> <p>All equipment shall be operated at safe speeds and in a safe manner. Equipment operators shall wear safety belts and hearing protection.</p> <p>Ground personnel shall not position themselves between equipment and stationary objects and shall only approach equipment after a signal from the operator. Personnel shall maintain eye contact with the operator when approaching equipment. Personnel are prohibited from entering the swing radius of booms. Equipment load capacities shall not be exceeded.</p> <p>Personnel shall ensure all mechanical guards are in place and functioning properly. All equipment shall be shut down with energies dissipated prior to performing maintenance activities - lock out/tag out procedures may apply. Only qualified mechanics shall work on or repair heavy equipment.</p>
<p><b>PERSONNEL EQUIPMENT</b></p>	<p><b>INSPECTION REQUIREMENTS</b></p>	
<p>Forklifts/heavy equipment; Level D PPE Slings, chains, ropes</p>	<p>Site inspections (daily) Forklifts/heavy equipment (daily)</p>	<p>Site orientation; Forklift operation; Qualified operators; Lifting/back safety</p>

Activity: Swale TCRA  
 Reviewed by/date: Dirk Decker, CIH / 2-14-00

**ACTIVITY HAZARD ANALYSIS**

PRINCIPAL STEPS	POTENTIAL HAZARDS	CONTROL MEASURES
<p>Unload equipment</p>	<p>Unfamiliarity with: site, general site hazards, project safety rules, chain of command, emergency procedures.</p> <p>Heavy lifting / strains, sprains.</p> <p>Use of mechanical equipment.</p>	<p>All personnel shall attend the site orientation training.</p> <p>No individual employee is permitted to lift any object that weighs over 60 pounds. Proper lifting techniques shall be used. Multiple employees or the use of mechanical lifting devices are required for lifting objects over the 60-pound limit.</p> <p>Only qualified personnel shall be permitted to operate equipment. Forklifts and mechanical equipment shall be inspected daily. Deficiencies in equipment shall be noted on the inspection form. Equipment found to be unsafe shall not be used.</p> <p>All equipment shall be operated at safe speeds and in a safe manner. Equipment operators shall wear safety belts and hearing protection.</p> <p>Ground personnel shall not position themselves between equipment and stationary objects and shall only approach equipment after a signal from the operator. Personnel shall maintain eye contact with the operator when approaching equipment. Personnel are prohibited from entering the swing radius of booms. Equipment load capacities shall not be exceeded.</p> <p>Personnel shall ensure all mechanical guards are in place and functioning properly. All equipment shall be shut down with energies dissipated prior to performing maintenance activities - lock out/tag out procedures may apply. Only qualified mechanics shall work on or repair heavy equipment.</p>
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	
<p>Forklifts/heavy equipment; Level D PPE            Slings, chains, ropes</p>	<p>Site inspections (daily)            Forklifts/heavy equipment (daily)</p>	<p>Site orientation; Forklift operation; Qualified operators;            Lifting/back safety</p>

### ACTIVITY HAZARD ANALYSIS

Activity: Swale TCRA

Reviewed by/date: Dirk Decker, CIH. / 2-14-00

DANGEROUS STEPS	POTENTIAL HAZARDS	RECOMMENDATIONS
<p>Unload equipment (continued)</p>	<p>Use of rigging.</p> <p>Overhead.</p> <p>Slips, trips, falls.</p> <p>Hand injuries.</p> <p>Electrical.</p> <p>Fire.</p>	<p>Rigging shall be inspected before each use. Deficiencies shall be noted on the inspection form. Rigging found to be unsafe shall not be used and shall be tagged and taken out of service.</p> <p>Equipment operators must remain aware of overhead power lines and maintain safe clearances - use spotters when necessary. Personnel shall never stand under suspended loads.</p> <p>Keep work areas clear and maintain housekeeping. Personnel shall not jump from equipment or elevated surfaces. Unloaded equipment and materials shall be appropriately stored in an orderly fashion.</p> <p>Items to be handled shall be inspected for sharp edges prior to being handled. Personnel shall wear leather gloves when handling sharp materials. Personnel shall be aware of and avoid pinch point hazards.</p> <p>GFCI's shall be used on all power tools and extension cords. Extension cords, power tools, and lighting equipment shall be inspected before each use, protected from damage, and kept out of wet areas.</p> <p>Engines shall be shut off before refueling. A 20-pound ABC fire extinguisher shall be available at refueling areas. Smoking shall not be permitted near fueling areas.</p>
<p><b>EQUIPMENT TO BE USED</b></p> <p>Forklifts/heavy equipment; Level D PPE Slings, chains, ropes; Fire extinguisher Leather gloves GFCI</p>	<p><b>INSPECTION REQUIREMENTS</b></p> <p>Site inspections (daily) ); Fire extinguisher (weekly) Forklifts/heavy equipment (daily) Slings, chains, ropes (before each use) Hand tools/extension cords (before each use)</p>	<p>Site orientation Lifting/back safety; Fire extinguisher Rigging safety</p>





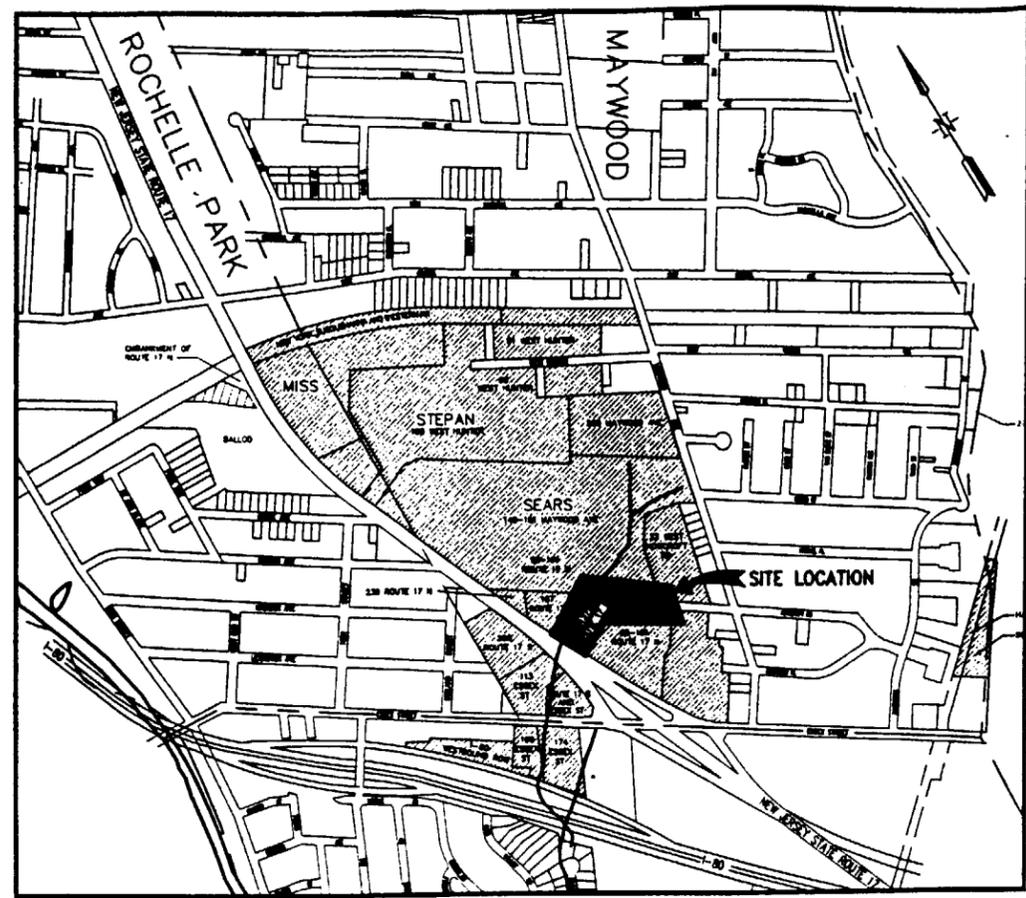




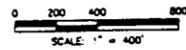
BRING UP STEPS	POTENTIAL HAZARDS	
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	
Radiation monitor CGI/O <sub>2</sub> /CO meter	Site inspections (daily) Heavy Equipment (daily) Heavy Equipment decontamination (before leaving area) Excavation (daily)	Site orientation HAZWOPER

PRINCIPAL STEPS	POTENTIAL HAZARDS	CONTROL MEASURES
<p>Backfill excavation</p> <p>Equipment decontamination</p>	<p>Chemical/radiological contamination.</p> <p>Open excavations.</p> <p>See hazards listed above for Principal Step 'Excavate contaminated soil'.</p> <p>Chemical/radiological contamination.</p>	<p>Exclusion Zones must be defined and CRZ must be set up before beginning loading of contaminated soil. Personnel shall wear Level-D Modified PPE as required by the SSHP and Radiation Work Permit (RWP). TLDs shall be worn by personnel working in restricted area. Monitor for radiation upon exit from contaminated areas. Monitoring for chemicals shall be performed. Monitoring for radiation shall be performed by an HPT or RSO. All personnel shall follow instructions given by SSHO, RSO, and HPT. See Table 5 for Action Level Summary.</p> <p>Personnel shall not enter excavations unless protective systems are in place. Perimeter protection shall remain in place until excavations are backfilled. Excavations shall be backfilled as quickly as possible after confirmation sampling has been completed.</p> <p>See controls listed above for Principal Step 'Excavate contaminated soil'.</p> <p>Personnel shall wear Level-D Modified PPE as required by the SSHP and Hazardous Work Permit (HWP). Personnel pressure washing equipment shall wear modified Level-C PPE as required by the SSHP and Hazardous Work Permit HWP). TLDs shall be worn by personnel working in restricted area. Equipment shall be monitored for radiation after decontamination has been completed. Monitoring for radiation shall be performed by an HPT or RSO. All personnel shall follow instructions given by SSHO, RSO, and HPT. Air monitoring as required in Table 5-1. See Table 5-1 for Action Level Summary.</p>
<p><b>EQUIPMENT TO BE USED</b></p> <p>Thermoluminescent dosimeter (TLD); Level D PPE Radiation monitoring equipment; PID or FID</p>	<p><b>INSPECTION REQUIREMENTS</b></p> <p>Site inspections (daily) Excavation (daily)</p> <p>Site orientation HAZWOPER; Excavation competent person</p>	

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED PRACTICES
<p>Equipment decontamination (continued)</p>	<p>Injury from steam/pressure washers.</p> <p>Slips, trips, falls.</p> <p>Electrocution.</p> <p>Caught between/crushed by equipment</p>	<p>Personnel shall be trained in the use of steam/pressure washing equipment. The spray from such equipment shall only be directed at surfaces to be cleaned and never at body parts or other personnel. Face protection shall be worn by all personnel associated with the use of steam/pressure washers. Only wands that are 4 ft long will be used. Rain gear shall be worn by personnel in addition to other PPE.</p> <p>Personnel shall be cautious when walking/working on slippery surfaces. Personnel lifts or scaffolding shall be used when access to the tops of equipment must be gained to clean. Fall protection shall be used when working at heights greater than 6 feet. Good housekeeping shall be maintained in decontamination area.</p> <p>GFCI shall be used on all electrical equipment. Extension cords shall be inspected before each use, protected from damage, and kept from laying in puddles of water.</p> <p>All equipment shall be shut off and a positive means taken to prevent its operation prior to decontamination. All dump beds on trucks shall be blocked if bed is cleaned in raised position.</p>
<p>Steam/pressure washers; Level D PPE GFCI</p>	<p>Site inspections (daily) Excavation (daily) Equipment (post decontamination)</p>	<p>Site orientation HAZWOPER Steam/pressure washing</p>



SITE LOCATION MAP



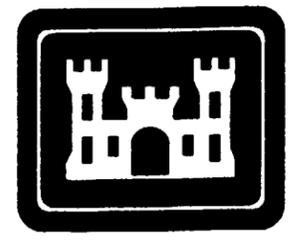
### INDEX TO DRAWINGS

DRAWING TITLE	DRAWING NO.
COVER SHEET AND INDEX TO DRAWINGS	TCRA-1
EXISTING SITE LAYOUT MAP	TCRA-2
SITE PREPARATION/LAYOUT	TCRA-3
LIMITS OF SITE WORK	TCRA-4
MISCELLANEOUS DETAILS	TCRA-5
CONSTRUCTION NOTES AND SPECIFICATIONS	TCRA-6
CONSTRUCTION NOTES AND SPECIFICATIONS	TCRA-7

# DESIGN DRAWINGS FUSRAP MAYWOOD SUPERFUND SITE DRAINAGE SWALE/TIME CRITICAL REMOVAL ACTION MAYWOOD, NEW JERSEY

PREPARED FOR

**U.S. ARMY  
CORPS OF ENGINEERS  
NEW YORK DISTRICT**



**FUSRAP**

*CWP - "Red Line"*



NO.	DATE	REVISIONS

<b>STONE &amp; WEBSTER ENVIRONMENTAL TECHNOLOGY &amp; SERVICES</b> Checked by: M. CHAKRABARTY 11/18/99 Drawn by: C. BARSCH 11/22/99 Reviewed by: A. BROWN, PE 1/1/00	Date: 1/6/00 Approved: D. SAMELA, PE File Name: \MAYWOOD\B575405A.dwg
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U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**FUSRAP**

FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

COVER SHEET AND  
INDEX TO DRAWINGS

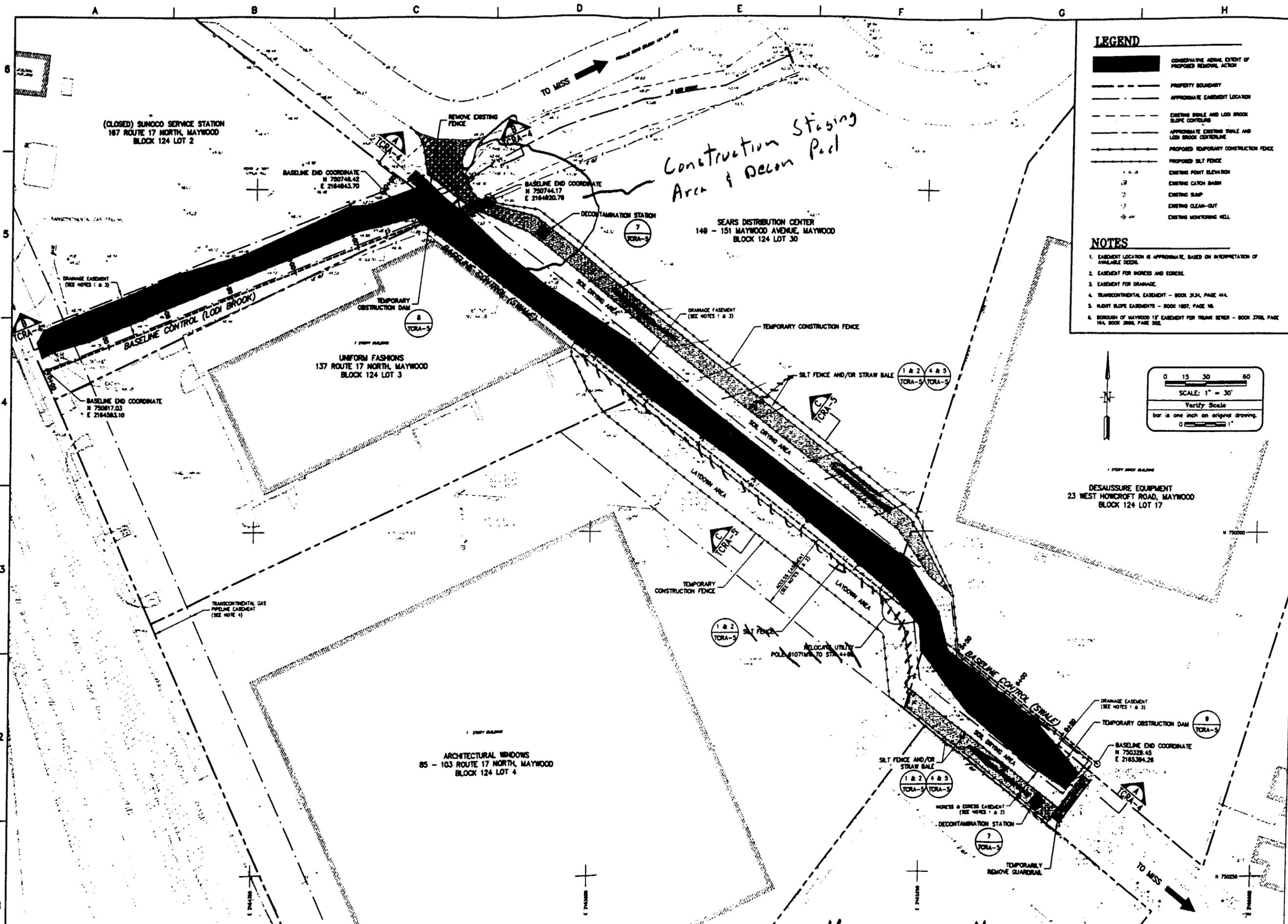
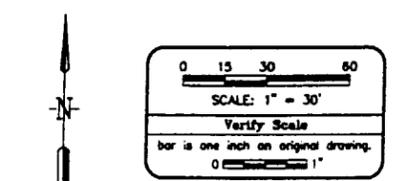
Scale: 1" = 400'  
 Drawing Number: TCRA-1



**LEGEND**

- CONSERVATIVE AERIAL EXISTENCE OF PROPOSED REMOVAL ACTION
- PROPERTY BOUNDARY
- APPROXIMATE EASEMENT LOCATION
- EXISTING SWALE AND LOG BROOK SLOPE CONTOURS
- APPROXIMATE EXISTING SWALE AND LOG BROOK CENTERLINE
- PROPOSED TEMPORARY CONSTRUCTION FENCE
- PROPOSED SILT FENCE
- EXISTING POINT ELEVATION
- EXISTING CATCH BASIN
- EXISTING SUMP
- EXISTING CLEAN-OUT
- EXISTING MONITORING WELL

- NOTES**
1. EASEMENT LOCATION IS APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE RECORDS.
  2. EASEMENT FOR EGRESS AND ACCESS.
  3. EASEMENT FOR DRAINAGE.
  4. TRANSCONTINENTAL EASEMENT - BOOK 3134, PAGE 414.
  5. HEDDY SLOPE EASEMENTS - BOOK 1807, PAGE 16.
  6. BOROUGH OF MAYWOOD 1' EASEMENT FOR TRUNK SEWER - BOOK 2708, PAGE 164, BOOK 3086, PAGE 302.



**U.S. Army Corps of Engineers**  
NEW YORK DISTRICT

DESIGNED BY	DATE	APPROVED BY	DATE
CHANGELA	11/18/99	D. SAMUELA, PE	1/17/00
DRAWN BY	DATE	REVIEWED BY	DATE
C. BURRICH	11/20/99	A. BERTHON, PE	1/16/00

STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES  
DESIGNED BY: CHANGELA  
DATE: 11/18/99  
DRAWN BY: C. BURRICH  
DATE: 11/20/99  
REVIEWED BY: A. BERTHON  
DATE: 1/16/00

U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

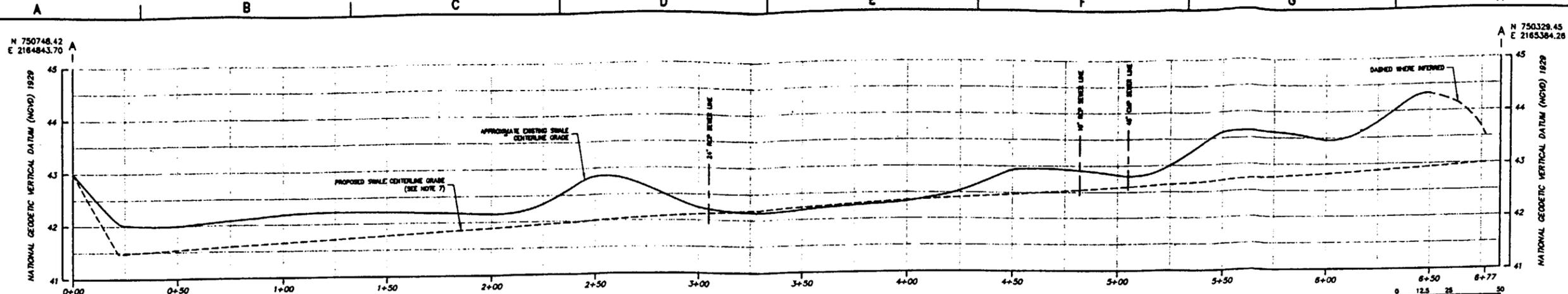
FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY

PROJECT NUMBER: 08575 0750  
DRAWING NUMBER: TCRA-3

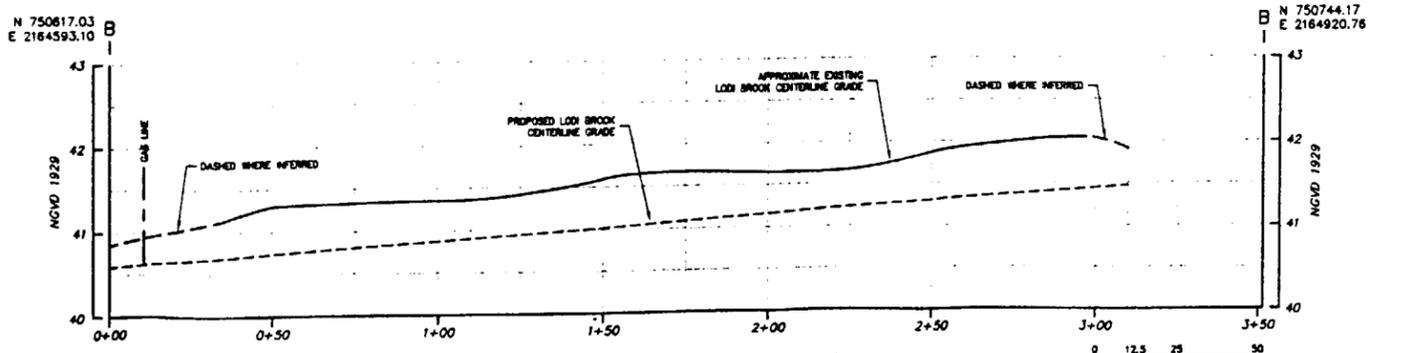
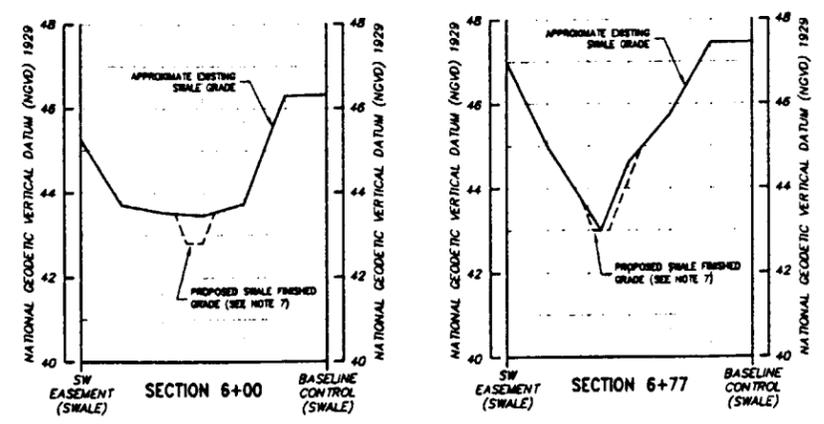
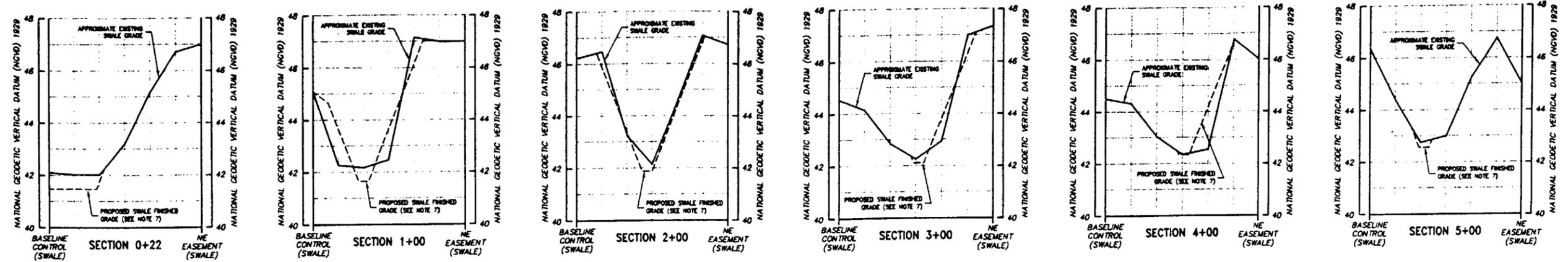
**FUSRAP**

SITE PREPARATION/LAYOUT

TCRA-3



CROSS SECTION A-A (SWALE)  
REFER TO DRAWING NUMBER TCRA-3



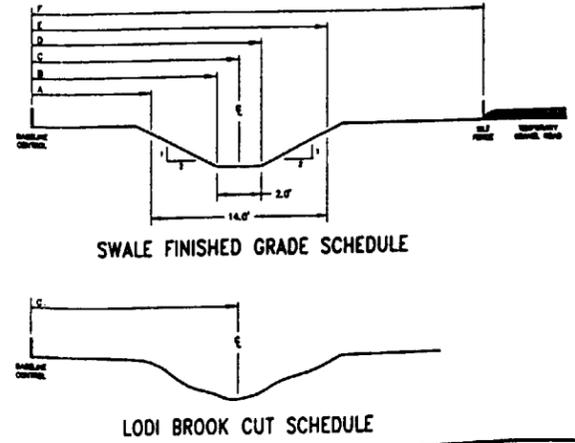
CROSS SECTION B-B (LODI BROOK)  
REFER TO DRAWING NUMBER TCRA-3

SWALE FINISHED GRADE SCHEDULE

STATION	LOCATION	DISTANCE FROM BASELINE CONTROL (ft)	FINISHED ELEVATION (NGVD 1929)	STATION	LOCATION	DISTANCE FROM BASELINE CONTROL (ft)	FINISHED ELEVATION (NGVD 1929)
0+22	A	0.0	43.00	4+00	A	0.0	42.34
	B	7.0	42.38		B	13.0	42.34
	C	9.0	42.22		C	15.0	42.34
	D	9.0	42.02		D	15.0	42.34
	E	15.0	42.02		E	20.0	42.34
	F	15.0	42.30		F	20.0	42.34
	G	30.0	42.30		G	35.0	42.34
1+00	A	0.0	44.08	5+00	A	0.0	42.91
	B	9.0	41.26		B	10.0	42.97
	C	10.0	41.25		C	11.0	42.97
	D	11.0	41.26		D	12.0	42.97
	E	17.0	41.26		E	17.0	42.97
	F	41.0	41.26		F	30.0	42.97
	G	41.0	41.26		G	30.0	42.97
2+00	A	0.0	44.08	6+00	A	0.0	42.37
	B	15.0	41.26		B	15.0	42.91
	C	14.0	41.26		C	15.0	42.91
	D	15.0	41.26		D	15.0	42.91
	E	31.0	41.26		E	31.0	42.91
	F	42.0	41.26		F	42.0	42.91
	G	42.0	41.26		G	42.0	42.91
3+00	A	0.0	42.31	6+77	A	0.0	42.43
	B	14.0	42.11		B	17.0	42.90
	C	15.0	42.11		C	18.0	42.90
	D	15.0	42.11		D	18.0	42.90
	E	22.0	42.11		E	22.0	42.90
	F	22.0	42.11		F	22.0	42.90
	G	42.0	42.11		G	42.0	42.90

LODI BROOK CUT SCHEDULE

STATION	LOCATION	DISTANCE FROM BASELINE CONTROL (ft)	FINISHED ELEVATION (NGVD 1929)
0+00	C	17.7	40.50
0+50	C	18.0	40.73
1+00	C	20.3	40.87
1+50	C	17.8	41.02
2+00	C	17.2	41.16
2+50	C	17.3	41.30
3+00	C	15.0	41.44
3+10	C	15.1	41.47



- NOTES**
- EASEMENT LOCATIONS ARE APPROXIMATE, BASED ON INTERPRETATION OF AVAILABLE DEEDS.
  - ALL EXCAVATION SLOPES SHALL COMPLY WITH SECTION 6.0 OF THE CONSTRUCTION NOTES AND SPECIFICATIONS IDENTIFIED ON DRAWING NUMBER TCRA-6.
  - REFER TO DRAWING NUMBER TCRA-3 FOR CROSS SECTION LOCATIONS.
  - REFER TO DRAWING NUMBER TCRA-5 FOR TYPICAL SWALE RECONSTRUCTION DETAIL (DETAIL 6) AND TIME CRITICAL REMOVAL ACTION PROGRESSION PROCESS FLOW DIAGRAM.
  - THE HORIZONTAL DATUM IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM (NAD) 1927.
  - THE VERTICAL DATUM IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
  - THIS IS THE FINISHED GRADE. ALLOW FOR EXCAVATION FOR RIPRAP AND/OR GABION PLACEMENT.

**U.S. Army Corps of Engineers**  
NEW YORK DISTRICT

**STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES**  
MAYWOOD, NEW JERSEY

**FUSRAP**

**U.S. ARMY ENGINEER DIVISION**  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

**LIMITS OF SITE WORK**

**TCRA-4**

Project Number: 08575.0750  
Drawing Number: TCRA-4

Project No.	TCRA-6
Contract No.	DAW1-99-D-9001
Order No.	0001-0000
Revision No.	0001-0000
Scale	AS SHOWN
Author	STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES
Checked	M. CHAMBERA 11/18/99
Drawn	C. BURDICH 11/22/99
Approved	D. SAMELA PE 1/9/00
Project No.	118/001
File Name	\\MAYWOOD\85754044.dwg

Project No.	TCRA-6
Contract No.	DAW1-99-D-9001
Order No.	0001-0000
Revision No.	0001-0000
Scale	AS SHOWN
Author	STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES
Checked	M. CHAMBERA 11/18/99
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U.S. ARMY ENGINEER DIVISION  
CORPS OF ENGINEERS  
MAYWOOD, NEW JERSEY

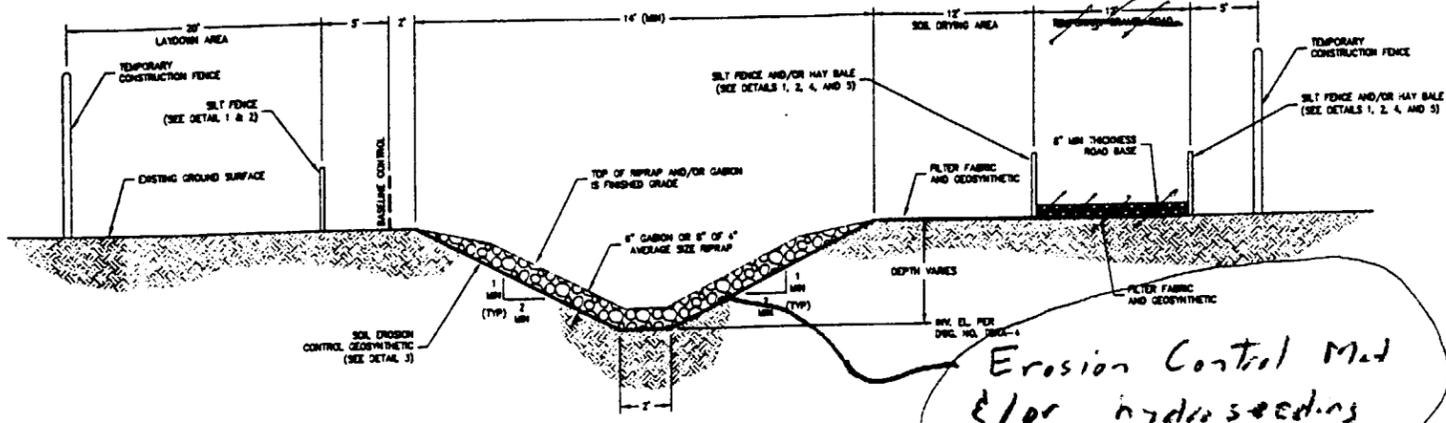
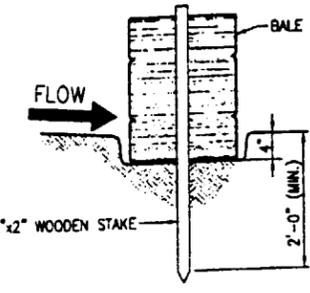
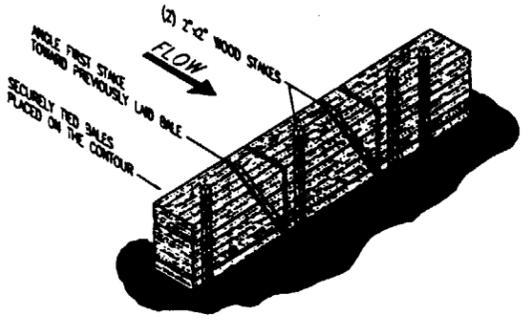
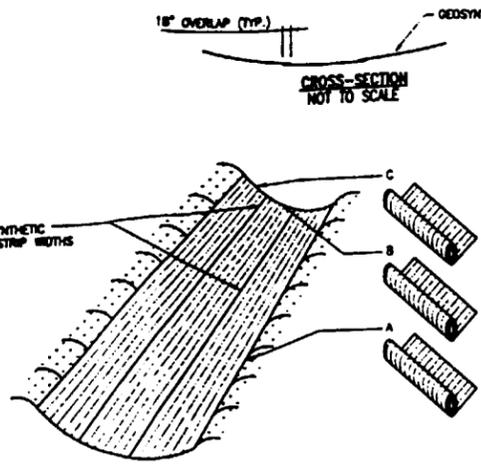
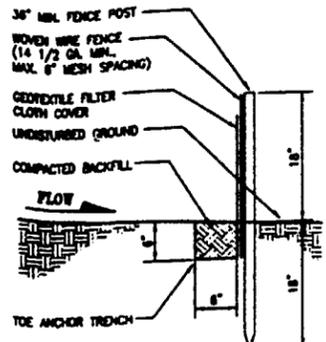
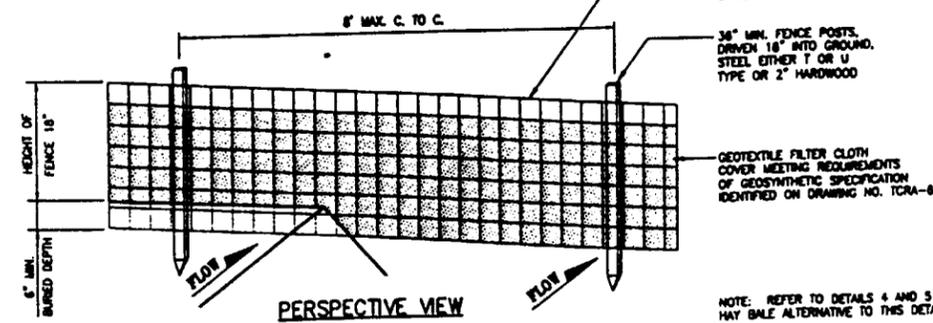
**FUSRAP**

FUSRAP, MAYWOOD, SUPERFUND SITE  
MAYWOOD, NEW JERSEY

MISCELLANEOUS DETAILS

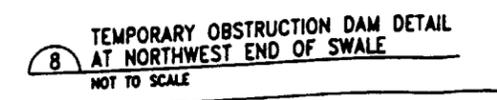
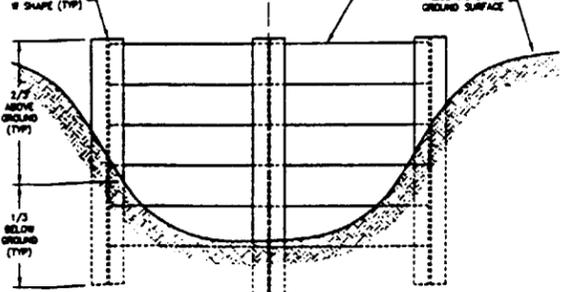
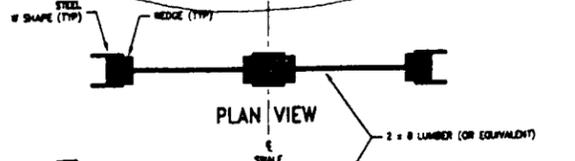
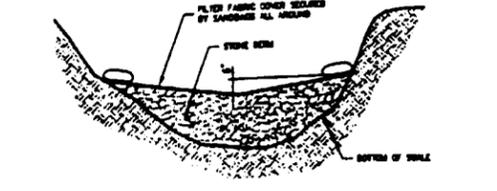
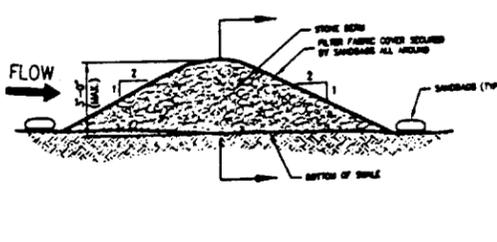
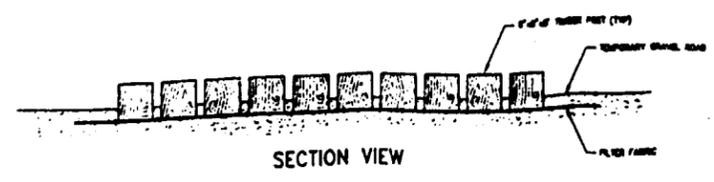
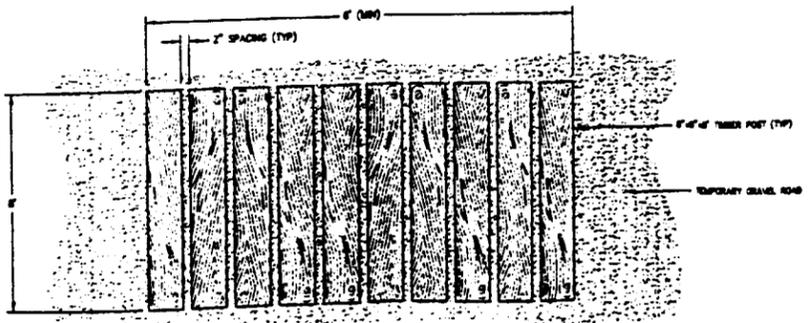
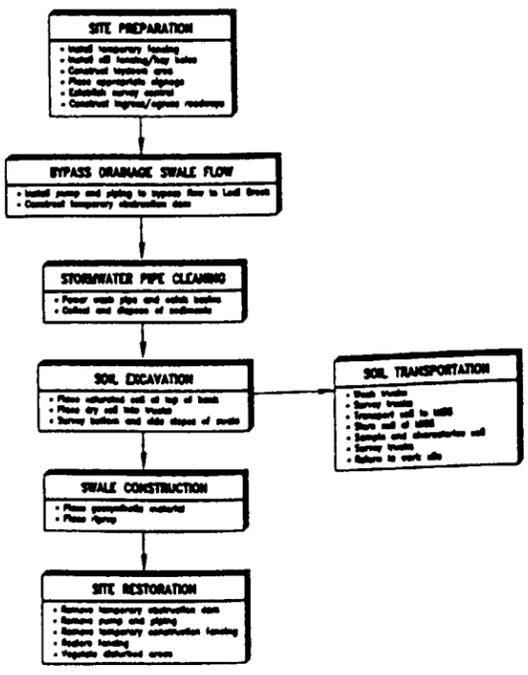
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Delivery Order Number: 0001-0000  
Drawing Number: TCRA-6

A B C D E F G H



*Erosion Control Mat &/or hydroseeding may be substituted*

**TIME CRITICAL REMOVAL ACTION PROGRESSION PROCESS FLOW**



**NOTE**

1. REFER TO DRAWING NUMBER TCRA-6 FOR CONSTRUCTION NOTES AND SPECIFICATIONS.



