01494

U.S. Army Corps of Engineers

Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT
INDUSTRIAL WASTE SITE (SLUDGE PILES) – SEAD 5 AND VOC SITES – SEAD's 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order Nos. 0069 & 0034

FINAL
TASK WORK PLANS

JULY 2003

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

U.S. Army Corps of Engineers

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SENECA ARMY DEPOT WORK PLAN
TIME-CRITICAL REMOVAL ACTION
AT INDUSTRIAL WASTE SITE (SLUDGE PILES) – SEAD 5
AND VOC SITES – SEAD's 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order Nos. 0069 & 0034

Prepared for

U.S. ARMY CORPS OF ENGINEERS,
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July 2003

W.O. Nos. 20074.515.069 and .034

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LIST OF ACRONYMS

ARARs	Applicable or Relevant and Appropriate Requirements
ARMY	U.S. Army
CIH	Certified Industrial Hygienist
CSAP	Chemical Sampling and Analysis Plan
ft	feet/foot
ft^2	square ft
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSR	On-Site Representative
POTW	publicly owned treatment works
ppm	parts per million
QC	Quality Control
SEDA	Seneca Army Depot Activity
SOW	Scope of Work
SSH/QCO	Site Safety and Health/Quality Control Officer
SSHP	Site Safety and Health Plan
SVOCs	semivolatile organic compounds
SWMUs	Solid Waste Management Units
TAGM	Technical and Administrative Guidance Memorandum
TPH	total petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers
$WESTON_{SM}$	Weston Solutions, Inc.
WP	Work Plan
yd^3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

This Work Plan (WP) was prepared by Weston Solutions, Inc. ($WESTON_{SM}$) for the Scope of Work (SOW) described by the U.S. Army Corps of Engineers (USACE), Omaha District for the Time-Critical Removal Action at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This work will be performed under the Rapid Response/Immediate Response Contract for Control/Remediation of Hazardous, Toxic and Radioactive Waste, Task Order Nos. 0069 and 0034 of Contract No. DACA45-98-D-0004. Seneca Army Depot Activity has been closed under the Department of Defense's Base Realignment and Closure process. The remedial action is intended to provide clean closure to three of SEDA's Solid Waste Management Units (SWMUs): the Industrial Waste Site (Sewage Sludge Waste Piles - SEAD-5), the Boiler Blow down Leach Pit north of Building 121 (SEAD 39), and the Boiler Blow down Leach Pit next to the railroad tracks and north of Building 319 (SEAD 40) to facilitate transfer of these properties for public and private beneficial reuse.

The work for this project shall include the following activities:

- Mobilization of construction equipment and storage trailers to the project site.
- Site preparation including the removal of brush and vegetation, installation of drainage and erosion control measures around excavation and temporary storage areas, and construction of personnel and equipment decontamination stations.
- Surveying to delineate soil excavations and sampling locations.
- Removal and temporary storage of contaminated soils, sediments and waste piles.
- Sampling to verify clean-up goals have been achieved.
- Transportation and disposal of all waste material generated during the execution of this task order.
- Backfilling of select areas and grading and seeding of all excavation areas.
- Demobilization of equipment and restoration of the site.

Appropriate, Relevant and Applicable Requirements (ARARs) for this project include the following:

- New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) HWR089-4031, *"Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites,"* October 27, 1989.
- New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum #4046, *"Determination of Soil Cleanup Levels,"* January 1994.
- New York State Department of Health (NYSDOH) Community Air Monitoring Program.
- New York Codes, Rules and Regulations (NYCRR) 364-376 Management of Remediation Waste.

A more comprehensive listing of ARARs and how they will be addressed for this removal action is presented in Table 1-1.

1.2 SITE DESCRIPTION

1.2.1 Site Location and Description

The SEDA is located in Romulus, Seneca County, New York (see Figure 1-1). Seneca Army Depot Activity is a U.S. Army (Army) facility and occupies approximately 10,600 acres. It is bounded to the west by State Route 96A and on the east by State Route 96. Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 50 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for agriculture.

As described in the *Decision Document For Time Critical Removal Action at SEAD-5* and the *Action Memorandum and Decision Document For Time Critical Removal Action, Three VOC's Sites (SEAD's 38, 39, & 40)*, time-critical removal actions are planned at three SWMUs at SEDA. The three SWMUs have been designated as SEADs 5, 39, and 40. Historical operations at these sites resulted in contaminated waste piles and contamination of shallow and in some cases deep soils [up to depth of 6 feet (ft)] with total petroleum hydrocarbons (TPH),

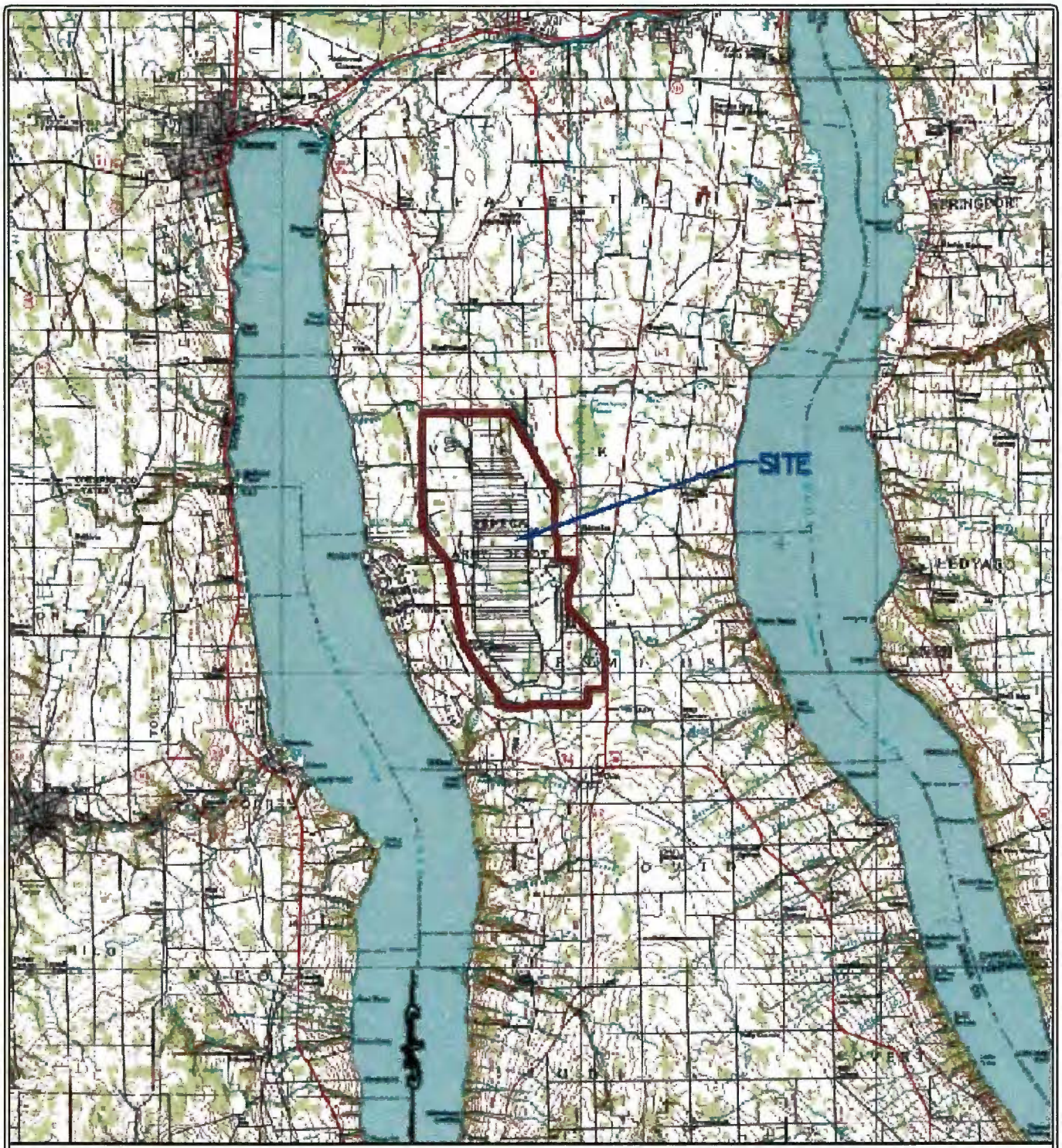
TABLE 1-1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR RAPID RESPONSE ACTION

LATORY ORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN ARA TO THE EXTENT PRACTICABLE
	Disposal of Contaminated Materials	40 CFR 262 Subpart D	Applicable	Records will be maintained of all waste determinations, including appropriate results of analyses performed, substances and sample location, the time of collection, and all pertinent data.	Records will be maintained of all waste determinations as required.
	Disposal of Contaminated Materials	40 CFR 262 and 40 CFR 263	Applicable	Utilization of a state-approved manifest system in conformance with said requirements.	All transportation of contaminated materials w be performed using appropriate uniform hazardous waste manifests.
	Wetlands	Protection of Wetlands Executive Order No. 11990 [40 CFR Part 6, App. A]	Applicable	Under this Order, federal agencies are required to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance natural and beneficial values of wetlands. If remediation is required within wetlands areas, and no practical alternative exists, potential harm must be minimized and action taken to restore natural and beneficial values.	No work is being performed in wetlands durin the project. However, hay bales, silt fencing, and/or earthen berms will be placed as appropriate to eliminate any potential adverse from adjacent on-site construction activities. Erosion control will be maintained in accordance with Federal regulations.
	Storage of hazardous waste in containers and tanks	Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., Use and Management of Containers, 40 CFR 264 Subpart I, Tank Systems 40 CFR 264 Subpart J	Applicable	These regulations concern the storage of hazardous wastes in containers (including requirements addressing the condition of the containers, the compatibility of waste with the containers, the management of the containers, inspection of the containers and containment systems for the containers) and in tanks (including requirements regarding assessment of the tank system's integrity, design and installation of new tank systems or components, containment and detection of releases, general operating requirements, inspections, and responses to leaks or spills).	Tanks and containers used for storage of hazardous waste will be designed, installed, operated, and maintained in accordance with these requirements. A staging area will be established and maintained for proper storag of hazardous wastes.
	Surface Waters	Fish and Wildlife Coordination Act [16 USC 661 et seq.; 40 CFR Section 6.302(g); 33 CFR Part 320]	Applicable	Requires Federal agencies involved in actions that will result in the control of structural modification of any stream or body of water for any purpose, to take action to protect the fish and wildlife resources that may be affected by the action. EPA must consult with the Fish and Wildlife Service and the appropriate state agency to ascertain the means and measures necessary to mitigate, prevent, and compensate for project-related losses of wildlife resources and to enhance the resources.	No adverse impacts to fish and wildlife resources are anticipated since remediation activities are restricted to within the limits of t perimeter fence and no stream or body of wa exists in close proximity to the site. However hay bales silt fences, and/or earthen berms shall be placed in order to prevent any run-of from on-site construction activities into the adjacent ditches leading to surface waters.

TABLE 1-1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
FOR RAPID RESPONSE ACTION

ULATORY HORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN ARA TO THE EXTENT PRACTICABLE
l	Disposal Characterization	RCRA, TSCA	Applicable	Provides requirements for soil characterization and disposal.	Contaminated materials will be characterized f disposal in accordance with the CSAP and the disposal facility requirements. The CSAP will incorporate requirements of RCRA and TSCA as well as applicable facility.
Local	Discharge of wastewaters to Local POTW	Title 8 of Article 17 Environmental Conservation Law of NY State, Clean Water Act, as amended, (33 U.S.C.) and 40 CFR Part 136	Applicable	These regulations establish limits for testing procedures, monitoring requirements, and acceptance criteria for a POTW.	Characterization samples for water will be collected for parameters specified in the SPDI permit for the POTW chosen to accept waste water collected from the Various SEADs.
	New York State Remedial Actions at Inactive Hazardous Waste Sites	New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) # 4046 – Determination of Soil Cleanup Objectives and Cleanup Levels	Applicable	This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not feasible.	TAGMs have been adopted as default cleanu goals for this project, and are incorporated int site work plans, and in particular into the Contractor Sampling and Analysis Plan (CSA during development of Data Quality Objective
	New York State – Air Monitoring/Dust Control	NYSDEC – TAGM # 4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites	Applicable	This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring programs and element of a hazardous waste site's health and safety program.	This TAGM has been considered in the development of the Site Safety and Health Pl as well as the other project work plans. An ai monitoring and dust suppression program ha been incorporated into project planning and w be implemented, as needed, in the field.
	New York State – Air Monitoring	New York State Department of Health (NYSDOH) – Generic Community Air Monitoring Plan (CAMP)	Applicable	CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates at downwind perimeter of designated work areas when certain activities are in progress at contaminated site.	This CAMP has been considered in the development of the Site Safety and Health Pl as well as the other project work plans. The monitoring program has been incorporated in project planning, and includes the contamina specific requirements for VOCs and particula
	Management of Remediation Waste	NYSDEC, 6 New York Codes, Rules and Regulations (NYCRR) 364-376	Applicable	These rules establish performance standards for treatment, disposal, and/or storage of media contaminated with solid and hazardous waste. They include performance standards for hazardous waste piles, tanks, and miscellaneous units TSD facilities, and transporters.	All contaminated materials will be segregate and disposed of in accordance with all applicable federal, state, and local regulatio Materials will be analyzed as appropriate a described in this Work Plan and the project CSAP.

= Applicable or Relevant and Appropriate Requirement
= Code of Federal Regulations
= Publicly Owned Treatment Works
= parts per million
= Resource Conservation and Recovery Act
= Chemical Sampling and Analysis Plan
= Site Safety and Health Plan
= Technical and Administrative Guidance Memorandum
= Toxic Substances Control Act
= treatment, storage, disposal
= United States Code
= U.S. Environmental Protection Agency
= micrograms per cubic meter
= volatile organic compound



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
3 1.5 0 1.5 3
APPROXIMATE SCALE IN MILES

LEGEND:

TITLE: SITE LOCATION MAP

PROJECT: TIME CRITICAL REMOVAL ACTION
SEADS 5,39&40 SEDA ROMULUS, NY

CLIENT NAME: DEPT. OF THE army OMAHA DIST.
CORPS OF ENGINEERS OMAHA,NE

WESTON

DATE: 6-26-03

FIGURE #: 1-1

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semivolatile organic compounds (SVOCs), and metals. Some migration of contaminants to surficial soil in drainage ditches located near the SWMUs may have occurred.

1.2.1.1 SEAD 5

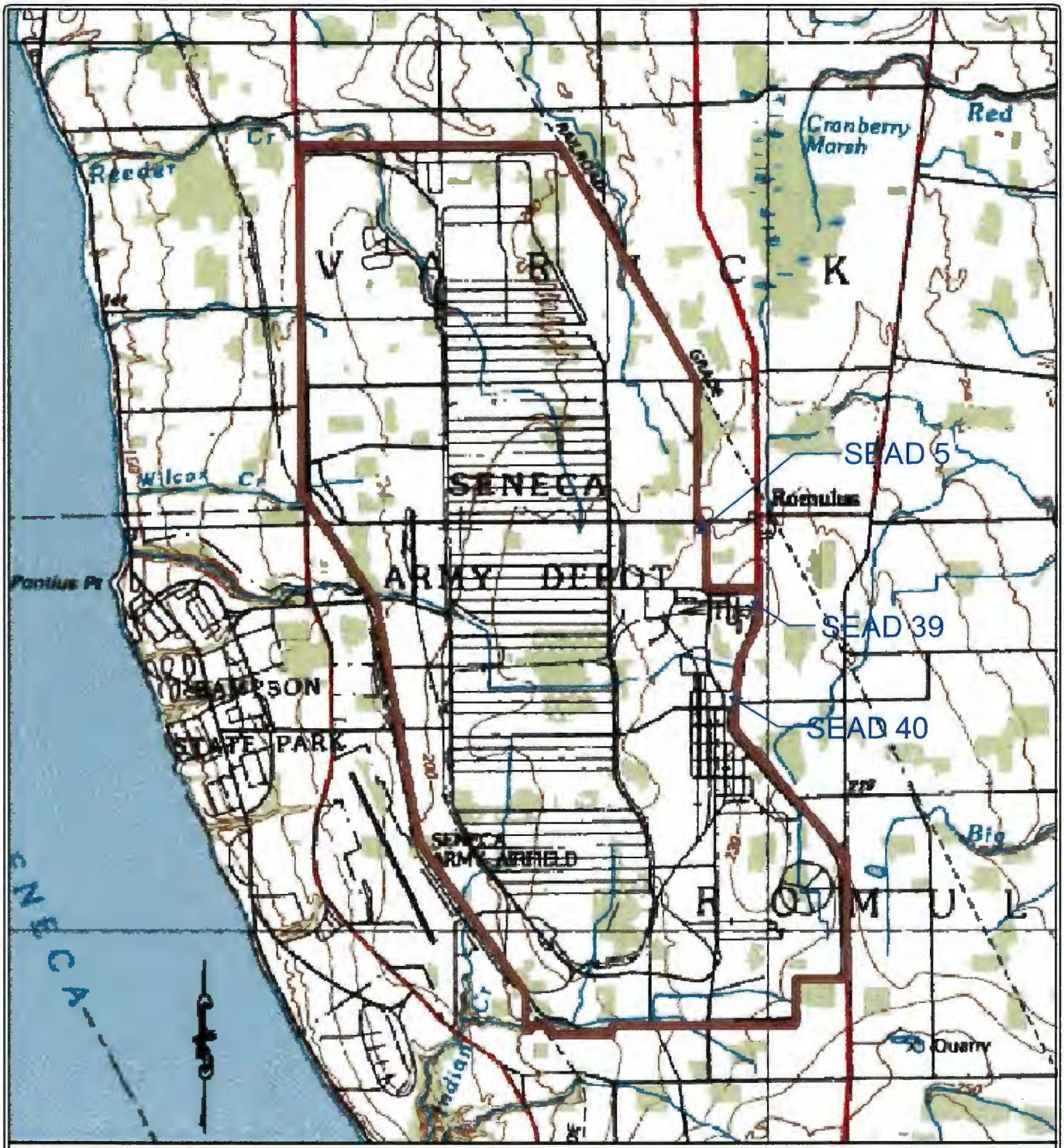
SEAD-5 is located approximately 600 ft due west of Building 135 and consists of 5-6 sewage sludge piles ranging 5-10 ft high derived from two on-site sewage treatment plants, Building Nos. 4 and 715. The entire site covers an area approximately 150 ft by 150 ft. (reference Figure 1-2)

1.2.1.2 SEAD 39

The Boiler Blow down Leach Pit known as SEAD-39 is located immediately to the north of Building 121. Building 121 is an active boiler plant located in the administrative area (i.e., halfway along the eastern border) of the SEDA. The historic blow down area associated with Building 121 is located north of the building, approximately 500 ft south of the nearest Depot fence line. The land surface to the north of the building is grass covered and is slightly mounded between the building and the street. Currently the pit itself is not visible as there are no obvious depressions where blow down could have accumulated. Center Street, which runs in an east-west direction, is located 50 ft to the north of Building 121 and the suspected location of the former leach pit. (reference Figure 1-2)

1.2.1.3 SEAD 40

The Boiler Blow down Leach Pit known as SEAD-40 is located in a drainage ditch next to railroad tracks to the north of Building 319. Building 319 is an active boiler plant located on 1st Street. SEAD 40 is located approximately 2,000 ft west of the nearest Depot fence line. A drainage pipe originating in Building 319 is suspected to have carried blow down liquids into the drainage ditch. The ditch originates at the mouth of the pipe approximately 30 ft northeast of Building 319. The ditch continues for approximately 400 ft and eventually levels into a grassy field. The ground surface to the north of Building 319 and south of the drainage ditch is covered with asphalt. (reference Figure 1-2)



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
1 0.5 0 0.5 1
APPROXIMATE SCALE IN MILES

LEGEND:

TITLE: SITE PLAN

PROJECT: TIME CRITICAL REMOVAL ACTION
SEADS 5,39&40 SEDA ROMULUS, NY

CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST.
CORPS OF ENGINEERS OMAHA,NE

WESTON

DATE: 6-26-03

FIGURE #: 1-2

00689

1.2.2 Site Background

1.2.2.1 SEAD 5

This site consists of 5-6 sewage sludge piles ranging 5-10 ft high derived from two on-site sewage treatment plants, Building Nos. 4 and 715. Sewage sludge was stockpiled at this site during the early 1980's. The sludge was removed from drying beds and transported to this site on 2-month intervals from the above-mentioned on-site sewage treatment plants. The entire site covers an area approximately 150 ft by 150 ft.

A limited sampling program performed at the Industrial Waste Site (Sewage Sludge Waste Piles, SEAD-5) at SEDA demonstrated that releases may have occurred. Results of testing conducted showed no impact on groundwater and subsurface soils. Some SVOCs and inorganic elements have impacted the sludge piles and surface soil. Heavy metals such as copper, mercury, silver, and zinc were detected.

Initially, approximately 525 cubic yards (yd^3) of soil in piles and approximately 420 yd^3 of soils underneath and around the existing piles will be removed based on the previous sample results.

1.2.2.2 SEAD 39

The Boiler Blow down Leach Pit known as SEAD-39 is located immediately to the north of Building 121. The land surface to the north of the building is grass covered and is slightly mounded between the building and the street. Currently the pit itself is not visible as there are no obvious depressions where blow down could have accumulated. Use of the leaching area was terminated in approximately 1979 or 1980, when all boiler blowdown points were connected to the sanitary sewer. Between the time when the boilers were installed and 1979-1980, the boilers discharged between 400 and 800 gallons of blowdown liquids per day. Blowdown was released three times per day, and the discharged liquid was allowed to flow into the drainage system in the street and partly into the ground.

A Limited Sampling Programs performed in 1993 and 1994 at the Boiler Blow down Leach Pit site (SEAD 39) at SEDA demonstrated that releases may have occurred. Samples were analyzed

for TPH and indicated concentrations less than 100 parts per million (ppm) with the exception of one sample at 118 ppm.

Initially, approximately 18.5 cy^3 of petroleum-impacted soil will be removed based on previous sampling results. Another 18.5 cy^3, representing the top six inches of topsoil, will also be removed and segregated, as it is not anticipated to be contaminated because it was placed as a landscaping cover after the historic blowdown operation was terminated in 1980.

1.2.2.3 SEAD 40

The Boiler Blow down Leach Pit known as SEAD-40 is located in a drainage ditch next to railroad tracks to the north of Building 319. Building 319 is an active boiler plant located on 1st Street. A drainage pipe originating in Building 319 is suspected to have carried blow down liquids into the drainage ditch. The ditch originates at the mouth of the pipe approximately 30 ft northeast of Building 319. The ditch continues for approximately 400 ft and eventually levels into a grassy field. The ground surface to the north of Building 319 and south of the drainage ditch is covered with asphalt. Use of the leaching area was terminated in approximately 1979 or 1980, when all boiler blowdown points were connected to the sanitary sewer. Between the time when the boilers were installed and 1979-1980, the boilers discharged between 400 and 800 gallons of blowdown liquids per day. Blowdown was released three times per day, and the discharged liquid was allowed to flow into the drainage ditch and partly into the ground.

A Limited Sampling Programs performed in 1993 and 1994 at the Boiler Blow down Leach Pit site (SEAD 40) at SEDA demonstrated that releases may have occurred. Samples were analyzed for TPH with surface samples indicating concentrations of 1,270 and 1,640 ppm and subsurface samples indicating 300-680 ppm. A "hot spot", located between Building 319 and the drainage ditch, was identified with a concentration of 420 ppm.

Initially, approximately 17 cy^3 of petroleum-impacted soil will be removed based on previous sampling results. Approximately 13 cy^3 will be removed from the drainage ditch and approximately 4 cy^3 will be removed from the "hot spot."

SECTION 2

PROJECT MANAGEMENT

2. PROJECT MANAGEMENT

2.1 MANAGEMENT

Aspects of management for this project will include scheduling, coordination and meetings, project submittals, and staffing. These items are discussed in the subsections that follow.

2.2 PROJECT SCHEDULE

The Project Schedule has been prepared and is organized by tasks outlined in the proposed Work Breakdown Structure. A copy of the updated Project Schedule is presented in Figure 2-1.

2.3 COORDINATION, PLANNING, AND MEETINGS

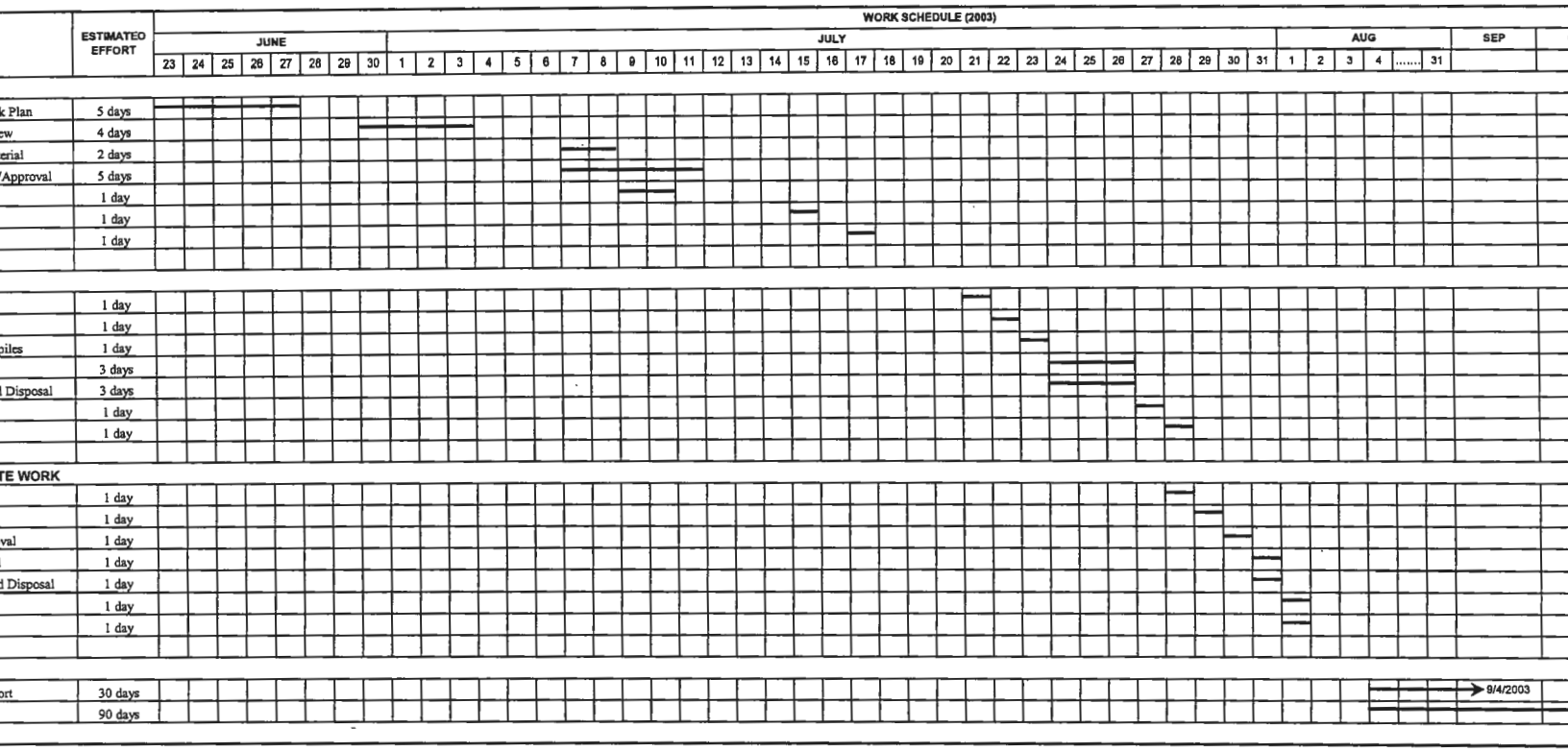
The Omaha District Rapid Response Project Engineer will schedule a pre-construction meeting. Attendees at this meeting will include the Rapid Response Project Engineer and On-Site Representative (OSR), representatives from the U.S. Army Corps of Engineers, New York District and/or Resident Office, and WESTON's key project staff including the Project Manager, Site Manager, and Site Safety and Health/Quality Control Officer (SSH/QCO). Other technical staff will be present, as needed. The meeting agenda will conform to the Omaha District Rapid guide for Pre-construction Convergence (see Rapid Standard Operating Procedure 3.2 for details).

Daily meetings will be held at the site for safety, planned work, and accomplished work. The safety tailgate meetings will be held daily before any work is initiated at the site.

2.4 MEETING MINUTES, REPORTS, NOTICES, AND SUBMITTALS

Submittals required prior to mobilization of personnel, equipment, and materials include the WP, the Site Safety and Health Plan (SSHP), and the Chemical Sampling and Analysis Plan (CSAP). These deliverables will be submitted as one document to USACE prior to commencing work.

TIME CRITICAL REMOVAL ACTION
SEAD 5, 39 AND 40
SENECA ARMY DEPOT
ROMULUS, NY



Throughout the duration of the project, WESTON will prepare and submit the following meeting minutes, reports, and notices as required.

- Rapid Response Quality Control (QC) Daily and Weekly Reports.
- Daily Report.
- Rapid Response Work Orders submitted the Friday prior to the upcoming weeks work.
- Rapid Response Weekly Status Report.
- Rapid Response Weekly Cost Reports.
- Meeting minutes of weekly progress meetings.
- Conference minutes (when required).
- Construction progress schedules.
- Certified payrolls.
- Photo documentation.
- Forward cost projections and progress.
- Tailgate safety meeting minutes [daily with Construction QC/Work Order Reports].
- Chain-of-Custody Reports, laboratory data reports, and manifests/non-hazardous manifests or bills of lading.

Final documentation and discussion of the activities performed under this Task Order will be presented in the Final Report, as specified in Subsection 3.5 of the SOW. This report will contain a summary of the work performed, that includes, but is not limited to:

- Narrative of the scope of services completed.
- Safety summary.
- Quality control summary.
- Summary of analytical data.
- Any other unique or special tasks performed or situations documented.

Additional documentation that will be submitted with the final report as supplementary information in the appendices shall include, but not be limited to:

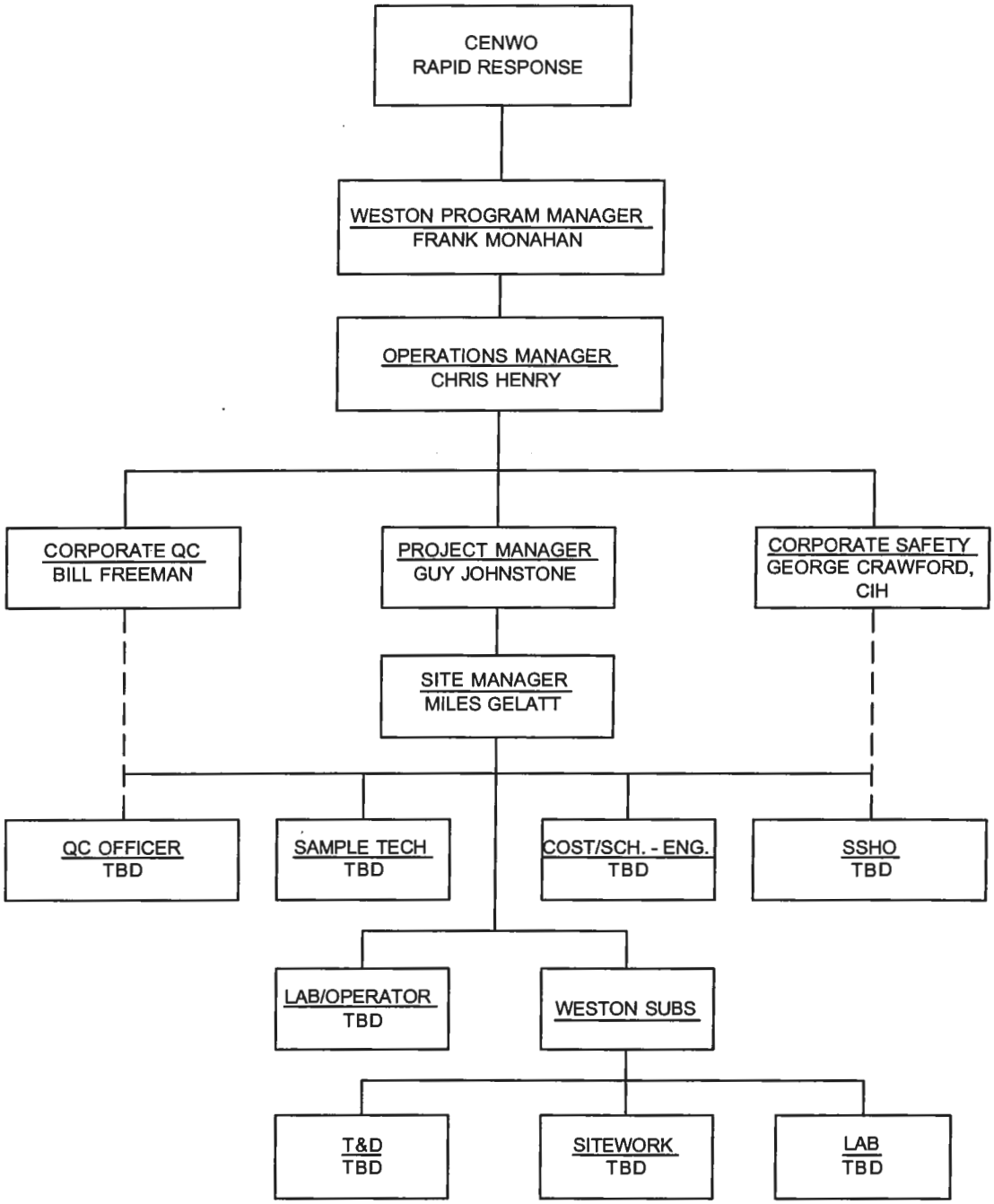
- Completed permits and verbal conversation records concerning any permitting.
- Licenses.
- Waste Profile Sheets and shipping documents.
- Rapid Response QC Daily and Weekly Reports.
- Chain-of-Custody Records and Laboratory Data Packages.
- Photo Documentation.
- Project points of Contact address and phone (including Site Manager, Transportation & Disposal Contractors, Subcontractor names, USACE-PE, etc.).
- Completed Verbal Conversation records, especially ones that either impact the SOW, Cost Proposal, or Final Report.
- Data Validation Reports.

2.5 STAFFING AND RESPONSIBILITIES

An organizational chart naming WESTON staff responsible for control and execution of this project is presented as Figure 2-2. A discussion of the roles and responsibilities of the key WESTON personnel is provided in the subsections that follow.

Program Manager: Mr. Frank Monahan serves as the Program Manager for all Rapid Response task orders. Mr. Monahan is responsible for ensuring that WESTON executes all task orders efficiently, expediently, and with the highest degree of competency.

Weston Solutions, Inc. Program Management Office will support the Project Manager with regard to purchasing, soliciting of vendors, and evaluation of bids including consent packages, property management, and Certified Industrial Hygienist (CIH) issues. Mr. William Freeman will ensure that the "complete manifest packages" are in order for submittal to CENWO-CD-RR, and will oversee the tracking of manifest packages if required under the task order.



LEGEND:

TITLE: ORGANIZATIONAL CHART

PROJECT: TIME CRITICAL REMOVAL ACTION SEADS 5,39&40 SEDA ROMULUS, NY

CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST. CORPS OF ENGINEERS OMAHA,NE

WESTON

DATE: 6-26-03

FIGURE #: 2-2

00690

Project Manager: Mr. Guy Johnstone will serve as the Project Manager for the activities covered in this WP. He has overall financial and schedule responsibility for the project, will approve all vouchers to CENWO-CD-FC, and has the authority to negotiate change orders. A delegation letter authorizing Mr. Johnstone to negotiate on behalf of WESTON will be sent under separate cover.

Site Manager: Mr. Miles Gelatt will serve as the Site Manager for this project. The Site Manager will be responsible for supervising all site activities, including:

- Supervision of WESTON and WESTON subcontractor work forces.
- Compliance with WESTON's WP and SSHP.
- Submission of daily and weekly status reports.

Cost/Schedule Engineer: A Cost/Schedule Engineer will be assigned to this task order and will be responsible for tracking weekly project costs, maintaining schedule updates, and preparing weekly work orders. The cost report will be provided to the OSR on a weekly basis. The work orders will be submitted the Friday prior to the upcoming weeks work. The Cost/Schedule Engineer will be responsible for preparing and modifying field requisitions/purchase orders, preparing and submitting subcontractor consent forms to the Contracting Officer, and making field purchases. He will also assist in the preparation of the weekly status report to the OSR.

Program Safety Officer: Mr. George Crawford, CIH, will serve as the Program Safety Officer. Mr. Crawford has 20 years of experience in managing environmental health and safety programs, industrial hygiene programs, and emergency response programs for a variety of hazardous waste sites. Mr. Crawford will ultimately be responsible for the review, approval, oversight, and quality control related to the creation, administration, and implementation of the SSHP, its components, and amendments.

Site Safety and Health/Quality Control Officer: The SSH/QCO will be responsible for the implementation of the SSHP and for ensuring that all project personnel follow the requirements of the SSHP. The SSH/QCO will conduct daily tailgate safety meetings and will be responsible to report any incidents that occur on the site to the Site Manager, Project Manager,

Program Manager, and CIH. He is responsible to implement any safety corrective actions identified through training and reinforced awareness.

The SSH/QCO will also be responsible for the implementation of WESTON's quality control measures outlined in this WP. The SSH/QCO will be responsible for implementing the four phases of construction (Preparatory Inspection, Initial Inspection, Follow-up Inspection, and Completion Inspection) for each new definable feature of work. The SSH/QCO will be responsible for preparing the Rapid Response QC Daily Report, and will assist the Project Manager in the preparation of the Rapid Response Weekly Report and the Final Project Report.

SECTION 3

TECHNICAL APPROACH

3. TECHNICAL APPROACH

This section describes the general approach to be used by WESTON to complete the project objectives. These objectives have been briefly described in Section 1 of this document. A more detailed summary and description of the tasks and the methods, equipment, personnel, materials and procedures are described below.

The primary objective of this project is to provide "clean closure" for the site including SEAD's 5, 39, and 40. To accomplish this objective, WESTON will perform the following tasks.

- **Task 1. Mobilization**: This task will include procurement and mobilization of all equipment and personnel necessary to perform the work.
- **Task 2. Site Preparation**: This task will include layout of work areas, installation and maintenance of erosion and sedimentation controls (as applicable), clearing and grubbing, establishing work zones including equipment staging, and installation of construction fencing.
- **Task 3. Soil Removal**: This task consists of the removal of sludge piles and approximately six inches of soil from the identified contaminant areas in SEADs 5, 39, and 40 and the collection of confirmatory soil samples to verify removal of contaminants.
- **Task 4. Sampling and Analysis**: This task outlines the soil verification and waste characterization sampling requirements for this SOW.
- **Task 5. Transportation and Disposal**: This task will include the preparation of waste manifests, shipping papers, and transportation and disposal of the liquids and soils to licensed waste disposal facilities.
- **Task 6. Site Restoration**: This task will include backfilling of select areas, rough grading, seeding, removal of erosion and sedimentation controls, and other restoration activities as determined by the OSR.
- **Task 7. Demobilization:** This task will include the demobilization of all equipment, personnel, and materials from the project site following completion of all field work.

3.1 TASK 1 – MOBILIZATION

The mobilization task includes the procurement and delivery of equipment and personnel necessary to implement all aspects of the work as defined in the Project Schedule. This task will include moving into office space provided by SEDA for use during the project, mobilizing construction equipment, solid waste containers, project personnel, and familiarizing project personnel with the site and the requirements for the project. Prior to mobilization, any permits or licenses required to implement the work will be obtained.

It is anticipated that the following equipment will be utilized to execute the remediation:

Heavy Equipment

- Track excavators with bucket and/or shear attachments
- Loader
- Pickup trucks
- Bulldozer

Support Equipment

- Poly sheeting
- Hay bales
- Silt fence
- Lockable conex storage box/trailer
- Portable sanitary facilities

Health and Safety Equipment

- Respiratory Protective Equipment
- Personnel decontamination station
- Emergency eyewash station
- First Aid kit(s)
- Fire extinguishers

The intent of this listing is to provide a basic understanding of the machines and equipment that may be used to perform the remediation. Changes in site conditions may require the use of alternative or additional methods and equipment.

3.2 TASK 2 - SITE PREPARATION

Site preparation tasks include: the establishment of support facilities and setup of the existing decontamination area. Additional activities will include the delineation of work areas with construction fencing; utility markouts and installations; clearing and grubbing; and installation of erosion and sedimentation controls.

Site work during this phase of the project will be limited to the three SEADs as indicated on the Site Plan. Weston Solutions, Inc. will utilize a Global Positioning System unit to locate excavation areas and to confirm coordinates using local benchmarks. Standard survey techniques will be used to control and measure soil removal progress. Construction fencing will be utilized along the perimeter of the exclusion zones to secure the areas from unauthorized access. Vehicles and equipment will be staged near each SEAD as work progresses. However, if site conditions change, work zones will be adjusted accordingly. Work zones will be further defined based on the criteria set forth in the SSHP.

Prior to commencement of work on the site, a Community Air Monitoring Program will be initiated in accordance with NYSDOH and NYSDEC requirements. Air monitoring will consist of continuous monitoring along the perimeter of the work zone and monitoring within the work zone with hand-held instruments. Stop work provisions will be in place for any exceedances of the established action levels. The details of this plan are presented in the SSHP.

Clearing and grubbing will consist of removing trees, shrubs and vegetation from the area surrounding each area of excavation within the three SEADs to allow access for the heavy equipment. The cleared material will be segregated outside the perimeter of the exclusion zone or as determined by OSR.

Erosion and sedimentation controls will be installed to manage storm water runoff within the work areas, along drainage ditches, adjacent to roads, and at any drainage outlet points. The types of erosion and sedimentation controls implemented will vary depending upon site specific details, but may include: hay bales with two stakes driven through the bails to secure them in-place, siltation fence, bermed soil, and polyethylene sheeting or tarps if necessary.

No material staging is planned. Due to the small scope of the excavation, material is planned to be directly loaded for removal. If staging areas are required, appropriate erosion control measures will be taken.

A decontamination pad already exists within 200 feet of Building 121, and is available for use. The decontamination pad will be utilized to wash equipment that has been in one of the exclusion zones, equipment that is to be transitioned to handle clean materials, and equipment that is to be transitioned from one SEAD to one of the other SEADs. Equipment arriving from off post will be inspected to ensure that the equipment is visually clean. Weston Solutions, Inc. reserves the right to reject any equipment that arrives on-site in questionable condition. All decontamination water will be collected and stored in appropriate containers pending waste characterization and transportation and disposal at an off-site facility [e.g., local publicly owned treatment works (POTW)].

3.3 TASK 3 - SOIL REMOVAL

Excavation activities will commence at SEAD 5 and proceed to SEAD 39 followed by SEAD 40. Although an expedited turn-around-time is anticipated for confirmatory samples, (i.e., 3 days) for contaminants of concern, the additional sites will allow equipment to be utilized efficiently to minimize down-time. Within each SEAD, excavation work will focus on individual excavation areas in succession, as directed by the OSR and site conditions.

3.3.1 SEAD 5

A total area of 150 ft by 150 ft has been identified as containing elevated concentrations of metals and SVOCs. This area represents approximately 525 yd^3 of soil in piles and approximately 420 yd^3 of soils underneath and around the existing piles will be removed based on the previous sample results. In order to facilitate waste characterization, WESTON proposes to collect in-situ pre-characterization samples from the proposed excavation areas and sludge piles. However, this will need to be approved of in advance by the USACE.

Once the work areas within the SEAD has been established, standard survey techniques will be utilized to control and measure soil removal progress. Excavation depths will be limited to 6-inches with a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if confirmation soil sampling indicates that the removal of additional material is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water.

All of the soil generated from this SEAD will be directly loaded for disposal.

3.3.2 SEAD 39

A 20 by 50-ft area has been identified as petroleum-impacted soil. Figure 3-1 depicts the excavation areas based on investigation sampling performed to date. This area represents a total of approximately 18.5 yd^3 of impacted material. In order to facilitate waste characterization, WESTON proposes to collect in-situ pre-characterization samples from the proposed excavation areas. However, this will need to be approved of in advance by the USACE.

Once the work area within the SEAD has been established and the results of the pre-characterization sampling have been reviewed, standard survey techniques will be utilized to control and measure soil removal progress. The fill that lies above the blow down liquid discharge level is not likely to be contaminated, so the top six inches of topsoil need not be remediated, transported or disposed. Excavation depths will be limited to 6-inches below the topsoil depth (anticipated 12 inches total) with a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if soil confirmation sampling indicates that the removal of additional soil is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water.

All of the soil generated from this SEAD will be directly loaded for disposal.

Figure 3-1

SEAD 39 Sampling Locations

3.3.3 SEAD 40

A 2 by 120-foot area and a 10 ft by 10 ft "hot spot" area have been identified as petroleum-impacted soil. Figure 3-2 depicts the excavation areas based on investigation sampling performed to date. These areas represent a total of approximately 17 yd^3 of impacted material: approximately 13 cy^3 for the ditch and 4 cy^3 for the "hot spot." In order to facilitate waste characterization, WESTON proposes to collect in-situ pre-characterization samples from the proposed excavation areas. However, this will need to be approved of in advance by the USACE.

Once the work area within the SEAD has been established and the results of the pre-characterization sampling have been reviewed, standard survey techniques will be utilized to control and measure soil removal progress. Excavation depths vary in two portions of the 120 ft ditch excavation area. From the mouth of the drainage pipe to 10 ft downstream, the ditch shall be excavated to a depth of 6 ft: the remainder of the ditch shall be excavated to a depth of one foot. The "hot spot" area will be excavated to a depth of one foot. All excavation depths will be within a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if soil confirmation sampling indicates that the removal of additional soil is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water.

All of the soil generated from this SEAD will be directly loaded for disposal.

3.4 TASK 4 - SAMPLING AND ANALYSIS

A summary of the sampling and analysis to be performed is outlined in the following paragraphs. Complete analyte lists and additional sampling and analysis information is contained in the CSAP.

Figure 3-2

SEAD 40 Sampling Locations

3.4.1 Soil Sampling

Upon completion of soil removal within a specific excavation area, confirmatory soil samples will be collected from the area. Confirmation samples will be collected from the base and sidewalls (if applicable) of each identified excavation. Base (or floor) samples will be collected at a rate of one sample per 900 square ft (ft^2), or a fraction thereof, of the surface area. Base samples will be collected in each 900 ft^2 grid (or less) as a five-point composite (four corners and center of grid section).

At least one discrete sample will be collected from each sidewall of an open excavation that is 12-inches in depth or greater. Sidewall samples will be collected at the midpoint, at a rate of one sample every 30 linear ft of excavation wall length. Sidewall samples will not be collected where the depth of the excavation measures less than 12-inches. For excavations where the sidewalls are less than 12-inches in depth, at least one confirmation soil sample will be collected from the perimeter every 30 linear ft of length at the top of the excavation (1 ft in from the perimeter limit). At least one soil sample will be collected along each excavation edge or sidewall. For excavations of limited base area, but extended length (e.g., drainage ditch associated with SEAD 40) at least one additional soil sample will be collected from the base of excavation for each 30-ft length (or fractions thereof).

Confirmation soil samples will be collected from beneath and around every removed aboveground waste pile or berm structure. At least one soil sample will be collected from the point directly beneath each pile or berm structure, and from at least four other locations (e.g., major compass point locations) that are located around the perimeter of the pile or berm structure. Samples will be collected beneath the removed waste pile or berm structure at a rate of one sample per 900 ft^2 or less, and at a rate of at least one sample every 30 linear ft along the removed pile or berm structure perimeter. The samples will be sent to a NYSDOH Environmental Lead Laboratory Accreditation Program certified and USACE certified laboratory for analysis.

All sampling will be completed using decontaminated, inert sampling equipment. Samples collected for volatile compound analyses will be collected first and will be transferred directly

from the ground to the appropriate container and will not be homogenized. Samples collected for non-volatile analyses will be collected and transferred to an inert mixing bowl and homogenized prior to being placed into their final sample bottles.

3.4.2 Waste Characterization Sampling

Waste characterization samples will be collected at the rate of approximately one (1) composite sample per 500 yd^3 of impacted soil (or lower frequency based on disposal facility approval). In order to expedite the excavation activities, WESTON proposes to collect the waste characterization samples in-situ prior to commencement of excavation activities. If additional soils outside of the preliminary excavation boundaries are determined to require excavation, WESTON will collect additional waste characterization samples of the this soil at the above-specified frequency (unless an alternative sampling frequency is approved).

3.5 TASK 5 - TRANSPORTATION AND DISPOSAL

The anticipated remediation wastes that will result from the site work include liquids, solids, and other remediation-derived waste. Liquids include accumulated storm water within the excavation, additional fluids resulting from dewatering of the work areas, and remediation-derived waste liquids including decontamination fluid. Solids include excavated soil, solids removed from materials handling equipment, and fractional tank sludge bottoms. Other remediation-derived waste includes used personal protective equipment, tarps/polyethylene sheeting, and spent absorbent pads or booms. It is intended that stormwater runoff will not be collected.

Wastes will be transported to licensed disposal facilities based on the results of the waste characterization sampling. Potential disposal options include landfilling (for solids) and pre-treatment followed by discharge to a POTW (for waste water).

Prior to the removal of any waste materials, WESTON will prepare a complete manifest package for each waste stream for the OSR's review and approval. Weston Solutions, Inc. assumes the OSR will expeditiously review and obtain approval for the complete manifest package packages.

No waste will be transported or shipped prior to the OSR's approval of the complete manifest package. At a minimum, the complete waste manifest package will include:

- All hazardous waste manifests
- Hazardous material shipping papers
- Waste profile sheets
- All analytical results
- Any other supporting documentation

In addition, WESTON will verify that the waste transporter(s) and/or the disposal facility(ies) comply with the following criteria, as applicable:

- Be in compliance with all applicable local, state, and federal regulations applicable to the shipment, transport, treatment (if applicable), and/or disposal of non-hazardous and hazardous material, including NYCRR 360 and/or 364.
- Provide a letter from the NYSDEC stating that the proposed landfill facility is in compliance with all applicable regulations.
- Provide all required waste profile sheets.
- Provide a copy of current operating permits, insurance certificates (listing WESTON, the Army, and the USACE as additional insureds), and a letter of acceptance of the waste stream from the facility.
- Tabulation of all shipping/disposal data including manifest number, transporter, shipment date, shipping quantity, disposal date, and receipt of disposal certificate date.

Once a waste stream's complete manifest package has been approved by the OSR, WESTON will coordinate with the OSR to determine appropriate haul routes. Weston Solutions, Inc. will utilize the Off-Site Transportation and Disposal Checklist and the Transportation and Disposal Tracking Forms to track all material shipped off-site.

3.5.1 Liquids

Liquid wastes will be characterized in accordance with the applicable NYSDEC TAGM requirements, 40 CFR 261, as well as any site specific testing criteria required by the disposal facilities. Liquids will be staged and managed in the appropriate containers. Containers will be

closed to prevent the addition of water via precipitation and release of organic vapors. Care will be taken to prevent the release or spillage of liquids from their containers.

3.5.2 Soil

Soils and other solid wastes will be characterized in accordance with NYSDEC TAGM requirements, 40 CFR 261, as well as any site specific testing criteria required by the disposal facilities. After load-out of the soils into trucks for transportation to a designated disposal facility, all loads will be covered before leaving the site and during transportation.

3.6 TASK 6 - SITE RESTORATION

Upon completion of soil removal from work area, WESTON will grade all shallow excavation sidewalls into the open excavation to match the top of to the slope while maintaining sufficient grade and/or tolerance for surface drainage. The areas will be seeded with a native rye grass mix (or other mix approved by the OSR) once grading is completed. Backfill for shallow excavations, topsoil, water, mulch, or perpetual care is not anticipated. It is not anticipated that a separate mobilization will be performed for seeding operations.

Excavations greater than 6 inches will be backfilled utilizing clean fill from a SEDA on-site source. The areas will be returned to their original grade. Fill material shall be spread uniformly using approved equipment in layers no greater than 12 inches. Compaction shall be performed by tamping with the excavator bucket or by the use of compacting equipment. Compaction testing will not be required.

Erosion and sedimentation controls will be removed at the direction of the OSR. Additional site restoration (if any) will be determined by the OSR.

3.7 TASK 7 - DEMOBILIZATION

Upon completion of site restoration activities, WESTON will request the OSR to perform an Initial Project Completion Inspection. Any punch list items generated as a result of the completion inspection shall be made to the satisfaction of the USACE. Weston Solutions, Inc.

will remove all material and equipment from the work site once the Final Project Completion Inspection is performed and the site is accepted for release.

U.S. Army Corps of Engineers

Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT
TIME CRITICAL REMOVAL ACTION
AT INDUSTRIAL WASTE SITE
(SLUDGE PILES) - SEAD-5
AND VOC SITES – SEADS 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0069 & 0034

FINAL
SITE SAFETY AND HEALTH PLAN

JULY 2003

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

FINAL
SITE SAFETY AND HEALTH PLAN
SENECA ARMY DEPOT ACTIVITY
INDUSTRIAL WASTE SITE (SLUDGE PILES) – SEAD-5
AND VOC SITES – SEAD'S 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0069 & 0034

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Castle Hall Building No. 525,
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Offutt AFB, Nebraska 68113

Prepared by:

WESTON SOLUTIONS, INC.
One Wall Street
Manchester, New Hampshire 03101-1501

July 2003

W.O. No. 20074.515.069 and .034

Site Safety and Health Plan
Approval/Signoff Form
Industrial Waste Site (Sludge Piles) - SEAD-5
and VOC Sites – SEAD's 39 & 40
Seneca Army Depot Activity
Romulus, NY

Contract No. DACA45-98-D-0004

SITE SAFETY AND HEALTH PLAN APPROVALS

By their specific signature, the undersigned certify that this Site Safety and Health Plan is approved for utilization during site remediation activities at the Industrial Waste Site (Sludge Piles) – SEAD-5 and VOC Sites – SEAD's 39 & 40 located at the Seneca Army Depot in Romulus, New York.

Signature, Name, Title

WESTON – Operations Manager Christopher Henry	Date
WESTON - Project Manager Guy Johnstone	Date
WESTON - Program CIH George M. Crawford, CIH	Date
WESTON - Site Safety and Health Officer TBD	Date

Site Safety and Health Plan
Approval/Signoff Form
Industrial Waste Site (Sludge Piles) - SEAD-5
and VOC Sites – SEAD's 39 & 40
Seneca Army Depot Activity
Romulus, NY

Contract No. DACA45-98-D-0004

I understand, agree to, and will abide by the information set forth in this Site Safety and Health Plan, and the information discussed in the Daily Safety and Health briefings.

Name	Signature	Date

Name	Signature	Date

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LIST OF ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
BRAC	Base Realignment and Closure
CAMP	Community Air Monitoring Plan
CGI	combustible gas indicator
CIH	Certified Industrial Hygienist
FLDs	Field Operating Procedures
FID	Flame ionization detection
ft	feet/foot
mg/kg	milligrams per kilogram
µg/kg	microgram per kilogram
$\mu g/m^3$	microgram per cubic meter
MSDSs	Material Safety Data Sheets
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O_2	oxygen
OSHA	Occupational Safety and Health Administration
OSR	On-Site Representative
PID	Photoionization detector
PNOC	Particulates Not Otherwise Classified
PPE	personal protective equipment
ppm	parts per million
QC	Quality Control
SEDA	Seneca Army Depot Activity
SOW	Scope of Work
SSH/QCO	Site Safety and Health/Quality Control Officer
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SVOCs	semivolatile organic compounds.
SWMUs	Solid Waste Management Units
TAGM	Technical and Administrative Guidance Memorandum
TLVs	threshold limit values

LIST OF ACRONYMS
(continued)

USACE	U.S. Army Corps of Engineers
VOCs	volatile organic compounds
$WESTON_{SM}$	Weston Solutions, Inc.
WP	Work Plan
yd^3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

Site Safety and Health Plan (SSHP) was prepared by Weston Solutions, Inc. ($WESTON_{SM}$) for the Scope of Work (SOW) described by the U.S. Army Corps of Engineers (USACE) for the work at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This rapid response project executes a time critical removal action intended to provide clean closure to the Industrial Waste Site (Sewage Sludge Waste Piles - SEAD-5), the Boiler Blow down Leach Pit north of Building 121 (SEAD 39), and the Boiler Blow down Leach Pit next to the railroad tracks and north of Building 319 (SEAD 40), and to facilitate transfer of these properties for public and private beneficial reuse. This work will be performed under the Rapid Response/Immediate Response Contract for Control/Remediation of Hazardous, Toxic and Radioactive Waste, Task Order Nos. 0069 and 0034 of Contract No. DACA45-98-D-0004. Seneca Army Depot Activity has been closed under the Department of Defense's Base Realignment and Closure (BRAC) process. The work for this project generally shall include the following:

- Mobilization of construction equipment and temporary office and storage trailers to the project site.
- Site preparation including removal of brush and vegetation, installation of drainage and erosion control measures around excavation and temporary storage areas, construction of personnel and equipment decontamination stations.
- Removal and temporary storage of contaminated soils, sediments and waste piles.
- Sampling to verify clean-up goals have been achieved.
- Transportation and disposal of all waste material generated during the execution of this task order.
- Backfilling of select areas and grading and seeding of all excavation areas.
- Demobilization of equipment and restoration of the site.

Appropriate, Relevant, and Applicable Requirements for the technical portions of this project include, but are not limited to the following:

- New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) HWR089-4031, *"Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites,"* October 27, 1989.

- New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) #4046, *"Determination of Soil Cleanup Levels,"* January 1994.

- New York State Department of Health (NYSDOH) Community Air Monitoring Program.

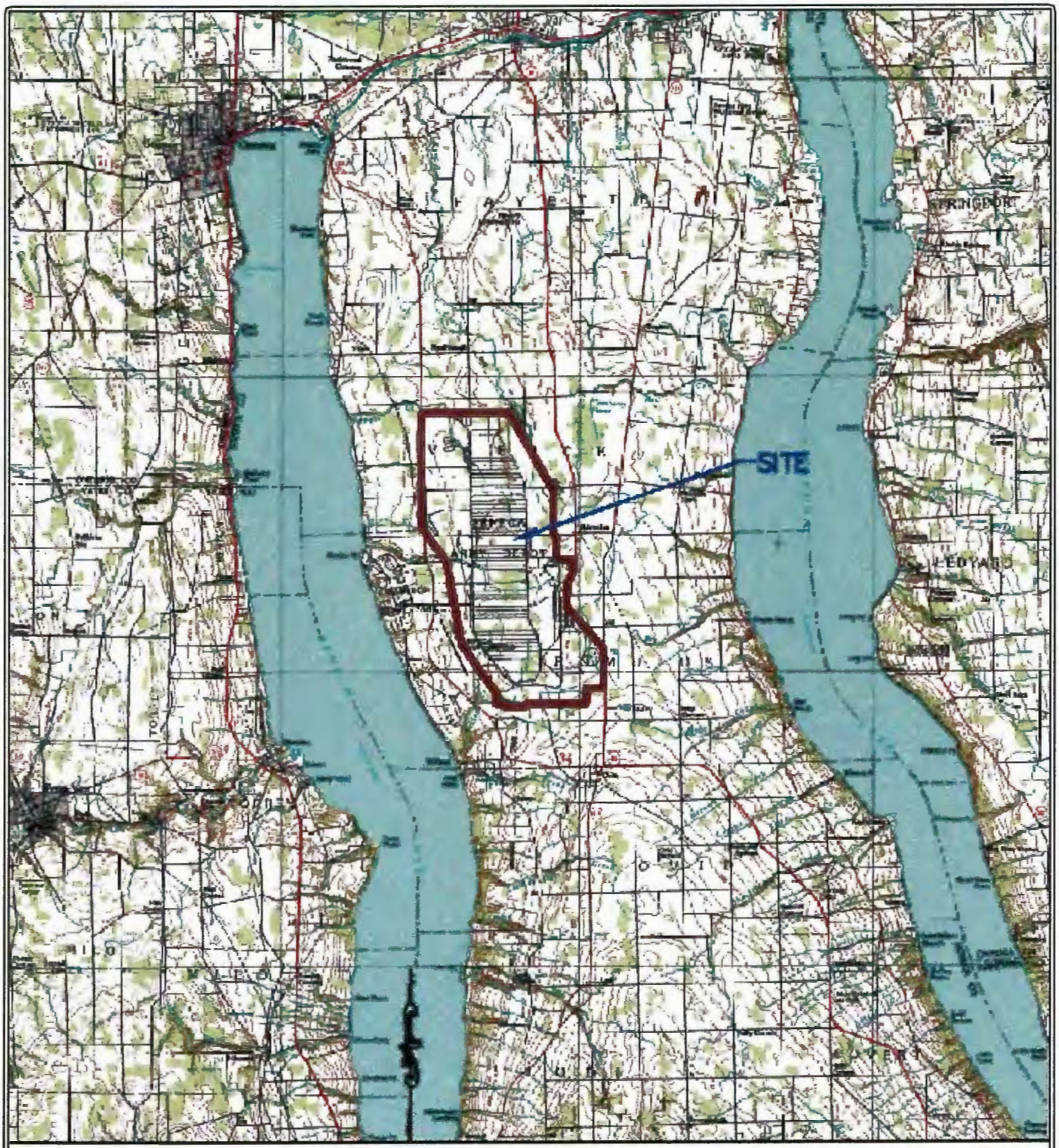
- New York Codes, Rules, and Regulations 364-376.

1.2 SITE DESCRIPTION

1.2.1 Site Location and Description

The SEDA is located in Romulus, Seneca County, New York (see Figure 1-1). Seneca Army Depot Activity is a U.S. Army facility and occupies approximately 10,600 acres. It is bounded to the west by State Route 96A and on the east by State Route 96. Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 50 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for agriculture

Time-critical removal actions are planned at three Solid Waste Management Units (SWMUs) at SEDA. The three SWMUs have been designated as SEADs 5, 39, and 40. Historical operations at these sites resulted in contaminated waste piles and contamination of shallow and in some cases deep soils [up to depth of 6 feet (ft)] with total petroleum hydrocarbons (TPH), semivolatile organic compounds (SVOCs), metals. Some migration of contaminants to surficial soil in drainage ditches located near the SWMUs may have occurred.



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
3 1.5 0 1.5 3
APPROXIMATE SCALE IN MILES

LEGEND:	TITLE: SITE LOCATION MAP
PROJECT: TIME CRITICAL REMOVAL ACTION SEADS 5,39&40 SEDA ROMULUS, NY	
CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST. CORPS OF ENGINEERS OMAHA,NE	WESTON
DATE: 6-26-03	FIGURE #: 1-1

00688

1.2.1.1 SEAD-5

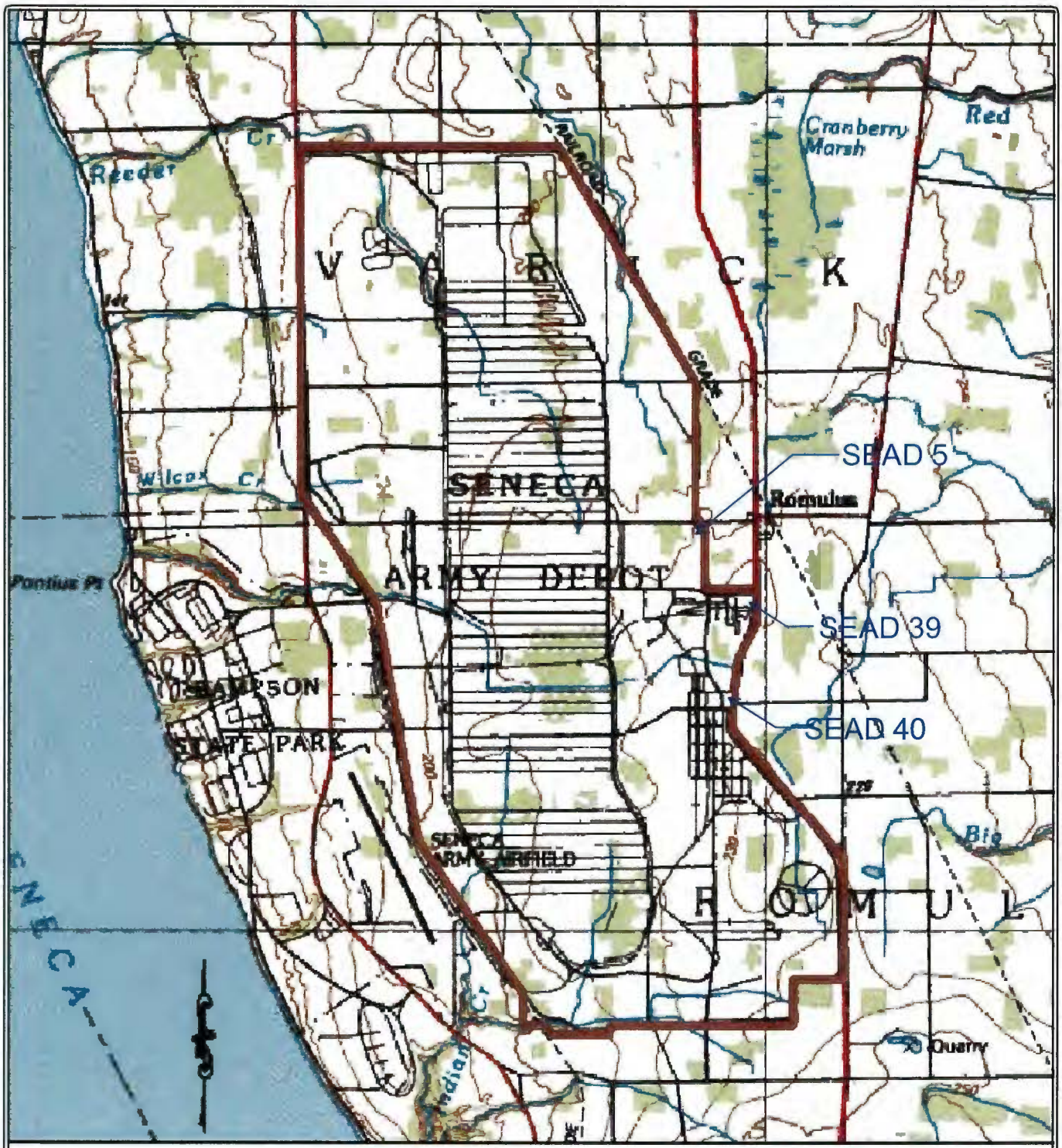
SEAD-5 is located approximately 600 ft due west of Building 135 and consists of 5-6 sewage sludge piles ranging 5-10 ft high derived from 2 on-site sewage treatment plants, Buildings 4 and 715. The entire site covers an area approximately 150 ft by 150 ft. (reference Figure 1-2)

1.2.1.2 SEAD-39

The Boiler Blow down Leach Pit known as SEAD-39 is located immediately to the north of Building 121 and is between Building 121 and Center Street. Building 121 is an active boiler plant located in the administrative area (i.e., halfway along the eastern border) of the SEDA. The historic blowdown area associated with Building 121 is located north of the building. The land surface to the north of the building is grass covered and is slightly mounded between the building and Center Street. Currently the pit itself is not visible as there are no obvious depressions where blow down could have accumulated. Center Street, which runs in an east-west direction, is located 50 ft to the north of Building 121 and the suspected location of the former leach pit. (reference Figure 1-2)

1.2.1.3 SEAD-40

The Boiler Blow down Leach Pit known as SEAD-40 is located in a drainage ditch next to railroad tracks to the north of Building 319. Building 319 is an active boiler plant located on 1st Street. A drainage pipe originating in Building 319 is suspected to have carried blow down liquids into the drainage ditch. The ditch originates at the mouth of the pipe approximately 30 ft northeast of Building 319. The ditch continues for approximately 400 ft and eventually levels into a grassy field. The ground surface to the north of Building 319 and south of the drainage ditch is covered with asphalt. (reference Figure 1-2)



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
1 0.5 0 0.5 1
APPROXIMATE SCALE IN MILES

LEGEND:	TITLE: SITE PLAN
PROJECT: TIME CRITICAL REMOVAL ACTION SEADS 5,39&40 SEDA ROMULUS, NY	
CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST. CORPS OF ENGINEERS OMAHA,NE	WESTON
DATE: 6-26-03	FIGURE #: 1-2

00689

1.2.2 Site Background

1.2.2.1 SEAD-5

This site consists of 5-6 sewage sludge piles ranging 5-10 ft high derived from two on-site sewage treatment plants, Building numbers 4 and 715. Sewage sludge was stockpiled at this site during the early 1980's. The sludge was removed from drying beds and transported to this site on two-month intervals from the above-mentioned on-site sewage treatment plants. The entire site covers an area approximately 150 ft by 150 ft.

A limited sampling program performed at the Industrial Waste Site (Sewage Sludge Waste Piles, SEAD-5) at SEDA demonstrated that releases may have occurred. Results of testing conducted showed no impact on groundwater and subsurface soils. Some semi volatile organic compounds and inorganic elements have impacted the sludge piles and surface soil. Heavy metals such as copper, mercury, silver, and zinc were detected.

Initially, approximately 525 cubic yards (yd^3) of soil in piles and approximately 420 yd^3 of soils underneath and around the existing piles will be removed based on the previous sample results.

1.2.2.2 SEAD-39

The Boiler Blow down Leach Pit known as SEAD-39 is located immediately to the north of Building 121. The land surface to the north of the building is grass covered and is slightly mounded between the building and the street. Currently the pit itself is not visible as there are no obvious depressions where blow down could have accumulated. Use of the leaching area was terminated in approximately 1979 or 1980, when all boiler blowdown points were connected to the sanitary sewer. Between the time when the boilers were installed and 1979-1980, the boilers discharged between 400 and 800 gallons of blowdown liquids per day. Blowdown was released three times per day, and the discharged liquid was allowed to flow into the drainage system in the street and partly into the ground.

A Limited Sampling Programs performed in 1993 and 1994 at the Boiler Blow down Leach Pit site (SEAD 39) at SEDA demonstrated that releases may have occurred. Samples were analyzed

for TPH and indicated concentrations less than 100 parts per million (ppm) with the exception of one sample at 118 ppm.

Initially, approximately 18.5 cy^3 of petroleum-impacted soil will be removed based on previous sampling results. Another 18.5 cy^3, representing the top six inches of topsoil, will also be removed and segregated, as it is not anticipated to be contaminated because it was placed as a landscaping cover after the historic blowdown operation was terminated in 1980.

1.2.2.3 SEAD-40

The Boiler Blow down Leach Pit known as SEAD-40 is located in a drainage ditch next to railroad tracks to the north of Building 319. Building 319 is an active boiler plant located on 1st Street. A drainage pipe originating in Building 319 is suspected to have carried blow down liquids into the drainage ditch. The ditch originates at the mouth of the pipe approximately 30 ft northeast of Building 319. The ditch continues for approximately 400 ft and eventually levels into a grassy field. The ground surface to the north of Building 319 and south of the drainage ditch is covered with asphalt. Use of the leaching area was terminated in approximately 1979 or 1980, when all boiler blowdown points were connected to the sanitary sewer. Between the time when the boilers were installed and 1979-1980, the boilers discharged between 400 and 800 gallons of blowdown liquids per day. Blowdown was released three times per day, and the discharged liquid was allowed to flow into the drainage ditch and partly into the ground.

A Limited Sampling Programs performed in 1993 and 1994 at the Boiler Blow down Leach Pit site (SEAD 40) at SEDA demonstrated that releases may have occurred. Samples were analyzed for TPH with surface samples indicating concentrations of 1,270 and 1,640 ppm and subsurface samples indicating 300-680 ppm. A "hot spot", located between Building 319 and the drainage ditch, was identified with a concentration of 420 ppm.

Initially, approximately 17 cy^3 of petroleum-impacted soil will be removed based on previous sampling results. Approximately 13 cy^3 will be removed from the drainage ditch and approximately 4 cy^3 will be removed from the "hot spot."

SECTION 2

PERSONNEL AND RESPONSIBILITIES

2. PERSONNEL AND RESPONSIBILITIES

All operations and personnel having the potential for exposure to site hazards are subject to the requirements of this SSHP. Roles and responsibilities for site personnel are summarized in the following sections and are described in the SSHP. An organizational chart depicting the chain of command for this project is presented in Figure 2-2 in the Work Plan (WP).

2.1 PROGRAM MANAGER

Mr. Frank Monahan serves as the Program Manager for all Rapid Response task orders. Mr. Monahan is responsible for ensuring that WESTON executes all task orders efficiently, expediently, and with the highest degree of competency.

Weston Solutions, Inc. Program Management Office will support the Project Manager with regard to purchasing, soliciting of vendors, and evaluation of bids including consent packages, property management, and Certified Industrial Hygienist (CIH) issues. He will also ensure that the "complete manifest packages" are in order for submittal to CENWO-CD-FC, will oversee the tracking of manifest packages if required under the task order, and, will prepare vouchers for submittal to CENWO-CD-FC.

2.2 PROJECT MANAGER

Mr. Guy Johnstone will serve as the Project Manager for the activities covered in the Final WP. He has overall financial and schedule responsibility for the project, will approve all vouchers to CENWO-CD-FC, and has the authority to negotiate change orders. A delegation letter authorizing Mr. Johnstone to negotiate on behalf of WESTON will be sent under separate cover.

2.3 SAFETY AND HEALTH MANAGEMENT

2.3.1 Program Safety Officer

The Program Safety Officer for this project is George M. Crawford, CIH. Mr. Crawford is certified in comprehensive practice of industrial hygiene by the American Board of Industrial

Hygiene. He has over 20 years of industrial hygiene and safety experience. The CIH will have the following responsibilities:

- Review and final approval of the SSHP.
- Ensure that the SSHP complies with all federal, state, and local health and safety requirements. If necessary, modify specific aspects of the SSHP to adjust for on-site changes that affect safety.
- Evaluate and authorize any changes to the SSHP.
- Implementation and oversight of the Health and Safety Program.
- Assist in acting as liaison with government officials regarding health and safety-related site matters.
- Maintain frequent communication with the Site Safety and Health Officer (SSHO) regarding site activities and implementation of the SSHP.
- Assist in training site personnel in the site-specific hazards.
- Ensure site and personnel compliance with the WESTON Safety Program.

2.3.2 Site Safety and Health Officer

The Site Safety and Health/Quality Control Officer (SSH/QCO) will be responsible for the implementation of the SSHP and for ensuring that all project personnel follow the requirements of the SSHP. The SSH/QCO will conduct daily tailgate safety meetings and will be responsible to report any incidents that occur on the site to the Site Manager, Project Manager, Program Manager, and CIH. He is responsible to implement any safety corrective actions identified through training and reinforced awareness.

The SSH/QCO will also be responsible for the implementations of WESTON's quality control (QC) measures outlined in this Draft WP. The SSH/QCO will be responsible for implementing the four phases of construction (Preparatory Inspection, Initial Inspection, Follow-up Inspection, and Final Inspections) for each new feature of work and throughout the workday. The SSH/QCO will be responsible for preparing the Rapid Response QC Daily Report, and will assist the

Project Manager in the preparation of the Rapid Response Weekly Report and the Final Project Report.

2.4 SITE MANAGER

Mr. Miles Gelatt will serve as the Site Manager for this project. The Site Manager will be responsible for coordinating and supervising all site activities, including:

- Supervision of WESTON and WESTON subcontractor work forces.
- Compliance with WESTON's SSHP.
- Supervision of WESTON's Contractors QC Plan.
- Submission of weekly cost tracking, construction reporting, and scheduling information.

2.5 CORE FIELD TEAM

Weston Solutions, Inc. will designate a Core Field Team that will assist the Site Manager with managing the daily progress, technical issues, and property management issues associated with the project. The Core Field Team will include the SSH/QCO, and sampling technicians as is necessary.

2.6 WESTON SUBCONTRACTORS

Subcontractors will be brought onto the site for specialty services. These subcontractors will be under the ultimate direction of the Site Manager.

SECTION 3

CONTAMINANT CHARACTERIZATION

3. CONTAMINANT CHARACTERIZATION

At SEAD-5, sludge piles, subsurface soil and groundwater have been tested for heavy metals, pesticides/polychlorinated biphenyls, nitrates, cyanides, and SVOCs and volatile organic compounds (VOCs). Results of testing conducted showed no impact on groundwater and subsurface soils. Some SVOCs and inorganic elements have impacted the sludge piles and surface soil. Heavy metals such as copper, mercury, silver, and zinc were detected. At SEAD's 39 & 40, TPH were detected in surface and subsurface soils.

3.1 CHEMICAL HAZARDS: ON SITE ACTIVITIES

The remedial activities require the use of concentrated chemicals for proper decontamination of equipment. The following chemicals are expected to be used during the activities on-site:

- Alconox/liquinox
- Diesel fuel
- Gasoline
- Oil & Grease
- 10% nitric acid
- Acetone (pesticide grade) rinse

Table 3-1

Contaminants of Concern (SEAD-5, 39, 40)
Highest Reported Concentrations

Contaminant	Maximum Concentrations in soil or sediment
SVOCs	(*)
Copper	(*)
Mercury	(*)
Silver	(*)
Zinc	(*)
TPH	1,640 mg/kg

Notes: (*) – Data collected during previous sampling rounds is not currently available.
mg/kg – milligrams per kilogram

A Site Specific Hazard Communication Program is contained in Appendix A. An inventory of the chemicals and the Materal Safety Data Sheets (MSDSs) can be reviewed in the MSDS binder maintained in the site trailer. All subcontractors shall inform WESTON of all chemical materials brought on-site and the location of their MSDSs.

SECTION 4

SCOPE OF WORK AND FIELD ACTIVITIES

4. SCOPE OF WORK AND FIELD ACTIVITIES

The SOW consists of site visit, mobilization, site preparation, soil removal, sampling & analysis, transportation and disposal of wastes, site restoration, and demobilization. Field activities are summarized below.

The major activities identified for the project can be summarized as follows:

- **Task 1. Mobilization**: This task will include procurement and mobilization of all equipment and personnel necessary to perform the work.

- **Task 2. Site Preparation**: This task will include layout of work areas, installation and maintenance of erosion and sedimentation controls (as applicable), clearing and grubbing, establishing work zones including equipment staging, and installation of construction fencing.

- **Task 3. Soil Removal**: This task consists of the removal of sludge piles and approximately six inches of soil from the identified contaminant areas in SEADs 5, 39, and 40 and the collection of confirmatory soil samples to verify removal of contaminants.

- **Task 4. Sampling and Analysis**: This task outlines the soil verification and waste characterization sampling requirements for this SOW.

- **Task 5. Transportation and Disposal**: This task will include the preparation of waste manifests and shipping papers and transportation and disposal of the liquids and soils to licensed waste disposal facilities. It is assumed that soil, personal protective equipment (PPE), and wastewater will be transported to an off-site facility for treatment and/or disposal.

- **Task 6. Site Restoration**: This task will include backfilling of select areas, rough grading, seeding, removal of erosion and sedimentation controls, and other restoration activities as determined by the OSR.

- **Task 7. Demobilization:** This task will include the demobilization of all equipment, personnel, and materials from the project site following completion of all field work.

SECTION 5

ACTIVITY HAZARD ANALYSIS

5. ACTIVITY HAZARD ANALYSIS

The activity hazard analysis is an ongoing process from the initiation of the SSHP preparation through the implementation and completion of the project. Therefore, the activity hazard analyses shall be completed for each task associated with the project. Site-specific activity hazard analyses are presented in this Section. Weston Solutions, Inc. Field Operating Procedures (FLDs) are contained in the WESTON's Safety Officer Field Manual. The manual will be maintained on-site. The hazards associated with each activity and the control measures are provided Table 5-1.

Equipment, inspection, and training requirements for each activity are identified in Table 5-2. Inspection and training requirements for the FLDs referenced in the Activity Hazard Analysis tables in this section are described in WESTON Safety and Health program. Health and safety equipment to be used, such as monitoring instruments and PPE, is specified in sections of this SSHP. Additional field equipment is specified in the WP and Chemical Sampling and Analysis Plan for this project.

5.1 PHYSICAL HAZARDS

In addition to the physical hazards outlined in the Activity Hazard Analysis Sheets (see Table 5-1), the special physical hazard that has the potential to affect worker and public safety is addressed below.

5.1.1 Excavations

Excavations will be delineated by stakes and flagging during soil removal activities. Excavations will remain delineated prior to confirmation sampling. Compliance with Occupation Safety and Health Administration (OSHA) 29CFR1926 Subpart P, and COE EM 385-1-1, Section 25, will be maintained. The current planned depth of soil excavations vary from 6-inches to 6 ft below existing grade. After source removal and confirmatory sampling, the edge of the shallow excavations will be gently sloped to meet existing grade while the deeper excavations will be backfilled with on-site materials.

Table 5-1
Activity Hazard Analysis

s 1 & 2 - Mobilization and Site Preparation

Task	Hazards	Hazard Control
zation of man power and ient, establish work zones, locate round utilities, site specific g, clearing activities.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low. Focus on hazard awareness and change of conditions.	No intrusive activities allowed during this task. Wear appropriate PPE for and to prevent dermal contact. Avoid liquid pools and stained areas if pos initial visual survey will be conducted to confirm the levels of protection for the task. Pay particular attention to shallow subsurface soil during ero sedimentation control installation with emphasis on hazard recognition. A levels established in the Table 6-1 will be used.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shal removed or marked and barricaded. Work to be completed in adequate na or assure sufficient illumination is maintained. Site personnel shall condu initial walkover in groups of two at a minimum. Site personnel shall refer follow WESTON FLDs 02-Inclement weather and 39-Illumination. Also FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work ar kept organized and ice, snow and mud will be cleared from steps to reduc hazards. See FLD 12.
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with l twisting back; use mechanical equipment or get help from others. See FL
	Fire	Flammable liquids will be stored in safety containers and flammable stor cabinets. Propane cylinders will be stored outside in secured areas. Fuel s tanks will be placed in impermeable dikes. Properly rated fire extinguish placed within 50 ft of the fuel storage area, in construction equipment, ar strategically in the construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate car handling and placement of heavy objects. Materials and objects being ha be inspected for rough or sharp edges, and appropriate precautions shall avoid contact. Personnel shall wear work gloves and avoid placing hands objects.

Table 5-1
Activity Hazard Analysis

1 & 2 - Mobilization and Site Preparation (continued)

	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will b rated for intended use. Prior to any intrusive activity, authorities will be c for permits. Elevated parts of machinery, ladders, and antennas will be ke 10 ft from overhead electric lines. Electrical Installations will be made by electricians. A lockout/tagout program consistent with FLD 42 will be us equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during opera Maintain safe distance from moving mechanical parts. Always use appro See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out o until repair can be performed by a qualified person. Use tools properly an intended purpose. All power circuits used for hand tools will be protected ground fault circuit interrupter. See FLD 38.

1 & 2 - Mobilization and Site Preparation (concluded)

	Striking and being struck by operating equipment, loads, falling objects, and pinch points.	Workers shall stay out of the swing area of all equipment and from under personnel shall ride on the equipment unless seats are provided. See FLD 23, and 24. Workers exposed to traffic hazards will wear traffic/reflectori Vehicles will be checked during maintenance and cribbed if wheels need changed. Due to the remote nature of the sites, it is anticipated that vests required, however, this shall be monitored by the SSHO.
	Inclement weather, Heat/Cold stress Traffic	Workers shall be briefed and cognizant of heat and cold stress symptoms. will be available to workers. See FLD 05 and 06. Work rest periods will b established according to American Conference of Governmental Industria Hygienists (ACGIH) and National Institute for Occupational Safety and H (NIOSH) guidelines. Salt will be applied to walkway and roadway surfac ice is a problem. Work areas will be clearly barricaded and appropriate signs displayed. Tr be rerouted as necessary. Persons working near roadways or directing tra wear high visibility vests. See FLD 20.
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of this appropriate measures as required. Adhere to WESTON Bloodborne Patho Exposure Control Plan—First Aid Procedures FLD 43.
	Radiation—Potential sun burn/sun poisoning hazard on bright, sunny days. Based on-site history, no historical records of ionizing radiation use or storage in SEADs 2424, 50/54 & 67.	Use sunblock as appropriate. Avoid direct exposure to sun for long perio There is no known source of radioactive material at this site.

3—Soil Removal (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will coordinate careful handling and placement of heavy objects. Materials and objects being ha be inspected for rough or sharp edges, and appropriate precautions shall to avoid contact. Personnel shall wear work gloves and avoid placing ha between objects. See FLD 10.
	Noise during the operation of heavy equipment and during operation of the treatment system.	A hearing conservation program consistent with FLD 01 will be establis noise areas will be identified. Hearing protection will be provided as ap The latest ACGIH threshold limit values (TLVs) will be used.
	Fire	Flammable liquids will be stored in safety containers and flammable sto cabinets. Propane cylinders will be stored outside in secured areas. Fuel tanks will be placed in impermeable dikes. Properly rated fire extinguis be placed within 50 ft of the fuel storage area, in construction equipmen strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will properly rated for intended use. Prior to any intrusive activity, authoritie contacted for permits. Elevated parts of machinery, ladders, and antenna kept at least 10 ft from overhead electric lines. Electrical Installations w made by qualified electricians. A lockout/tagout program consistent wit will be used for equipment maintenance.
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of thi appropriate measures as required. Adhere to WESTON Bloodborne Pat Exposure Control Plan—First Aid Procedures FLD 43.
	Radiation—There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long peri time. There is no known source of radioactive material at this site.

3—Soil Removal

Task	Hazards	Hazard Control
d sediment will be removed oil piles, impacted surface nd drainage swales and .	***Chemical Hazards***—The potential for exposure is present while conducting these activities because the soil and sediment may be contaminated. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary. Avoid direct contact sediment and also spills and splash of water. Appropriate PPE will be ut during these activities. Air monitoring will be performed as described in Any excavations that exceed 4 feet will be inspected by a qualified and competent person to determine appropriate sloping and/or shoring (See
	Physical Hazards—Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces. Weather hazards, such as severe weather and lightning; poor visibility.	The work area will be visually inspected. Slip, trip, and fall hazards sha removed or marked and barricaded. Sufficient illumination shall be mai ensure a safe working environment and weather conditions to be contin monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with twisting back, use mechanical equipment or get help from others. The w will be visually inspected. See FLD 10.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work a be kept organized and ice, snow and mud will be cleared from steps to r hazards. See FLD 12.
	Inclement weather, including rain/snow, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel w high temperatures or direct sunlight shall follow FLD 05. Personnel wo cold temperatures or rain shall follow FLD 06. Work will cease during
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefu handling equipment operations. Guards will be kept in place during ope Maintain safe distance from moving mechanical parts. Always use appr PPE. See FLD 22.

4—Sampling and Analysis

	Hazards	Hazard Control
d sediment will be removed oil piles, impacted surface nd drainage swales and .	***Chemical Hazards***—The potential for exposure is present while conducting these activities because the soil and sediment may be contaminated. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary. Avoid direct contact sediment and also spills and splash of water. Appropriate PPE will be ut during these activities. Air monitoring will be performed as described in Any excavations that exceed 4 feet will be inspected by a qualified and competent person to determine appropriate sloping and/or shoring (See
	Physical Hazards—Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces. Weather hazards, such as severe weather and lightning; poor visibility.	The work area will be visually inspected. Slip, trip, and fall hazards sha removed or marked and barricaded. Sufficient illumination shall be mai ensure a safe working environment and weather conditions to be contin monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with twisting back, use mechanical equipment or get help from others. The v will be visually inspected. See FLD 10.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work be kept organized and ice, snow and mud will be cleared from steps to hazards. See FLD 12.
	Inclement weather, including rain/snow, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel high temperatures or direct sunlight shall follow FLD 05. Personnel wo cold temperatures or rain shall follow FLD 06. Work will cease during
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefu handling equipment operations. Guards will be kept in place during ope Maintain safe distance from moving mechanical parts. Always use appr PPE. See FLD 22.

4—Sampling and Analysis (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will coordinate carefull handling and placement of heavy objects. Materials and objects being ha be inspected for rough or sharp edges, and appropriate precautions shall to avoid contact. Personnel shall wear work gloves and avoid placing ha between objects. See FLD 10.
	Noise during the operation of heavy equipment and during operation of the treatment system.	A hearing conservation program consistent with FLD 01 will be establis noise areas will be identified. Hearing protection will be provided as ap The latest ACGIH TLVs will be used.
	Fire	Flammable liquids will be stored in safety containers and flammable sto cabinets. Propane cylinders will be stored outside in secured areas. Fuel tanks will be placed in impermeable dikes. Properly rated fire extinguis be placed within 50 ft of the fuel storage area, in construction equipmen strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will properly rated for intended use. Prior to any intrusive activity, authoritie contacted for permits. Elevated parts of machinery, ladders, and antenna kept at least 10 ft from overhead electric lines. Electrical Installations w made by qualified electricians. A lockout/tagout program consistent wit will be used for equipment maintenance.
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of thi appropriate measures as required. Adhere to WESTON Bloodborne Pat Exposure Control Plan—First Aid Procedures FLD 43.
	Radiation—There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long peri time. There is no known source of radioactive material at this site.

5—Transportation and Disposal

	Hazards	Hazard Control
ctivities will include ortation and disposal tions. Heavy equipment on during excavation, g, transferring, and ing activities, verification mpling, and pressure g equipment.	***Chemical Hazards***—The likelihood of exposure is present while conducting these activities because the soil and sediments were found to be contaminated with metals, semivolatile organics, and total petroleum hydrocarbons. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary to control dust problems Appropriate PPE will be utilized during excavation activities to prevent de contact with soil. Air monitoring will be conducted to monitor the exposu contaminants.
	Physical Hazards—Slip, trips, falls while covering soils and from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility.	The work area will be visually inspected. Slip, trip, and fall hazards shall removed or marked and barricaded. Sufficient illumination shall be maint ensure a safe working environment and weather conditions to be continuo monitored. See FLD 11, 12, and 39.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during opera Maintain safe distance from moving mechanical parts. Always use approp See FLD 22.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with le twisting back, use mechanical equipment or get help from others. The wo be visually inspected. See FLD 10.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work ar kept organized and ice, snow and mud will be cleared from steps to reduc hazards. See FLD 12.
	Water Hazards, Inclement weather, including rain, lightning, and cold stress.	Personnel shall have appropriate PPE; personnel working in water, rain o follow FLDs 02, 06 and 19.

5—Transportation and Disposal (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will coordinate carefully handling and placement of heavy objects. Materials and objects being han be inspected for rough or sharp edges, and appropriate precautions shall b avoid contact. Personnel shall wear work gloves and avoid placing hands objects. See FLD 10.
	Striking and being struck by operating equipment, loads, falling objects, and pinch points.	Workers shall stay out of the swing range of all equipment and from unde personnel shall ride on the equipment. Remain within view of operator. A equipment should be equipped with back-up alarms. See FLD 20, 22A, 23 Workers exposed to traffic hazards will wear traffic/reflectorized vests. A control system for positioning and moving haul vehicles will be establishe vehicle operators may remain in their vehicles only if they have cab over If operators must check loads, loading will cease until the operator is back cabin or away from the vehicles in a safe location.
	Fire	Flammable liquids will be stored in safety containers and flammable stora cabinets. Propane cylinders will be stored outside in secured areas. Fuel st tanks will be placed in impermeable dikes. Properly rated fire extinguishe placed within 50 ft of the fuel storage area, in construction equipment, an strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will b rated for intended use. Prior to any intrusive activity, authorities will be c for permits. Elevated parts of machinery, ladders, and antennas will be ke 10 ft from overhead electric lines. Electrical Installations will be made by electricians. A lockout/tagout program consistent with FLD 42 will be us equipment maintenance.
	Noise during the operation of heavy equipment.	A hearing conservation program consistent with FLD 01 will be establish noise areas will be identified. Hearing protection will be provided as appr The latest ACGIH TLVs will be used.

5—Transportation and Disposal (concluded)

	Soil excavating.	Personnel working near or around an open excavation shall avoid walking standing near the edge of the excavation. Proper sloping and benching wil to prevent cave-ins and undermining. Excavation equipment and soil piles be closer than two ft from the edge of excavation. No personnel are allow excavations unless the required bracing, shoring, inspection, and monitori performed. Excavation edge will be flagged and barricaded. Visually insp excavation daily for signs of stress fractures. See FLD 28. If the excavation goes below 4 feet, a qualified and designated competent will be available to make soil evaluations and determine sloping and shor requirements.
	Underground and aboveground utilities. Pressure washing equipment. Inclement weather, Heat and Cold stress	Utility companies will be contacted prior to any excavation. All known ut be marked prior to digging. Proper clearances from above ground wires w maintained during all activities. SSHO to be notified upon detection of an utilities. See FLD 34. Personnel will be informed of the hazards associated with the operation o washers including water under pressure and steam. Personnel will wear a PPE including splash protection. See FLD 37. Personnel will be informed of the heat/cold stress symptoms. Appropriate fluids will be supplied to workers. See FLD 05 and 06. Work rest periods established according to ACGIH and NIOSH guidelines.
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of this appropriate measures as required. Adhere to WESTON Bloodborne Path Exposure Control Plan—First Aid Procedures FLD 43.
	Radiation—Potential sun burn/sun poisoning hazard on bright, sunny days. The historical use of the site does not indicate the potential for radiation hazards.	Use sunblock as appropriate. Avoid direct exposure to sun for long perio There is no known source of radioactive material at this site.

6—Site Restoration

Task	Hazards	Hazard Control
rrounding the shallow excavation will be gently sloped to transition xisting grade to approximately 6- below grade. Deeper excavations e backfilled with material from on- he work area will be seeded after d sediment removal to reestablish tion. Site roads will be removed as sary. Erosion and sedimentation ls will be maintained to prevent osion into surrounding streams and e water bodies until vegetation is iently established.	***Chemical Hazards***—Contaminated source areas will have been removed, therefore, the risk level associated with these activities is low.	Use dust suppression as necessary during seeding and site restoration. Ap PPE will be utilized during these activities.
	Physical Hazards—Slip, trips, falls from construction debris, materials, tools, terrain or vegetation; uneven walking surfaces; weather hazards, such as severe weather and lightning; poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards sha removed or marked and barricaded. Sufficient illumination shall be mair ensure a safe working environment and weather conditions to be continu monitored. See FLD 11, 12, and 39.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work a kept organized and ice, snow and mud will be cleared from steps to redu hazards. See FLD 12.
	Striking and being struck by operating equipment, crushing, pinch points, and overhead hazards from use of heavy equipment.	Workers shall stay out of the swing area of all equipment and from unde personnel shall ride on the equipment unless seats are provided. See FLI 23, and 24. Workers exposed to traffic hazards will wear traffic/reflecto A traffic control system for positioning and moving haul vehicles will b established. Heavy vehicle operators may remain in their vehicles only i cab over protection. If operators must check loads, loading will cease un operator is back in the cabin or away from the vehicles in a safe location
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate careful handling equipment operations. Maintain safe distance from moving me parts. Always use appropriate PPE. See FLD 22.

6—Site Restoration (continued)

	Fire	Flammable liquids will be stored in safety containers and flammable stora cabinets. Propane cylinders will be stored outside in secured areas. Fuel s tanks will be placed in impermeable dikes. Properly rated fire extinguishe placed within 50 ft of the fuel storage area, in construction equipment, an strategically in the construction area.
	Noise during the operation of heavy equipment	A hearing conservation program consistent with FLD 01 will be establish noise areas will be identified. Hearing protection will be provided as appr The latest ACGIH TLVs will be used.
	Traffic	Work areas will be clearly barricaded and appropriate signs displayed. U vests as necessary. See FLD 20.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will b rated for intended use. Prior to any intrusive activity, authorities will be c for permits. Elevated parts of machinery, ladders, and antennas will be k 10 ft from overhead electric lines. Electrical Installations will be made by electricians. A lockout/tagout program consistent with FLD42 will be us equipment maintenance.
	Inclement weather, including rain, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel w high temperatures or direct sunlight shall follow FLD 05; personnel work temperatures or rain/snow shall follow FLD 06. Work will cease during
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of this appropriate measures as required. Adhere to WESTON Bloodborne Path Exposure Control Plan—First Aid Procedures FLD 43.
	Radiation—There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long perio

7—Demobilization

Task	Hazards	Hazard Control
uipment, materials, and personnel mporary facilities will be removed he site.	***Chemical Hazards***—Contaminated source areas will have been removed, therefore, the risk level associated with these activities is low.	Use dust suppression as necessary during seeding and site restoration. Ap PPE will be utilized during these activities.
	Physical Hazards—Slip, trips, falls from construction debris, materials, tools, terrain or vegetation; uneven walking surfaces; weather hazards, such as severe weather and lightning; poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shal removed or marked and barricaded. Sufficient illumination shall be main ensure a safe working environment and weather conditions to be continu monitored. See FLD 11, 12, and 39.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work a kept organized and ice, snow and mud will be cleared from steps to redu hazards. See FLD 12.
	Striking and being struck by operating equipment, crushing, pinch points, and overhead hazards from use of heavy equipment.	Workers shall stay out of the swing area of all equipment and from unde personnel shall ride on the equipment unless seats are provided. See FLI 23, and 24. Workers exposed to traffic hazards will wear traffic/reflecto A traffic control system for positioning and moving haul vehicles will b established. Heavy vehicle operators may remain in their vehicles only i cab over protection. If operators must check loads, loading will cease un operator is back in the cabin or away from the vehicles in a safe location
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Maintain safe distance from moving me parts. Always use appropriate PPE. See FLD 22.
	Fire	Flammable liquids will be stored in safety containers and flammable sto cabinets. Propane cylinders will be stored outside in secured areas. Fuel tanks will be placed in impermeable dikes. Properly rated fire extinguish placed within 50 ft of the fuel storage area, in construction equipment, a strategically in the construction area.

7—Demobilization (continued)

	Noise during the operation of heavy equipment	A hearing conservation program consistent with FLD 01 will be establish noise areas will be identified. Hearing protection will be provided as appr The latest ACGIH TLVs will be used.
	Traffic	Work areas will be clearly barricaded and appropriate signs displayed. U vests as necessary. See FLD 20.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will b rated for intended use. Prior to any intrusive activity, authorities will be c for permits. Elevated parts of machinery, ladders, and antennas will be k 10 ft from overhead electric lines. Electrical Installations will be made by electricians. A lockout/tagout program consistent with FLD 42 will be us equipment maintenance.
	Inclement weather, including rain, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel w high temperatures or direct sunlight shall follow FLD 05; personnel work temperatures or rain/snow shall follow FLD 06. Work will cease during
	Biological—Poisonous plants, insects, snakes.	Review recognition of poisonous plants, insects, or snakes typical of this appropriate measures as required. Adhere to WESTON Bloodborne Path Exposure Control Plan—First Aid Procedures FLD 43.
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	Radiation—There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long perio

Table 5-2

Equipment and Training Requirements

Task/Activity	Equipment	Inspection	Training
zation/Demobilization and reparation	Equipment to be brought by subcontractor. Also air monitoring equipment, and Level D/Modified Level D PPE.	The subcontractor shall be required to conduct daily inspections and necessary maintenance for the equipment. Follow WESTON Inspection requirements per WESTON Health & Safety Program.	Equipment will be operated by quali operators with 40-hr training with 8- refresher course. An initial site spec training will be conducted. Daily sa meetings will be conducted before beginning the work. Safe work prac and good housekeeping will be follo Personnel will be informed of the contaminants and chemicals at the s availability of MSDS.
ile & Soil and Sediment val	Heavy equipment such as loaders, excavators, and bulldozers, hand tools, air monitoring equipment, and Modified Level D PPE.	Heavy equipment inspected daily and maintained based on use. Pumps and monitoring equipment inspected and calibrated daily. PPE inspected for proper fit and chemical compatibility prior to use.	Equipment will be operated by qual operators with 40-hr training with 8 refresher course. An initial site spec training will be conducted. Daily sa meetings will be conducted before beginning the work. Safe work prac and good housekeeping will be foll Personnel will be informed of the contaminants and chemicals at the s availability of MSDS.
portation and Disposal	Off-road trucks, Excavators, Water trucks, decontamination equipment, air monitoring equipment, and Modified Level D PPE.	As above	As above

SECTION 6

ACTION LEVELS

6. ACTION LEVELS

As shown in Table 3-1, the surface soil and sediments at SEAD-5, 39, and 40 are contaminated with metals, some semi volatile organic compounds and total petroleum hydrocarbons. Air monitoring will be conducted during intrusive activities including excavation and direct loading of contaminated soils to evaluate potential chemical hazards, to determine effectiveness of control measures, and to evaluate the PPE requirements. Particulate (dust) and organic vapor monitoring will continue as necessary during excavation activities to verify worker exposure. Real-time air monitoring will be performed in previously identified contaminated areas during intrusive activities.

General action levels will be presented based on the primary contaminants of concern (i.e., metals, SVOCs, and TPH).

The action levels presented in Table 6-1 will be followed, using monitoring procedures as described in Section 7 of this SSHP. Action levels are based on particulate monitoring data detected in the immediate work area, at the perimeter of control zones and the overall site. In addition, visual and olfactory observation criteria consisting of petroleum/fuel odor in the breathing zone will be employed. Air monitoring will be performed around the perimeter of the excavation and loading area to detect possible migration of airborne contaminants. Action levels may be modified based on air monitoring and change in site conditions or activity.

Entering excavations greater than 5 ft deep are not anticipated to be performed as part of this scope of work. In the event this work is required, air monitoring for compliance and rescue provisions of 29 CFR1926.51(g) will be implemented in the event workers are required to enter any excavation greater than 5 ft deep where inadequate natural ventilation may be a factor (i.e., trench vs. open excavation). A combustible gas indicator (CGI) and oxygen (O_2) meter will be used as necessary for the intrusive activities.

6.1 PARTICULATE-BASED CONTAMINANTS

Particulate-based action levels for work at SEAD-5, 39, and 40 will fall under general construction.

Table 6-1
Action Levels for All Appropriate Tasks Using Direct-Reading Air Monitoring Instruments

Hazard	Instrument	Action Level
Organic vapors	Photoionization detector (PID)/Flame-ionization detection (FID)	0 to 5 units: Level D, continue monitoring and work activities. >5 units: Halt work, notify Program Safety Manager and CIH, re-evaluate conditions.
Particulates	MIE Personal Data RAM	Worker breathing zone :>2.5 milligrams per cubic meter (mg/m^3): Upgrade PPE to Level C.
Particulates Not Otherwise Classified (PNOC)		Site perimeter 100 microgram per cubic meter ($\mu g/m^3$) implement engineering controls.
General construction		150 $\mu g/m^3$ stop work reevaluate engineering controls.

General construction respiratory protection will be initiated at 2.5 mg/m^3 based upon WESTON's action level for PNOC, respirable fraction. Engineering controls will be utilized to limit exposure to less than the PNOC action level. Compliance monitoring for the overall jobsite will be conducted in accordance with NYSDEC's general Community Air Monitoring Plan (CAMP). The action notification level for CAMP compliance is based on 15-minute averages, which compare upwind and down wind concentrations of air born particulate in the PM-10 range (i.e., particulate that is less than 10 micrometers in size). Readings will be taken during initial activities and following any observed wind direction changes. One MIE Personal Data RAM will be used to collect both upwind and downwind samples when appropriate. When down wind readings reach 100 $\mu g/m^3$ above upwind readings implement engineering controls. Work may continue until down wind particulate concentrations reach or exceed 150 $\mu g/m^3$ greater than upwind concentrations, or visible dust is seen leaving the property. After engineering controls have been implemented and downwind readings reach or exceed 150 $\mu g/m^3$, stop work. Reevaluate dust suppression techniques and resume work if downwind particulate can be maintained below 150 $\mu g/m^3$ based of 15 minute averages. All readings must be recorded and available for state personnel (NYSDEC & NYSDOH) to review.

SECTION 7

AIR MONITORING

7. AIR MONITORING

Air monitoring will be conducted during site activities to evaluate potential chemical hazards to determine the effectiveness of control measures, and to evaluate the PPE requirements. Real-time air monitoring using direct reading instruments will be used to quantify the presence of airborne chemical hazards.

7.1 DIRECT READING INSTRUMENTS

Real-time monitoring using direct reading instruments will be conducted to identify potential exposure levels or immediately dangerous to life or health conditions.

In addition perimeter air monitoring will be conducted to assure that air born hazards are not exiting the overall work site in compliance with NYSDOH general CAMP and NYSDEC TAGM # 4031. Background readings will be taken in an area known or presumed to be clean.

Since the contaminants of concern at the site are primarily metals and SVOCs, continuous real-time monitoring for airborne particulates and organic vapors will be conducted using a Mini-Ram aerosol monitor and a PID (HNu with 11.7). If confined space entry activity is necessary, compliance monitoring of the confined space will be conducted for VOCs using a PID (Hnu with 10.2 or 11.7) or a FID (TVA-1000) or equivalent and a CGI/O_2 meter will be used to monitor explosive or oxygen-deficient or rich atmospheres.

SECTION 8

LEVELS OF PROTECTION

8. LEVELS OF PROTECTION

All personnel performing operations on-site shall be required to use the appropriate level of protection. The minimum level of protection required to begin each activity of this project is shown in Table 8-1. If hazards are identified requiring a lower or a higher level of protection, then this SSHP will be re-evaluated and upgraded or downgraded prior to re-entry to the site.

Table 8-1

Minimum Level of Protection Requirements

Activity	Level of Protection
Mobilization/Demobilization/Site Preparation	Level D or Modified Level D
Soil/Sediment Removal	Level D or Modified Level D
Transportation & Disposal	Level D or Modified Level D
Site Restorations	Level D or Modified Level D

8.1 LEVEL D PERSONAL PROTECTION EQUIPMENT

Level D PPE will be worn during site mobilization/demobilization and other non-intrusive activities where no known contamination is present. Level D PPE consists of:

- Work clothes, e.g., coveralls (cotton).
- Work gloves - leather or cotton as necessary for physical hazards.
- Boots, certified according to American National Standards Institute (ANSI).
- Safety glasses (as necessary).
- Hard hat (as necessary).

8.2 MODIFIED LEVEL D PERSONAL PROTECTION EQUIPMENT

Modified Level D PPE will be worn when conducting activities with known or potential contact with minimally contaminated materials. In addition to Level D components, Modified Level D consists of:

- Chemical resistant coveralls.
- Chemical resistant overboots or chemical boot covers.
- Gloves-nitrile or latex inner; chemical resistant outer.
- Eye protection-safety glasses or goggles.

8.3 LEVEL C PERSONAL PROTECTION EQUIPMENT

Level C PPE consists of:

- Innerboots certified according to ANSI or chemical resistant boots with toe protection certified according to ANSI.
- Chemical resistant coveralls.
- Chemical resistant overboots or chemical boot covers.
- Fullface air purifying respirator with filter (NIOSH/Mine Safety and Health Administration (MSHA) approved).
- Chemical-resistant gloves-nitrile or latex inner; and chemical resistant outer.

8.4 LEVEL B PERSONAL PROTECTION EQUIPMET

Level B PPE will be worn if appropriate action levels are reached during site activities. Level B PPE consists of:

- Innerboots certified according to ANSI or chemical resistant boots with toe protection certified according to ANSI.
- Chemical resistant coveralls.
- Self-contained breathing apparatus or air-line system (NIOSH/MSHA approved).
- Coveralls-cotton.
- Chemical resistant overboots.
- Chemical resistant gloves-nitrile or latex inner; and chemical resistant outer.

SECTION 9

EMERGENCY RESPONSE

9. EMERGENCY RESPONSE

9.1 EMERGENCY CONTACTS

The following emergency telephone numbers shall be prominently posted in WESTON's field office:

Service	Telephone Number
Emergency Service (Ambulance, fire, Police) Seneca County Sheriff's Dispatch	911
Ambulance(non-emergency) South Seneca Ambulance service	(607) 869-5313
Seneca County Police – (non-emergency)	(315) 539-9241
Romulus Fire Department – (non-emergency)	(607) 869-9611
Spill Response- CHEMTREC	(800) 424-9300
U.S. Environmental Protection Agency Region 2 Emergency Response	(212) 264-024248
Hospital: Geneva General Hospital 196 North Street Geneva, New York 14456	(315) 787-4000
Poison Control Center (New York)	(800) 962-1253
WESTON Medical Emergency (Continuum)	(800) 229-3674
WESTON Emergency (24 hour) (West Chester)	(610) 692-3000
Site Manager- Miles Gelatt (cell)	(603) 540-0140
SHSC/ERC- TBD	(0)
WESTON CIH George Crawford (pager)	(800) 206-1507
WESTON PM- Guy Johnstone	(732) 417-5873
Rapid Design Manager - Tom Westenburg	(402) 880-7329
SEDA BRAC Coordinator- Steve Absolom	(607) 869-1309
CENAN PM- Randy Battaglia	(607) 869-1523
CENAN PE- Tom Battaglia	(607) 869-1353

In the event of an emergency requiring outside emergency services, WESTON personnel will immediately dial 911 to contact the appropriate organization. Following the phone call, WESTON personnel will contact on-site USACE on-site personnel to inform them that emergency service personnel and equipment will be entering the facility. Subsequent to these notifications, appropriate off-site personnel of the USACE and WESTON will be contacted and informed about the situation. The Emergency Response Contingency Plan is contained in Appendix B.

9.2 HOSPITAL ROUTE

A map showing the route to the hospital will be posted near the site telephone and will be posted in each site vehicle. The hospital route will be field verified prior to work initiation. Since the access routes and/or gates to the site have not been verified, the hospital route will be finalized during mobilization and submitted as an amendment to the plan. A written description of the directions to the hospital facility will be attached to the figure.

APPENDIX A

SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM

SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM-FORM 28

Location-Specific Hazard Communication Program/Checklist

To ensure an understanding of and compliance with the Hazard Communication Standard, WESTON will use this checklist/document (or similar document) in conjunction with the WESTON Written Hazard Communication Program as a means of meeting site- or location-specific requirements.

While responsibility for activities within this document reference the WESTON Safety Officer (SO), it is the responsibility of all personnel to effect compliance. Responsibilities under various conditions can be found within the WESTON Written Hazard Communication Program.

To ensure that information about the dangers of all hazardous chemicals used by WESTON are known by all affected employees, the following Hazard Communication Program has been established. All affected personnel will participate in the Hazard Communication Program. This written program, as well as

WESTON's Corporate Hazard Communication Program, will be available for review by any employee, employee representative, representative of OSHA, NIOSH, or any affected employer/employee on a multi-employer site.

☐ Site or other location name/address: Seneca Army Depot (Time Critical Removal Action at Industrial Waste Site) Romulus, New York

☐ Site/Project/Location Manager: Guy Johnstone, Project Manager

☐ Site/Location Safety Officer: TBD, SSH0 Miles Gelatt, Site Manager

☐ List of chemicals compiled, format: ☒ HASP ☐ Other: _____

☐ Location of MSDS files: On-Site Binder

☐ Training conducted by: Name: _____ Date: _____

☐ Indicate format of training documentation: ☒ Field Log: ☐ Other: _____

☐ Client briefing conducted regarding hazard communication: _____

☐ If multi-employer site (client, subcontractor, agency, etc.), indicate name of affected companies:

USACE, Client

☐ Other employer(s) notified of chemicals, labeling, and MSDS information: _____

☐ Has WESTON been notified of other employer's or client's hazard communication program(s), as necessary? ☒ Yes ☐ No

List of Hazardous Chemicals

A list of known hazardous chemicals used by WESTON personnel must be prepared and attached to this document or placed in a centrally identified location with the MSDSs. Further information on each chemical may be obtained by reviewing the appropriate MSDS. The list will be arranged to enable cross-reference with the MSDS file and the label on the container. The SO or Location Manager is responsible for ensuring the chemical listing remains up-to-date.

Container Labeling

The WESTON SO will verify that all containers received from the chemical manufacturer, importer, or distributor for use on-site are clearly labeled.

The SO is responsible for ensuring that labels are placed where required and for comparing MSDSs and other information with label information to ensure correctness.

Material Safety Data Sheets (MSDSs) FORM 28

The SO is responsible for establishing and monitoring WESTON's MSDS program for the location. The SO will ensure that procedures are developed to obtain the necessary MSDSs and will review incoming MSDSs for new or significant health and safety information. He/she will see that any new information is passed on to the affected employees. If an MSDS is not received at the time of initial shipment, the SO will call the manufacturer and have an MSDS delivered for that product in accordance with the requirements of WESTON's Written Hazard Communication Program.

A log for, and copies of, MSDSs for all hazardous chemicals in use will be kept in the MSDS folder at a location known to all site workers. MSDSs will be readily available to all employees during each work shift. If an MSDS is not available, immediately contact the WESTON SO or the designated alternate. When a revised MSDS is received, the SO will immediately replace the old MSDS.

Employee Training and Information

The SO is responsible for the WESTON site-specific personnel training program. The SO will ensure that all program elements specified below are supplied to all affected employees.

At the time of initial assignment for employees to the work site, or whenever a new hazard is introduced into the work area, employees will attend a health and safety meeting or briefing that includes the information indicated below.

- Hazardous chemicals present at the work site.
- Physical and health risks of the hazardous chemicals.
- The signs and symptoms of overexposure.
- Procedures to follow if employees are overexposed to hazardous chemicals.
- Location of the MSDS file and Written Hazard Communication Program.
- How to determine the presence or release of hazardous chemicals in the employee's work area.
- How to read labels and review MSDSs to obtain hazard information.
- Steps WESTON has taken to reduce or prevent exposure to hazardous chemicals.
- How to reduce or prevent exposure to hazardous chemicals through the use of controls procedures, work practices, and personal protective equipment.
- Hazardous, nonroutine tasks to be performed (if any).
- Chemicals within unlabeled piping (if any).

Hazardous Nonroutine Tasks

When employees are required to perform hazardous nonroutine tasks, the affected employee(s) will be given information by the SO about the hazardous chemicals he or she may use during such activity. This information will include specific chemical hazards, protective and safety measures the employee can use, and steps WESTON is using to reduce the hazards. These steps include, but are not limited to, ventilation, respirators, presence of another employee, and emergency procedures.

Chemicals in Unlabeled Pipes

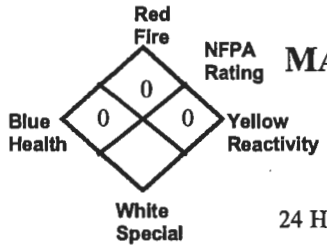
Work activities may be performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee will contact the SO, at which time information as to the chemical(s) in the pipes, potential hazards of the chemicals or the process involved, and the safety precautions that should be taken will be determined and presented.

Multi-Employer Work Sites

It is the responsibility of the SO to provide other employers with information about hazardous chemicals imported by WESTON to which their employees may be exposed, along with suggested safety precautions. It is also the responsibility of the SO and the Site Manager to obtain information about hazardous chemicals used by other employers to which WESTON employees may be exposed. WESTON's chemical listing will be made available to other employers, as requested. MSDSs will be available for viewing, as necessary. The location, format, and/or procedures for accessing MSDS information must be relayed to affected employees.

Revised 02/1998

Alconox ®



MATERIAL SAFETY DATA SHEET

Alconox, Inc.
30 Glenn Street
White Plains, NY 10603

24 Hour Emergency Number – Chem-Tel (800) 255-3924

I. IDENTIFICATION

Product Name (as appears on label)	ALCONOX
CAS Registry Number:	Not Applicable
Effective Date:	January 1, 2001
Chemical Family:	Anionic Powdered Detergent
Manufacturer Catalog Numbers for sizes	1104, 1125, 1150, 1101, 1103 and 1112

II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

There are no hazardous ingredients in ALCONOX as defined by the OSHA Standard and Hazardous Substance List 29 CFR 1910 Subpart Z.

III. PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (F):	Not Applicable
Vapor Pressure (mm Hg):	Not Applicable
Vapor Density (AIR=1):	Not Applicable
Specific Gravity (Water=1):	Not Applicable
Melting Point:	Not Applicable
Evaporation Rate (Butyl Acetate=1):	Not Applicable
Solubility in Water:	Appreciable-Soluble to 10% at ambient conditions
Appearance:	White powder interspersed with cream colored flakes.
pH:	9.5 (1%)

IV. FIRE AND EXPLOSION DATA

Flash Point (Method Used):	None
Flammable Limits:	LEL: No Data UEL: No Data
Extinguishing Media:	Water, dry chemical, CO_2, foam
Special Fire fighting Procedures:	Self-contained positive pressure breathing apparatus and protective clothing should be worn when fighting fires involving chemicals.
Unusual Fire and Explosion Hazards:	None

V. REACTIVITY DATA

Stability:	Stable
Hazardous Polymerization:	Will not occur
Incompatibility (Materials to Avoid):	None
Hazardous Decomposition or Byproducts:	May release CO_2 on burning

VI. HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation? Yes Skin? No Ingestion? Yes
Health Hazards (Acute and Chronic):	Inhalation of powder may prove locally irritating to mucous membranes. Ingestion may cause discomfort and/or diarrhea. Eye contact may prove irritating.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No
Signs and Symptoms of Exposure:	Exposure may irritate mucous membranes. May cause sneezing.
Medical Conditions Generally Aggravated by Exposure:	Not established. Unnecessary exposure to this product or any industrial chemical should be avoided. Respiratory conditions may be aggravated by powder.
Emergency and First Aid Procedures:	Eyes: Immediately flush eyes with water for at least 15 minutes. Call a physician. Skin: Flush with plenty of water. Ingestion: Drink large quantities of water or milk. Do not induce vomiting. If vomiting occurs administer fluids. See a physician for discomfort.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken if Material is Released or Spilled:	Material foams profusely. Recover as much as possible and flush remainder to sewer. Material is biodegradable.
Waste Disposal Method:	Small quantities may be disposed of in sewer. Large quantities should be disposed of in accordance with local ordinances for detergent products.
Precautions to be Taken in Storing and Handling:	Material should be stored in a dry area to prevent caking.
Other Precautions:	No special requirements other than the good industrial hygiene and safety practices employed with any industrial chemical.

VIII. CONTROL MEASURES

Respiratory Protection (Specify Type):	Dust mask - Recommended
Ventilation:	Local Exhaust-Normal Special-Not Required Mechanical-Not Required Other-Not Required
Protective Gloves:	Impervious gloves are useful but not required.
Eye Protection:	Goggles are recommended when handling solutions.
Other Protective Clothing or Equipment:	None
Work/Hygienic Practices:	No special practices required

MSDS
Definition of terms

Material Safety Data Sheet for #2 Diesel

1. Chemical Product

MSDS Number: U7770

MSDS Date: 01-31-99

Product Name: #2 Diesel Fuel

24 Hour Emergency Phone: (210) 979-8346
Transportation Emergencies: Call Chemtrec at 1-800-424-9300
MSDS Assistance: (210) 592-4593

Distributors Name and Address:

T.W. Brown Oil Co., Inc.
1857 Knoll Drive
Ventura, California 93003

Chemical Name:#2 Diesel Fuel **Cas Number:** 68476-34-6

Synonyms/Common Names: This Material Safety Data Sheet applies to the following product descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product, and are not reflected in this document. Consult specification sheets for technical information.

California Air Resources Board (Carb) Diesel Fuel- On-road, Off-Road, Tax Exempt blends
Premium Diesel Fuel- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Distillate- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Diesel Fuel- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Fuel Oil- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends

2. Composition, Information On Ingredients

Product Use: This product is intended for use as a fuel in engines and heaters designed for diesel fuels, and for use in engineered processes. Use in other applicatiions may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

Description: #2 Diesel is a complex mixture of hydrocarbons from a variety of chemical processes blended to meet standardized product specifications. Composition varies greatly and includes C9 to C20 hydrocarbons with a boiling range of about 325-675 degrees F. The following is a non-exhaustive list of common components, typical percentage ranges in product, and occupational exposure limits for each.

Component or Material Name	%	CAS Number	ACGIH Limits TLV -- STEL -- Units	OSHA Exposure Limits PEL -- STEL -- C/P -- Units
Cat cracked distillate, light	0-100	64741-59-9	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Hydrotreated distillate, middle	0-100	64742-46-7	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Hydrotreated distillate, light	0-100	64742-47-8	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Gas oil, light	0-100	64741-44-2	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A

3. Hazards Identification

Health Hazard Data:

1. The major effect of exposure to this product is giddiness, headache, central nervous system depression; possible irritation of eyes, nose, and lungs; and dermal irritation. Signs of kidney and liver damage may be delayed. Pulmonary irritation secondary to exhalation fo solvent.

2. NIOSH recommends that whole diesel engine exhaust be regarded as a potential occupational carcinogen. Follow OSHA and NSHA rules where diesel engine exhaust fumes may be generated.

3. A life time skin painting study by the American Petroleum Institute has shown that similar naphtha products with a boiling range of 350-700 degrees F usually produce skin tumors and/ or skin cancers in laboratory mice. Only a weak to moderate response occurred. The effect to humans has not been determined.

4. Positive results at 2.0 ml/kg and 6.0 ml/kg noted in mutagenesis studies via in-vivo bone marrow cytogenetics assay in rats.

5. Kerosene is classified as a severe skin irritant. Mutation data has been reported for kerosene products. Hydrotreated kerosene is listed as being probably carcinogenic to humans with limited evidence in humans and sufficient evidence in experimental animals.

Hazards of Combustion Products: Carbon monoxide and carbon dioxide can be found in the combustion products of this product and other forms of hydrocarbon combustion. Carbon monoxide in moderate concentrations can cause symptoms of headache, nausea, vomiting, increased cardiac output, and confusion. Exposure to higher concentrations of carbon monoxide can cause loss of consciousness, heart damage, brain damage, and/or death. Exposure to high concentrations of carbon dioxide can cause simple asphyxiation by displacing available oxygen. Combustion of this and other similar materials should only be carried out in well ventilated areas.

Material Data Safety Sheet (MSDS): NITRIC ACID

Product Identification	7. Handling and Storage
2. Composition	8. Exposure Controls/Personal Protection
3. Hazards Identification	9. Physical and Chemical Properties
4. First Aid Measures	10. Stability and Reactivity
5. Fire Fighting Measures	11. Toxicological Information
6. Accidental Release Measures	12. Ecological Information
	13. Disposal Considerations
	16. Other Information

Note: This information sheet has been re-formatted for better clarity by the Department of Earth Sciences. Some of the data such as information on shipping and weapons treaties were intentionally left out. If you want to look at the complete MSDS, you can either check one of the hardcopy versions in the Department, contact the manufacturer, or check one of the various Web-based databases such as those compiled by BU's Office of Environmental Health & Safety (www.bu.edu/ehs/msds/index.htm).

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1. Product Identification

MSDS Name: **Nitric Acid**, Reagent ACS

Synonyms: Azotic Acid, Engravers Nitrate, Hydrogen Nitrate.

Company Identification: Acros Organics N.V.
One Reagent Lane
Fairlawn, NJ 07410
For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

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2. Composition/Information on Ingredients

CAS#	Chemical Name	%	EINECS#
7697-37-2	Nitric acid	69-71%	231-714-2
32-18-5	Water	Balance	231-791-2

Hazard Symbols: O C
Risk Phrases: 35 8

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3. Hazards Identification

EMERGENCY OVERVIEW
Appearance: clear colorless to pale yellow.
Danger! Strong oxidizer. Contact with other material may cause a fire. Corrosive. Causes eye and skin burns. Causes digestive and respiratory tract burns. May be fatal if inhaled. Target Organs: None.

Potential Health Effects

Eye:
Causes severe eye burns. May cause irreversible eye injury.

Skin:
May cause severe skin irritation. Causes skin burns. May cause deep, penetrating ulcers of the skin.

Ingestion:
Causes gastrointestinal tract burns. May cause perforation of the digestive tract.

Inhalation:
May be fatal if inhaled. Effects may be delayed. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Chronic:
Repeated inhalation may cause chronic bronchitis. Repeated exposure may cause erosion of teeth.

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4. First Aid Measures

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.
Skin:
Get medical aid immediately. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting and seek IMMEDIATE MEDICAL ADVICE.
Inhalation:
Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. DO NOT use mouth-to-mouth respiration.
Notes to Physician:

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5. Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with combustible materials may cause a fire. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Containers may explode in the heat of a fire.
Extinguishing Media:
Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water. For small fires, use dry chemical, carbon dioxide, sand, earth, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

Autoignition Temperature: Not available.
Flash Point: Not available.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.

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6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Wear a self contained breathing apparatus and appropriate Personal protection. (See Exposure Controls, Personal Protection section). Neutralize spill with sodium bicarbonate. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Use a spark-proof tool.

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7. Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale.

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area.

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8. Exposure Controls/Personal Protection

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Nitric acid	2 ppm ; 5.2 mg/m3; 4 ppm STEL; 10 mg/m3 STEL	2 ppm TWA; 5 mg/m3 TWA 25 ppm IDLH	2 ppm TWA; 5 mg/m3 TWA

OSHA Vacated PELs:
Nitric acid: 2 ppm TWA; 5 mg/m3 TWA

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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9 Physical and Chemical Properties (Nitric Acid)

Appearance:	clear colorless to pale yellow liquid
Odor:	strong odor, acrid odor
Solubility:	Soluble in water
Density/Spec. Grav:	1.50
pH:	1.0
% Volatiles by volume @ 21C (70F):	Not available
Boiling Point:	72 deg C
Melting Point:	-42 deg C
Vapor Density (Air=1):	Not available
Vapor Pressure (mm Hg):	6.8 mm Hg
Evaporation Rate (Butyl cetate=1):	Not available
Viscosity:	Not available

Molecular Formula: HNO3
Molecular Weight: 63.0119

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10. Stability and Reactivity

Chemical Stability: Decomposes when in contact with air, light, or organic matter.

Conditions to Avoid: High temperatures, incompatible materials, moisture, reducing agents.

Incompatibilities with Other Materials: Reacts with over 150 chemical combinations. Refer to NFPA Fire Protection Guide for specifics. Reacts explosively with organic materials and combustibles.

Hazardous Decomposition Products: Nitrogen oxides.

zardous Polymerization: Has not been reported.

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11. Toxicological Information

RTECS#:
CAS# 7697-37-2: QU5775000 QU5900000
CAS# 7732-18-5: ZC0110000

LD50/LC50:
CAS# 7697-37-2: Inhalation, rat: LC50 =67 ppm(NO2)/4H.
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.

Carcinogenicity:
Nitric acid -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
Effects on newborn: biochemical and metabolic, Oral-rat TDLo=2345 mg/kg (female 18D post). Fetotoxicity: Stunted fetus, Oral-rat TDLo=21150 mg/kg (female 1-21D post).
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
information available.
Other Studies:
None.

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12. Ecological Information

Ecotoxicity:
Mosquito fish: TLm=72 ppm/96H (fresh water) Cockle: LC50=330-1000 ppm/48H (salt water)
Environmental Fate:
No information reported.
Physical/Chemical:
No information available.
Other:
None.

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13. Disposal Considerations

RCRA D-Series Maximum Concentration of Contaminants: None listed.
RCRA D-Series Chronic Toxicity Reference Levels: None listed.
RCRA F-Series: None listed.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

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16. Other Information

MSDS Creation Date: 2/01/1996 Revision #4 Date: 12/16/1997

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

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Material Data Safety Sheet (MSDS): Acetone

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Product Identification

ACETONE

MSDS Number: A0446 --- Effective Date: 04/09/98

Synonyms: Dimethylketone; 2-propanone; dimethylketal
CAS No.: 67-64-1
Molecular Weight: 58.08
Chemical Formula: (CH3)2CO

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2. Composition/Information on Ingredients

Ingredient	CAS #	Percent	Hazardous?
Acetone	67-64-1	99-100%	Yes

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3. Hazards Identification

Emergency Overview

ANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:
Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:
Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:
Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure:
Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:
Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical

attention.
Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call hysician immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

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5. Fire Fighting Measures

Fire:
Flash point: -20C (-4F) CC
Autoignition temperature: 465C (869F)
Flammable limits in air % by volume: lel: 2.5; uel: 12.8
Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can w along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause ire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.

Fire Extinguishing Media:
Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect iid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and piace in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number

for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB(tm) solvent adsorbent is recommended for spills of this product.

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7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL): 1000 ppm (TWA)
^ CGIH Threshold Limit Value (TLV): 500 ppm (TWA), 750 ppm (STEL) A4 - not classifiable as a human
cinogen
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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Appearance:	Clear, colorless, volatile liquid.
Odor:	Fragrant, mint-like
›lubility:	Miscible in all proportions in water.
Density:	0.79 @ 20C/4C
pH:	No information found.
% Volatiles by volume @ 21C (70F):	100%
Boiling Point:	56.5C (133F) @ 760 mm Hg
Melting Point:	-95C (-139F)
Vapor Density (Air=1):	2.0
Vapor Pressure (mm Hg):	400 @ 39.5C (104F)
Evaporation Rate (n-Butyl Acetate=1):	7.7

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

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11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

	NTP Carcinogen		
Ingredient	**Known**	**Anticipated**	**IARC Category**
Acetone (67-64-1)	No	No	None

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12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.
Environmental Toxicity:
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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16. Other Information

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0
Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Label First Aid:

occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash thing before reuse. In all cases, get medical attention.

Product Use:
Laboratory Reagent.

Revision Information:
MSDS Section(s) changed since last revision of document include: 8.

Disclaimer:
****

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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

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APPENDIX B

EMERGENCY RESPONSE CONTINGENCY PLAN

FINAL
EMERGENCY RESPONSE AND CONTINGENCY PLAN
SENECA ARMY DEPOT ACTIVITY
INDUSTRIAL WASTE SITE (SLUDGE PILES) – SEAD-5
AND VOC SITES – SEAD'S 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0069 & 0034

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Castle Hall Building No. 525,
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Prepared by:

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Manchester, New Hampshire 03101-1501

July 2003

W.O. No. 20074.515.069 and .034

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ATTACHMENT 4 SITE-SPECIFIC SPILLS OR RESPONSE ACTIONS

ATTACHMENT 5 SITE PLAN, EVACUATION ROUTES, AND EQUIPMENT LOCATIONS

LIST OF ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
ERC	Emergency Response Coordinator
ERCP	Emergency Response and Contingency Plan
ERTs	Emergency Response Teams
EZ	Exclusive Zone
HAZWOPER	Hazardous Waste Operations
LEPC	Local Emergency Planning Commission
MSDS	Material Safety Data Sheets
NRC	National Response Center
OSHA	Occupational Safety and Health Administration
ppm	parts per million
PSM	Program Safety Manager
RCRA	Resource Conservation and Recovery Act
RQ	reportable quantity
RSO	Regional Safety Officer
SERC	State Emergency Response Commission
SHSC	Site Health and Safety Coordinator
SSHO	Site Safety and Health Officer
TPQ	threshold planning quantity
TSCA	Toxic Substance Control Act
$WESTON_{SM}$	Weston Solutions, Inc.

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Emergency Response and Contingency Plan (ERCP) has been prepared by Weston Solutions, Inc. (WESTON$_{SM}$) to describe actions that will be taken by WESTON site personnel in the event of an emergency situation.

The purpose of this plan is to:

- Anticipate events to ensure proper planning and preparation.
- Act as a guide in the event of an emergency situation.
- Minimize hazards to human health and the environment from anticipated emergency events.
- Familiarize response personnel with equipment and procedures.

This plan is determined to comply with the requirements of Occupational Safety and Health Administration (OSHA) [including emergency action planning, Process Safety Management (PSM) and HazWoper], Department of Transportation (reporting and response actions), and U.S. Environmental Protection Agency (EPA) [including Spill Prevention, Containment, Countermeasure, Resource Conservation and Recovery Act (RCRA) and Risk Management Plan].

SECTION 2

PRE-EMERGENCY PLANNING

2. PRE-EMERGENCY PLANNING

In order to handle emergencies properly and effectively, planning and training is essential. Pre-emergency planning procedures must be in place to immediately respond to emergency situations. Site personnel must be knowledgeable of their roles and responsibilities and act within their abilities and training. Weston Solutions, Inc. will prohibit its employees from responding to emergency situations that would require them to be exposed to hazards beyond their degree of training. As necessary (by regulation) and prior to site activities, the Site Safety and Health Officer (SSHO) or project staff will communicate with outside response agencies (e.g., fire, police, ambulance, and medical) to coordinate response efforts. Contacts with each response agency will be informed of any changing site conditions that may affect emergency response. Copies of this ERCP will be made available to any agency [e.g., police, fire, hospital, State Emergency Response Commission (SERC), and Local Emergency Planning Commission (LEPC)] required to hold a copy. Should any of these listed agencies choose not to receive a copy or refuse to assist in the event of an emergency those names and contacts will be documented in Attachment 4. A complete list of emergency contacts can be found in Attachment 1.

SECTION 3

ROLES AND RESPONSIBLILITIES

3. ROLES AND RESPONSIBILITIES

The Site Health and Safety Coordinator (SHSC) aka SSHO will be the primary Emergency Response Coordinator (ERC) or Incident Commander as termed through Uniform Incident Command. The SHSC or designated alternate will contact the appropriate personnel or authorities as determined by the type and nature of incident. Attachment 1 lists emergency contacts and serves as documentation of this site-specific chain-of-command. Attachment 3 includes checklists for use during emergency incidents.

This chain-of-command is established to minimize confusion and to leave no doubt as to whom has decision-making authority in the event of an emergency situation.

3.1 EMERGENCY RESPONSE COORDINATOR ROLE

The ERC responsibilities during emergency situations are as follows:

- Evaluate emergency situation and special needs.
- Direct all emergency efforts, including evacuation of personnel and assignment of personnel to response roles.
- Notify and interact with emergency response agencies.
- Oversee medical and decontamination procedures.
- Serve as the point of contact for local fire department(s) and/or hazardous material team(s).

The ERC responsibilities after the emergency phase is complete includes:

- Supervise cleanup efforts; ensure proper recovery, disposal and accounting of any hazardous material/waste.
- Ensure all emergency equipment and supplies are cleaned and/or made available for future use.
- Document incident, advise management, and initiate debriefing.

The ERC will delegate, as necessary, specific roles and duties outlined above.

3.2 ALTERNATE EMERGENCY RESPONSE COORDINATOR ROLE

- The Site Manager is the primary backup to the ERC.

3.3 REGIONAL SAFETY MANAGER ROLE

- Provide technical assistance and lead post-event investigations.

3.4 REGIONAL SAFETY OFFICER ROLE

- Receive reports from the ERC.
- Provide information to appropriate management and track reports.
- Workers compensation liaison.
- Focal point for medical return to work.
- Incident investigation as necessary.

3.5 PROJECT MANAGER ROLE

- Assure funding as necessary for emergency operations.
- Report and interact with regulatory agencies and client as necessary.
- Media Contact * (note that all media contacts will be governed by applicable contract provisions. Weston Solutions Inc. Marketing Department will be consulted in the event of a media contract or as necessary).

3.6 EMERGENCY RESPONSE TEAMS

Emergency Response Teams (ERT) will be comprised of all personnel on-site, cross-trained to actions necessary (e.g., spills, confined space rescue). Attachments 1 and 4 indicate roles and responsibilities for this site.

SECTION 4

EMERGENCY RECOGNITION, PREVENTION, AND TRAINING

4. EMERGENCY RECOGNITION, PREVENTION, AND TRAINING

All WESTON personnel will be instructed on a daily basis to be constantly alert for potentially hazardous situations or conditions. Immediate recognition with necessary corrective actions of potential hazardous conditions can avert an emergency. Emergency response discussions will be incorporated into regular safety meetings and will include such topics as:

- Tasks to be performed.
- Hazards that may be encountered, along with their effects and how to recognize symptoms.
- Emergency procedures, including evacuation.

Training required to be given (initially and periodically) to all site workers includes the following:

- Site topography, site layout and prevailing weather conditions.
- Procedures for reporting incidents.
- Roles and procedures in the event response may include local, state or federal responders.
- Alarm systems and all applicable aspects of this ERCP.

4.1 IF SITE IS REGULATED UNDER 29 CFR 1910.120 (HAZWOPER)

In addition to the above requirements, all WESTON site personnel shall have a minimum of the following safety training:

- 40-hour Hazardous Waste Operations (HAZWOPER).
- 8-hour Annual Refresher Course.
- Site-specific Training.
- At least (1) member of the WESTON team shall have First Aid/Cardiopulmonary Resuscitation (CPR) training.
- At least (1) member (SSHO) shall have 8-hour SHSC Training.

4.2 IF SITE IS NON-HAZWOPER

In addition to the above requirements, all WESTON personnel shall have a minimum of the following safety training:

- Hazard Communication Training
- Site Specific Training.
- At least one person shall have First Aid/CPR training.

SECTION 5

COMMUNICATION

5. COMMUNICATION

Daily environmental health and safety briefings will be used to remind personnel of their roles, responsibilities, and emergency procedures. A record of the safety briefings will be completed and maintained on-site.

Emergency communications will be voice, audible horn/alarm, or site telephone. See Attachment 2 for site-specific requirements. Emergency telephone numbers will be kept in the site office. Personnel will be instructed to immediately contact the SHSC or Site Manager if an emergency situation arises.

A backup emergency notification system will also be used during all site activities (e.g., air horns located at each work location). In the case of an emergency the signal for personnel to evacuate the area will be a series of long blasts. The assembly/gathering point for individual work locations will be provided during the daily safety briefing. After a head count has been taken further evacuation may be required based on wind direction and weather conditions. Five short blasts of the air horn will signal all clear, workers may than return to designated work areas.

Each type of communication will be tested to insure that site personnel can identify the signals above background noise, as well as to check for system efficacy and accuracy. In the event that air horns prove to be inefficient, alternative methods (e.g., 2-Way Radios) will be implemented and tested to prove efficient use.

In the event of an emergency requiring outside assistance the ERC or designated alternate will contact outside help using the nearest telephone or other pre-established means.

SECTION 6

SUPPORT AREAS,EVACUATION PROCEDURES, AND PERSONNEL ACCOUNTING

6. SUPPORT AREAS, EVACUATION PROCEDURES, AND PERSONNEL ACCOUNTING

The primary support area for all work at the site will be the site office.

In the event of a severe fire or chemical release, the Seneca Army Depot may have to be evacuated. The evacuation signal will be a series of three long blasts from an air horn and will be initiated by the SSHO. Workers will be instructed to check the wind direction, and leave the site by the shortest route preferably upwind or cross-wind and without crossing any plume or smoke cloud. A safe meeting area will be designated during the daily safety meeting, where workers will assemble and check in with the SSHO. The location of the assembly area will vary daily based on the work locations. The assembly zone location will be addressed each day at the daily safety briefing. The SSHO will check off the workers using the sign-in sheet to confirm all personnel have evacuated.

Based on the type of emergency, the proper federal, state, and local authorities will be notified, as described in the sections above, immediately upon evacuation of the site. In the event of a serious emergency, evacuation of the local community will be the responsibility of the local authorities. The SSHO will meet with state and local emergency responders upon their arrival, update the status of the situation, and help to coordinate community evacuation activities as appropriate.

SECTION 7

EMERGENCY PROCEDURES

7. EMERGENCY PROCEDURES

7.1 GENERAL

During an emergency, the following actions will be taken, with some actions conducted concurrently. No one will attempt an emergency response/rescue until the situation has been assessed and the appropriate response outlined by the ERC or local responders.

It will be determined prior to work initiation, whether any tasks on site are critical operations requiring one or more persons to shut down sensitive equipment in a time-critical manner. If it is determined that critical operations are evident, specific procedures will be outlined in Attachment 4.

General guidelines for rescue/response include the following:

- **Assessment:** Assess the type and extent of the emergency, then determine and verify existing and potential hazards to site personnel and the off-site population. Determine, based on the type and extent of the emergency, the following:

  - Whether and how to respond
  - The extent of any injuries and/or damage
  - The need for evacuation of site personnel and off-site population
  - The resources needed for evacuation and response

- **Evacuate:**

  - Move site personnel to a safe distance upwind of the incident.
  - Monitor the incident for significant changes. The hazards may diminish, permitting personnel to re-enter the site, or hazards may increase and require public evacuation.

***Note**: Should site personnel or visitors be handicapped to the point of needing assistance during an evacuation, the ERC will ensure that appropriate numbers of site workers are trained to provide any needed assistance.*

***Note**: Work sites with potential hazards that could involve adverse community risk, and require evacuation of the local community must be discussed and coordinated with the client and local fire and police agencies before fieldwork begins.*

- **Enforcing the buddy system:** Allow no one (including rescuers) to enter a contaminated area or hazardous area without a partner or without appropriate communications means and proper personal protective equipment (PPE). At the time of the incident, one person will be designated to record the names, time of entry, and time of exit for all personnel entering the Exclusive Zone (EZ). At all times, personnel in the EZ should be in line-of-sight or communications contact with the ERC or his designee.

- **Survey casualties:**

  - Locate all victims and assess their condition.
  - Determine resources needed for stabilization and transport.

- **Request aid:** Contact the required off-site/on-site personnel or agencies (such as the ambulance, fire department, police, etc). Ensure that previous communications and understanding or response actions to be conducted by the off-site resources have been accomplished. In certain cases (e.g., confined space rescue) the off-site responder(s) must be brought to the site before work is initiated so that an evaluation of and training on the confined spaces is accomplished.

- **Allocate resources:** Allocate appropriately qualified on-site personnel and equipment to the rescue and initiate incident response operations.

- **Remove or assist victims from the area**, using appropriate equipment and procedures.

- **Control measures, including containment:** Assist in bringing the hazardous situation under complete or temporary controls and use measures to prevent any escalation of the emergency.

- **Decontaminate:** Use established procedures to decontaminate personnel in the decontamination area. If the emergency makes this area unsafe, establish a new decontamination area at an appropriate distance. Decontaminate victims before or after stabilization as their medical condition indicates. Decontamination may be delayed if the injuries suffered by the victim pose an immediate threat to the victim's life or health. Instead, the victim should be placed on a tarp, sheet of plastic or non-absorbent backboard to allow handling of the victim without the threat of contaminating support personnel until the victim is stabilized.

- **Stabilize:** Administer any medical procedures that are necessary before the victim can be moved. Stabilize or permanently remediate the hazardous condition. Address the cause of the emergency and anything that was damaged or endangered by the emergency (e.g., drums, and tanks).

- **Transport:** No one will be transported without being decontaminated or protected from contaminating others. Measures will be taken to minimize chemical contamination of the transport vehicle, ambulance, and hospital personnel.

- **Casualty Logging:** Record the names(s) of the victim(s), the time, the destination, and their condition upon transport.
- **Casualty tracking:** Record the disposition, condition, and location of the casualties.
- **Media Reporting:** Media contacts should be named (see Attachment A) and utilized whenever contact with reporters is necessary. The Site Manager will be the immediate media contact. The Project Manager (PM) is listed as the media contact for most sites.

7.2 SECURITY ISSUES

Both routine and emergency response actions dictate the need for prevention of unauthorized access and for the protection of vital records and equipment. Site size, location, political or social environment, and equipment needs are criteria necessary to evaluate whether security (private or public) is needed.

- Local Police Departments should be notified of site activities conducted, personnel on site, site hazards and risks, and regulatory issues before work begins. Notifications will assist in coordination of efforts should police present be required.

In the event of unauthorized access, personnel should avoid confrontation (verbal or physical). Attempts must be made to explain site hazards, and Corporate and client expectations for a safe worksite. Continued presence by unauthorized persons will require a team member to notify the local police force. Site activities may need to be halted in the event unauthorized persons create an adverse risk to themselves, to WESTON personnel or to subcontractor personnel.

7.3 SEVERE WEATHER/NATURAL DISASTERS

In the event of adverse weather conditions occurring on-site such as lightning, high winds, tornado, hurricane or extreme heat the SHSC will instruct the workers to discontinue or modify field operations. These natural phenomena complicate work activities and add or increase risk to all site personnel. The following actions should be evaluated or taken in the event of severe weather:

- Stop work

- Secure all loose materials, toolboxes, plywood, and trashcans. etc.
- Bring all workers to safe areas indoors when lightning or severe weather is in the immediate area.
- Verify that all buildings and trailer doors are locked and windows closed.
- Shut down and disconnect all non-critical electrical equipment to protect the equipment from electrical surges and abrupt power loss.

7.4 INJURY OR ILLNESS

In the event of injury or illness, site personnel will take the following action:

- Evaluate the scene for safe entry.
- Notify SHSC and Site Manager.
- Assess the type and extent of injury.
- Provide initial First Aid to injured person.
- Decontaminate the injured personnel, if or as necessary.
- If required and injury or illness not potentially life-threatening, transport to local medical facility.
- If injury or illness potentially life-threatening notify emergency medical services of need for transportation.
- Notify Regional Safety Officer (RSO) and PM.

7.5 EXTRICATION

In the event a person becomes trapped and requires extrication site personnel will take the following action:

- Notify SHSC and Site Manager
- Evaluate the scene for safe entry
- Contact the local Fire Department or Rescue Service
- Provide first aid as necessary
- Notify RSO and PM.

7.6 CHEMICAL EXPOSURE

In the event of chemical exposure site personnel will take the following action:

- Evaluate the scene for safe entry.
- Notify SHSC and Site Manager.
- Provide assistance with emergency shower, eyewash, or other initial First Aid, as required.
- Decontaminate exposed personnel.
- Notify emergency medical services of need for transportation as necessary.
- Notify RSO and PM.

7.7 SMALL FIRE

A small fire is defined as a fire that can be extinguished with a 4A:20BC type fire extinguisher or incipient stage fires, which can safely be extinguished with material readily at hand. In the event of a small fire, site personnel will take the following actions:

- Evacuate all unnecessary personal from the area, if possible, to an upwind location.
- Notify SHSC and Site Manager.
- Attempt to extinguish fire using portable fire extinguishers or by smothering from an upwind location.
- Request emergency response assistance as appropriate.
- Notify the RSO and PM.

7.8 LARGE FIRE

In the event of a large fire, or a small fire, which cannot be extinguished, the following actions will be taken:

- Sound alarm.
- Evacuate all unnecessary personnel from the area, if possible, to an upwind location.

- Notify local fire department; request other emergency response services (police, ambulance, and hospital) as needed.
- Notify Site Manager and RSO and other appropriate personnel or agencies.

7.9 EXPLOSION

In the event of an explosion, all nonessential personnel will evacuate the site. Required support equipment, services, and personnel will be requested. Response will follow steps identified under the Chemical Exposure section. Notification action as indicated in the Large Fires section will be followed.

7.10 SMALL SPILL

In the event of a small spill, appropriate actions will be taken to prevent the spill from reaching groundwater, surface water or drains.

Actions include:

- Verification of spilled material, volume and hazards.
- Determine appropriate response procedures including PPE (see Material Safety Data Sheets (MSDS) or Chemical Data Sheet).
- Assess quantity and size of the spill to determine the level of response to contain and clean it up.
- Confine or contain spill with booms, pads, or berm.
- Neutralize spill with appropriate agents (if safe/possible).
- Notify RSO and Site Manager.
- Weston Solutions, Inc. will collect spilled material including absorbent material and place in appropriate containers. All hazardous material shall be disposed of in accordance with all applicable hazardous waste regulations and client requirements.

Weston Solutions, Inc. will keep all records related to the spill of hazardous waste for a period of at least three years after the spill has been cleaned up or such longer period of time as required in any unresolved enforcement action.

Note: The MSDS's for materials on-site with potential to spill (e.g., gasoline, diesel, acids, solvents) will be provided as Attachment 4 to this emergency response plan or the location of MSDS's will be documented in Attachment 4. Procedures and requirements for spill response will follow criteria outlined in the MSDS.

7.11 LARGE SPILL

A volume equal to or greater than State or Federal reportable quantity (RQ) and/or those beyond the capabilities and resources of on-site personnel defines large spills. Appropriate remedial actions will be conducted according to State and Federal Regulations.

General procedures as follows:

- Verification of spilled material, volume and hazards.
- As safe to do so, confine the spill to the smallest area possible using booms, pads, berms or any other effective material.
- Assess type and extent of damages and injuries to personnel; take appropriate first aid steps if necessary.
- Notify RSO and Site Manager.
- In the event the additional emergency clean-up assistance is needed, WESTON will request assistance from off-site response contractors.

- Weston Solutions, Inc. will collect all hazardous waste including contaminated booms and absorbent material. All hazardous clean-up residues shall be disposed of in accordance with all applicable hazardous waste regulations.

- All emergency equipment will be decontaminated prior to being put back into service. Expendable or damaged supplies will be immediately replaced.

Weston Solutions, Inc. will keep all records related to the spill of hazardous waste for a period of at least three years after the spill has been cleaned up or such longer period of time as required in any unresolved enforcement action.

In the event of a spill or a release requiring agency reporting, the PM will notify the client and appropriate regulatory agencies (see Attachments 1 and 4).

SECTION 8

CRITIQUES AND CORRECTIVE ACTIONS

8. CRITIQUES AND CORRECTIVE ACTIONS

Post emergency response activities include documentation, investigation and appropriate corrective actions to avoid future problems. The Program Safety Manager (PSM), operations safety staff, the RSO or the SHSC will lead the post-incident critique to assure worker knowledge of actions taken and proposals for changes as necessary. The SHSC and the RSO are responsible for documenting incident reports and providing communication to management. The PSM and/or operations safety staff is responsible for providing direction and assistance. Corrective actions necessary based upon appropriate review and investigation of the incident are required prior to assumption of work. In the event corrective actions cannot be made on an immediate basis, documented plans and schedules will be formulated.

ATTACHMENTS

ATTACHMENT 1
EMERGENCY CONTACTS

A copy of this form is to be posted near the site telephone.

EMERGENCY CONTACTS AND PHONE NUMBERS	
Service	**Telephone Number**
Emergency Service (Ambulance, fire, Police) Seneca County Sheriff's Dispatch	911
Ambulance (non-emergency) South Seneca Ambulance service	(607) 869-5313
Seneca County Police – (non-emergency)	(315) 539-9241
Romulus Fire Department – (non-emergency)	(607) 869-9611
Spill Response- CHEMTREC	(800) 424-9300
EPA Region 2 Emergency Response	(212) 264-024248
Hospital: Geneva General Hospital 196 North Street Geneva, New York 14456	(315) 787-4000
Poison Control Center (New York)	(800) 962-1253
WESTON Medical Emergency (Continuum)	(800) 229-3674
WESTON Emergency (24 hour) (West Chester)	(610) 692-3000
Site Manager- Miles Gelatt (cell)	(603) 540-0140
SHSC/ERC- TBD	(0)
WESTON CIH George Crawford (pager)	(800) 206-1507
WESTON PM- Guy Johnstone	(732) 417-5873
Rapid Design Manager - Tom Westenburg	(402) 880-7329
SEDA BRAC Coordinator- Steve Absolom	(607) 869-1309
CENAN PM- Randy Battaglia	(607) 869-1523
CENAN PE- Tom Battaglia	(607) 869-1353

ATTACHMENT 2
EMERGENCY RESPONSE EQUIPMENT

1. EQUIPMENT LISTING

Weston Solutions, Inc. will maintain the following emergency response equipment on-site in the event of an emergency. Minimal equipment are listed below. Should additional equipment be necessary and/or equipment determined no longer necessary additions or deletions to the following list will be made.

Table 13-2

Emergency Equipment

EQUIPMENT	NUMBER	LOCATION
First Aid Kit	1	Pickup truck
Blood Born Pathogen (BBP) Kit	1	Pickup truck
Eye Wash	1	Pickup truck
Air Horn	1	Pickup truck
Fire Extinguishers	1	Pickup truck

2. EQUIPMENT TESTING

It is the responsibility of the Emergency Coordinator to periodically test communications and fire control equipment and to ensure that all spill response/control, PPE; first aid supplies and rescue equipment is available and usable.

3. MAINTENANCE OF EQUIPMENT

Fire extinguishers are to be inspected monthly with annual testing by an outside firm. First aid supplies are to be inspected weekly on construction sites and monthly otherwise. The wearer will

inspect personal protective equipment prior to donning self-contained breathing apparatus for emergency use are to be inspected and documentation provided as indicated in WESTON's Respiratory Protection Program.

ATTACHMENT 3
FORMS (E.G., INCIDENT REPORT, INVESTIGATION REPORT, AND CLIENT REPORT FORM)

Indicate forms to be used:

- Forms are attached
- Forms will be provided in SSHO file

Minimum forms required on-site include:

- Notice of Incident
- Incident Report Log (e.g., OSHA 200 Log)
- Incident Investigation Form
- Spill Report Form (see attachment D)
- ERC Incident Checklists
- General
- Hazardous Materials (HazMat)
- Fire
- Safety and Research
- Incident Termination
- Safety Observation/Suggestion Form
- Investigators Interview Preparation Form
- Incident Observation Form

EMERGENCY RESPONSE COORDINATOR
INCIDENT CHECKLIST

Nature of Incident

- Hazardous Material Release
- Medical
- Fire
- Technical Rescue
- Other

Checklist

- Date and Time
- Command Established
- Command Post Location
- ERC (name)
- Safety and Research Support Officer (name)
- Decontamination Officer (name)
- Entry Team (names)
- Extent of Incident Identified
- Site Secured
- Evacuation Determined/Initiated
- Decontamination Setup (where necessary)
- Personnel Accounted For
- ERT Activated
- Internal
- External
- Medical Treatment Determined/Provided
- Control and Containment Determined/Initiated
- Release from Emergency Condition (date/time)
- Cleanup and Return to Normal Condition (date/time)
- Critique and Follow-up (date/time)

EMERGENCY RESPONSE COORDINATOR
HAZMAT INCIDENT CHECKLIST

Situation

- Spill
- Air
- Land
- Water
- Contained Within Structure
- Fire
- Leak
- Reaction
- Chemical(s) Involved
- Amount and Concentrations Estimated
- Container Types

Involving

- Fixed Location
- Transportation
- Piping
- Other
- Monitoring and Readings from Entry Team

Notifications

- Fire Department
- HazMat Response
- Police
- USCG
- State
- Local
- National Response Center
- Client
- WESTON
- Other

Key Steps:

- Identify Chemical(s), Hazards and Risk
- Determine Objectives (evacuation, external response or internal control)
- Establish Command Structure
- Establish Control Zones
- Ensure Response Teams Activated
- Ensure Personnel Accounted For
- Ensure Appropriate Medical Treatment as necessary
- Ensure Proper Equipment/PPE where necessary
- Ensure Decontamination Established where necessary
- Ensure Objectives for Entry Established
- Ensure Briefing Prior to Entry
- Ensure Debriefing of Entry Team

EMERGENCY RESPONSE COORDINATOR
FIRE INCIDENT CHECKLIST

Location:

Type of Fire:

- Building/Structure
- Vehicle
- Other

Extent of Fire:

Building and Location Information:

- Type of Construction
- Sprinkler System
- Age of Structure
- Occupancy
- Contents
- Hazardous Materials

Shut-Offs and Utilities:

- Gas
- Electric
- Steam
- Pits/Sumps
- Shafts/Elevators

Water Supply (type and location)

SAFETY AND RESEARCH OFFICER
HAZMAT INCIDENT RESPONSE CHECKLIST
AND RISK ASSESSMENT GUIDE

Establish Control Zones

Research:

- Chemical(s) Identified
- Chemical Data Sheets Available
- Chemical Hazards Determined
- Major Hazards
- Physical
- Flammable
- Toxic
- Corrosive
- Reactive
- Specific Medical Treatment(s)

Amount of Chemical(s) Released or Potential for Release:

Container Types and Volumes:

Containers Stressed:

- Fire
- Reaction
- Corrosion
- Other

Exposures

- Workers
- Public
- Environmental

Protective Clothing and Equipment Required:

Decontamination Established:

Objectives Identified and Briefing Conducted

Entry Team Established (names/roles)

Level of Protection Established

Entry Controlled and Timed

EMERGENCY RESPONSE COORDINATOR TERMINATION CHECKLIST

Type Incident, Incident Number and Date:

On-Site Debriefing:

- Personnel Exposures/Health Effects
- Equipment Needs/Restocking Requirements
- Operations Review
- Need for Crisis Intervention Services
- Identify Contact Person for any Additional Concerns

Forms and Reports Initiated

Location of Forms and Reports

Date and Time for Debrief and Critique

Assignments for Follow-up

Investigation for Cause Initiated

Regulatory Criteria (notifications/reports) Complete

SPILL REPORT FORM

This form is to be used to report to regulatory agencies and others in the event of a release or spill. Use this form to assist in the initial report phase of an incident. Have the following information available (to the extent possible) before the call. Do not wait for information that would put you at risk of not reporting in a timely manner and in accordance with applicable regulations.

Name, Address, Telephone Number of Person Reporting.

The identity (chemical name), location and nature of the release, including its source, quantity and duration.

Whether the release is to air, ground, or water.

Whether any injuries or property damage.

What are the weather conditions?

What types of corrective actions are underway (e.g., containment, evacuation, etc.)?

ATTACHMENT 4
SITE-SPECIFIC SPILLS OR RESPONSE ACTIONS

1. Specific procedures are required of the ERC in the event of an emergency situation, these actions include:

- Activate or ensure activation of alarm systems, notify appropriate local or state response agencies.
- Identify the character, exact source, amount and areal extent of any released material.
- Assess possible direct and indirect hazards to human health or the environment that may result from the release, fire or explosion.
- Determine if evacuation of local areas is required, and immediately notify either the government official designated as the on-scene coordinator or the National Response Center (NRC).
- Ensure that fires, explosions, and releases do not occur, recur, or spread to other parts of the site or facility.
- Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment if facility operations cease.
- Provide treatment, storage and disposal of any material that results from a release, fire, or explosion immediately after an emergency.
- Ensure that no waste incompatible with the released material is processed until cleanup procedures are completed and all emergency equipment listed in this plan is cleaned and fit for its intended use.

2. Evaluate the chemicals or contaminants on your site to determine whether any of the following regulatory spill reports are applicable. Fill out the necessary information in the planning phase to assure prompt and reliable reporting in the event of a spill or release.

Determine If CERCLA Release:

1. Are any chemicals regulated as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance?
   (see 40 CFR Part 302.4). If so, list.

2. If listed chemicals indicate RQ for each.

3. In the event of a spill of the referenced hazardous substance, has the release equaled of exceeded the RQ within 24 hours?

4. Is the release totally contained within buildings or structures? If no, it must be reported.

5. If Reporting required, notify (in addition to internal/client):

   a. National Response Center 800-424-8802

   b. State Emergency Response Commission (enter phone number) _____

   c. Local Emergency Response Commission (enter phone number)_____

6. Provide information as indicated in Attached Spill Report Form.

7. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Emergency Planning and Community Right-To-Know Act (EPCRA) Release:

1. Are any chemicals listed as extremely hazardous substances? (See 40 CFR Part 355).

2. Are any of the listed chemicals produced, used or stored in excess of the threshold planning quantity (TPQ)? If so, list chemical and quantity above TPQ.

3. Could a release of Item 2 chemicals expose people outside of the facility boundaries? If no, is not EPCRA report requirement.

4. If a release of RQ of a listed chemical, notify (in addition to internal and client):

   a. SERC (enter phone number) _____

   b. LEPC (enter phone number) _____

5. Provide information as indicated in Attached Spill Report Form.

6. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Resource Conservation and Recovery Act (RCRA) Release:

1. Is the chemical regulated as a hazardous waste? (See 40 CFR Part 261). If not, is not a RCRA report.

2. Does the release constitute a "release, fire, or explosion that could threaten human health or the environment outside the facility? (Note, there are no particular RQs or concentrations in this case).

3. If the release meets the requirements of Item 2, notify (in addition to internal and client):

   a. "Appropriate local authorities" if an evacuation is necessary (list name and phone or all). _____

   b. State or Federal On-Scene Coordinator (name and phone number).

   _____

   c. National Response Center 800-424-8802

4. Provide information as indicated in Attached Spill Report Form.

5. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Clean Water Act (CWA) Release:

1. Has the spill/release polluted water by:

   a. Being a hazardous substance (40 CFR Part 117) equaling or exceeding its RQ? If hazardous substance list and indicate RQ. *Or*

b. Being an oil that creates a sheen or discoloration of the water surface, or violates a water quality standard?

2. If release meets the above criteria you must report to the NRC (800-424-8802) as soon as knowledge of the spill.

3. Provide information as indicated in Attached Spill Report Form.

4. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Toxic Substance Control Act (TSCA) Release of PCBs (See 40 CFR Part 761.125). Determine if other TSCA reporting chemicals (e.g., asbestos) on-site):

1. Is the PCB material concentration equal to or greater than 50 ppm? If so, has it contaminated surface and/or drinking water, sewers, grazing lands, or vegetable gardens? *or*

2. Does the spill volume exceed 10 pounds or more of PCBs by weight wherever they are spilled?

3. If so, then notify (in addition to corporate and client requirements)

   a. EPA Regional Office of Pesticides and Toxic Substances Branch (list name and phone number) _____
   and

   b. NRC immediately upon knowledge (if spill volume exceeds RQ of 1 pound or more of PCBs by weight). _____

4. Provide information as indicated in Attached Spill Report Form.

5. Ensure written reports prepared and submitted in accordance with regulation and corporate policy. Note that reports under the CWA may be additionally required based upon spill location.

Spill Report Form

This form is to be used in the event of a release or spill. Use this form to assist in the initial report phase of an incident. Have the following information available (to the extent possible) before the call. Do not wait for information that would put you at risk of not reporting in a timely manner and in accordance with applicable regulation(s).

1. Name, Address, Telephone Number of Person Reporting:

2. The identity (chemical name), location and nature of the release, including its source, quantity and duration.

3. Whether the release is to air, ground or water.

4. Whether any injuries or property damage.

5. What are the weather conditions?

6. What types of corrective actions are underway (e.g., containment, evacuation, etc.)?

ATTACHMENT 5
SITE PLAN, EVACUATION ROUTES, AND EQUIPMENT LOCATIONS

A map depicting the site, evacuation routes and equipment locations will be posted in the office and work site. All personnel must be made aware of evacuation signals, evacuation routes and procedures prior to site work. Evacuation and other site emergencies must be discussed and/or practiced to assure employee awareness and ability to respond properly.

Hospital Route and Directions

A map showing the route to the hospital will be posted near the site telephone and will be posted in each site vehicle. The hospital route will be field verified prior to work initiation. Since the access routes and/or gates to the site have not been verified, the hospital route will be finalized during mobilization and submitted as an amendment to the plan. A written description of the directions to the hospital facility will be attached to the figure.

U.S. Army Corps of Engineers

Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT ACTIVITY
TIME CRITICAL REMOVAL ACTION AT
INDUSTRIAL WASTE SITE
(SLUDGE PILES)–SEAD 5 AND VOC SITES-
SEAD'S 39 & 40
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No's. 0069 & 0034

FINAL CHEMICAL SAMPLING AND ANALYSIS PLAN

JULY 2003

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

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LIST OF ACRONYMS

CLP	Contract Laboratory Program
COC	chain-of-custody
CSAP	Chemical Sampling and Analysis Plan
yd^3	cubic yards
DQOs	Data Quality Objectives
EPA	U.S. Environmental Protection Agency
ft	foot/feet
ft^2	square feet
MS/MSDs	matrix spike/matrix spike duplicates
NE	New England
NYSDEC	New York State Department of Environmental Conservation
OSR	On-site Representative
PAHs	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
QA	quality assurance
QC	quality control
QL	quantitation limit
RCRA	Resource Conservation and Recovery Act
SEAD	Seneca Army Depot Activity
SOPs	Standard Operating Procedures
SOW	Scope of Work
SVOC	semivolatile organic compounds
SWMUs	Solid Waste Management Units
TAGMs	Technical and Administrative Guidance Memorandums
TAL	Target Analyte List
TCL	Target Compound List
TCLP	toxicity characteristic leaching procedures
USACE	U.S. Army Corps of Engineers
VOA	volatile organic aromatics
VOCs	volatile organic compounds
$WESTON_{SM}$	Weston Solutions, Inc.

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Chemical Sampling and Analysis Plan (CSAP) has been prepared by Weston Solutions, Inc. (WESTON$_{SM}$) for the Time Critical Removal Action at the Seneca Army Depot Activity (SEAD), Romulus, New York. The remedial action is intended to provide clean closure to areas SEAD 5, 39 & 40 to facilitate transfer of these properties to public and private beneficial reuse. A summary of the site historical data and contaminants is provided in Subsection 1.2 of the Work Plan prepared by WESTON for this project.

SECTION 2

SCOPE AND OBJECTIVES

2. SCOPE AND OBJECTIVES

This section outlines the objectives of the sampling effort, quality assurance (QA) and quality control (QC) measures, and identifies the uses of the data that will be generated during the project.

2.1 PROJECT PURPOSE

The general project requirements as described in the Final Scope of Work (SOW) for Rapid Response Action includes excavation of contaminated soils, sampling and analysis, waste handling, transportation and disposal of all site waste generated or collected and site restoration.

2.1.1 Sampling Objectives

The goal of the CSAP is to develop and implement procedures for field sampling, chain-of-custody (COC), laboratory analysis, and reporting that will provide accurate defensible results. The objective of confirmatory sampling is to verify that the identified contamination has been removed from each specified excavation, and that concentrations of contaminants remaining at the site comply with the Technical and Administrative Guidance Memorandums (TAGMs) cleanup standards. The excavated areas will be considered successfully remediated once the excavated soils are below the recommended soil cleanup objectives.

The objectives of the sampling event are as follows:

- Collect and analyze confirmatory soil samples at SEAD 5, 39 & 40 excavations to verify that the remedial action goals of the removal action are met.
- Collect and analyze waste characterization samples to determine if excavated soils and sediments meet Resource Conservation and Recovery Act (RCRA) requirements for landfill disposal prior to shipment to an off-site disposal facility.

2.2 GENERAL QUALITY ASSURANCE /QUALITY CONTROL PROCEDURES

Quality Control samples will be collected and will include field duplicates and matrix spike/matrix spike duplicates (MS/MSDs). For confirmatory samples, for each matrix and

analytical parameter, one field duplicate sample will be collected for every 10 field samples. One MS/MSD sample will be collected for every 20 field samples. Quality Control samples will not be collected for any samples used for disposal characterization or waste profiling at an off-site facility. As appropriate, temperature blanks may be prepared and submitted with each cooler of samples. Trip blank samples will be submitted with each cooler containing samples submitted for volatile organic compound (VOC) analysis. Quality Control samples will not be submitted with disposal characterization samples. No QA samples will be collected for the removal action activities.

SECTION 3

FIELD ACTIVITIES

3. FIELD ACTIVITIES

This section identifies specific rationales, equipment, and procedures for conducting required sampling at SEAD 5, 39 & 40 and associated site activities.

3.1 EXCAVATION CONFIRMATION SAMPLING

3.1.1 Sampling Rationale

In order to ensure that the remedial action goals of the removal action are met (refer to Table 3-1), confirmation samples will be collected from the base and sidewalls (if applicable) of each identified excavation. Base (or floor) samples will be collected at a rate of one sample per 900 square feet (ft^2), or a fraction thereof, of the surface area. Base samples will be collected in each 900 ft^2 grid (or less) as a five-point composite (four corners and center of grid section).

At least one discrete sample will be collected from each sidewall of an open excavation that is 12 inches in depth or greater. Sidewall samples will be collected at the midpoint, at a rate of one sample every 30 linear feet of excavation wall length. Sidewall samples will not be collected where the depth of the excavation measures less than 12 inches. For excavations where the sidewalls are less than 12 inches in depth, at least one confirmation soil sample will be collected from the perimeter every 30 linear feet of length at the top of the excavation (1 foot in from the perimeter limit). At least one soil sample will be collected along each excavation edge or sidewall.

For excavations of limited base area, but extended length (e.g., drainage ditch associated with SEAD 40), at least one additional soil sample will be collected from the base of excavation for each 30-foot length (or fractions thereof).

Confirmation soil samples will be collected from beneath and around every removed aboveground waste pile or berm structure. At least one soil sample will be collected from the point directly beneath each pile or berm structure, and from at least four other locations (e.g., major compass point locations) that are located around the perimeter of the pile or berm structure.

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Da
MATORY SOIL SAMPLES										
oil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**							
zene	SW-846/5035A /8260B	0.06	0.06	60	mg/kg					95
ylbenzene	SW-846/5035A /8260B	5.5	5.5	N/A	mg/kg					95
uene	SW-846/5035A /8260B	1.5	1.5	1,500	mg/kg					95
-Xylenes	SW-846/5035A /8260B	NP	NP	1,200 (total)	mg/kg					95
ylene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
l Xylenes	SW-846/5035A /8260B	1.2	1.2	1,200 (total)	mg/kg					95
rrogates										
uene-d8	SW-846/5035A /8260B	NP	NP	1,500	mg/kg					95
Metals										
enic	SW-846/6010B	3-12[0]	7.5 or SB	7.5 (or bkg)	mg/kg					95
ium	SW-846/6010B	15-600	300 or SB	300 (or bkg)	mg/kg					95
dmium	SW-846/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg					95
omium	SW-846/6010B	1.5-40[0]	10 or SB	10 or (bkg)	mg/kg					95
d	SW-846/6010B	*[2]	SB [2]	bkg	mg/kg					95
rcury	SW-846/6010B	0.001-0.2	0.1	0	mg/kg					95
enium	SW-846/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg					95
er	SW-846/6010B	NA	NA	(bkg)	mg/kg					95
dium	SW-846/6010B	6000-8000	6000-8000	bkg	mg/kg					95
allium	SW-846/6010B	NA	NA	bkg	mg/kg					95
nadium	SW-846/6010B	1-300	150 or SB	150 (or bkg)	mg/kg					95
(Cu)										
pper	SW-846/6010B	1-50	25 or SB	25 (or bkg)	mg/kg					95
)										
c	SW-846/6010B	9-50	20 or SB	20 (or bkg)	mg/kg					95
Hs - Soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**							
enaphthene	SW-846/3541/3 540B/8270C	90.0	50.0[3]	50,000	mg/kg					95
enaphthylene	SW-846/3541/3 540B/8270C	41.0	41.0	41,000	mg/kg					95
thracene	SW-846/3541/3 540B/8270C	700.0	50.0[3]	50,000	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
zo(a)anthracene	SW-846/3541/3 540B/8270C	3.0	0.224 or MDL	224 (or MDL)	mg/kg					95
zo(a)pyrene	SW-846/3541/3 540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg					95
zo(b)fluoranthene	SW-846/3541/3 540B/8270C	1.1	1.1	1,100	mg/kg					95
zo(g,h,i)perylene	SW-846/3541/3 540B/8270C	800	50.0[3]	50,000	mg/kg					95
zo(k)fluoranthene	SW-846/3541/3 540B/8270C	1.1	1.1	1,100	mg/kg					95
ysene	SW-846/3541/3 540B/8270C	0.4	0.4	400	mg/kg					95
enzo(a,h)anthracene	SW-846/3541/3 540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg					95
ranthene	SW-846/3541/3 540B/8270C	1900.0	50.0[3]	50,000	mg/kg					95
rene	SW-846/3541/3 540B/8270C	350.0	50.0[3]	50,000	mg/kg					95
no(1,2,3-cd)pyrene	SW-846/3541/3 540B/8270C	3.2	3.2	3,200	mg/kg					95
hthalene	SW-846/3541/3 540B/8270C	13.0	13.0	13,000	mg/kg					95
nanthrene	SW-846/3541/3 540B/8270C	220.0	50.0[3]	50,000	mg/kg					95
ene	SW-846/3541/3 540B/8270C	665.0	50.0[3]	50,000	mg/kg					95
CHARATERIZATION										
METALS (23)										
minum	SW-846/1311/6010B	33000	33000	bkg	mg/kg					95
mony	SW-846/1311/6010B	NA	NA	bkg	mg/kg					95
enic	SW-846/1311/6010B	3-12[0]	7.5 or SB	7.5 (or bkg)	mg/kg					95
um	SW-846/1311/6010B	15-600	300 or SB	300 (or bkg)	mg/kg					95
yllium	SW-846/1311/6010B	0-1.75	0.16 or SB	0	mg/kg					95
lmium	SW-846/1311/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg					95
cium	SW-846/1311/6010B	130-35000[1]	130-35000[1]	bkg	mg/kg					95
omium	SW-846/1311/6010B	1.5-40[0]	10 or SB	10 or (bkg)	mg/kg					95
balt	SW-846/1311/6010B	2.5-60[0]	30 or SB	30 (or bkg)	mg/kg					95
pper	SW-846/1311/6010B	1-50	25 or SB	25 (or bkg)	mg/kg					95
nide	SW-846/1311/6010B	NA	*1	N/A	mg/kg					95
	SW-846/1311/6010B	2000-550000	2000 or SB	bkg	mg/kg					95
d	SW-846/1311/6010B	*2	SB [2]	bkg	mg/kg					95
gnesium	SW-846/1311/6010B	100-5000	100-5000	bkg	mg/kg					95
nganese	SW-846/1311/6010B	50-5000	50-5000	bkg	mg/kg					95
rcury	SW-846/1311/6010B	0.001-0.2	0.1	0	mg/kg					95
kel	SW-846/1311/6010B	0.5-25	13 or SB	13 (or bkg)	mg/kg					95
assium	SW-846/1311/6010B	8500-43000	8500-43000	bkg	mg/kg					95
enium	SW-846/1311/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
r	SW-846/1311/6010B	NA	NA	(bkg)	mg/kg					95
um	SW-846/1311/6010B	6000-8000	6000-8000	bkg	mg/kg					95
lium	SW-846/1311/6010B	NA	NA	bkg	mg/kg					95
adium	SW-846/1311/6010B	1-300	150 or SB	150 (or bkg)	mg/kg					95
	SW-846/1311/6010B	9-50	20 or SB	20 (or bkg)	mg/kg					95
Cs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**							
1,2-Tetrachloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
1-Trichloroethane	SW-846/5035A /8260B	0.76	0.8	800	mg/kg					95
2,2-Tetrachloroethane	SW-846/5035A /8260B	0.6	0.6	600	mg/kg					95
2-Trichloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
Dichloroethane	SW-846/5035A /8260B	0.2	0.2	200	mg/kg					95
Dichloroethene	SW-846/5035A /8260B	0.4	0.4	400	mg/kg					95
Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
3-Trichlorobenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg					95
3-Trichloropropane	SW-846/5035A /8260B	NP	NP	3,400	mg/kg					95
4-Trichlorobenzene	SW-846/5035A /8260B	3.4	3.4	3,400	mg/kg					95
4-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg					95
-Dibromo-3-chloroporpane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
-Dibromoethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
-Dichlorobenzene	SW-846/5035A /8260B	7.9	7.9	N/A	mg/kg					95
-Dichloroethane	SW-846/5035A /8260B	0.1	0.1	N/A	mg/kg					95
-Dichloroethene (total)	SW-846/5035A /8260B	0.3	0.3	N/A	mg/kg					95
-Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
,5-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
-Dichlorobenzene	SW-846/5035A /8260B	NP	NP	300	mg/kg					95
-Dichloropropane	SW-846/5035A /8260B	0.3	0.3	300	mg/kg					95
-Dichlorobenzene	SW-846/5035A /8260B	8.5	8.5	300	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
tanone	SW-846/5035A /8260B	0.3	0.3	300	mg/kg					95
lorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
exanone	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
lorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
opropyltoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ethyl-2-pentanone	SW-846/5035A /8260B	1.0	1.0	1,000	mg/kg					95
one	SW-846/5035A /8260B	0.11	0.2	200	mg/kg					95
Chloride	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
zene	SW-846/5035A /8260B	0.06	0.06	60	mg/kg					95
mobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
mochloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
modichloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
moform	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
momethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
bon Disulfide	SW-846/5035A /8260B	2.7	2.7	N/A	mg/kg					95
bon Tetrachloride	SW-846/5035A /8260B	0.6	0.6	600	mg/kg					95
orobenzene	SW-846/5035A /8260B	1.7	1.7	1,700	mg/kg					95
oroethane	SW-846/5035A /8260B	1.9	1.9	1,900	mg/kg					95
oroform	SW-846/5035A /8260B	0.30	0.3	300	mg/kg					95
oromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
oroprene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
romochloromethane	SW-846/5035A /8260B	NA	NA	N/A	mg/kg					95
romomethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
orodifluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
Methacrylate	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
benzene	SW-846/5035A /8260B	5.5	5.5	N/A	mg/kg					95
n TF	SW-846/5035A /8260B	6.0	6.0	N/A	mg/kg					95
achlorobutadiene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ropylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
yl Methacrylate	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ylene Chloride	SW-846/5035A /8260B	0.1	0.1	100	mg/kg					95
E	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
thalene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
tylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
opylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
achloroethene	SW-846/5035A /8260B	1.4	1.4	1,400	mg/kg					95
ahydrofuran	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ene	SW-846/5035A /8260B	1.5	1.5	1,500	mg/kg					95
s-1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	300	mg/kg					95
s-1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
s-1,4-Dichloro-2-butene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
hloroethene	SW-846/5035A /8260B	0.70	0.7	700	mg/kg					95
hlorofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
l Acetate	SW-846/5035A /8260B	NP	NP	200	mg/kg					95
l Chloride	SW-846/5035A /8260B	0.12	0.2	200	mg/kg					95
-Xylenes	SW-846/5035A /8260B	NP	NP	1,200 (total)	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completenes (% valid Dat
ene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
Xylenes	SW-846/5035A /8260B	1.2	1.2	1,200 (total)	mg/kg					95
rogates										
Dichloroethane-d4	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
omofluorobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
omofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg					95
ene-d8	SW-846/5035A /8260B	NP	NP	1,500	mg/kg					95
OCs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**							
-Trichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
oxybis(1-Chloropropane)	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
5-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	100	mg/kg					95
6-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
Dichlorophenol	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg					95
Dimethylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
Dinitrophenol	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg					95
Dinitrotoluene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
Dinitroluene	SW-846/3541/ 3540B/8270C	1.0	1.0	1,000	mg/kg					95
hloronaphthalene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
hlorophenol	SW-846/3541/ 3540B/8270C	0.8	0.8	800	mg/kg					95
ethylnaphthalene	SW-846/3541/ 3540B/8270C	36.4	36.4	36,400	mg/kg					95
ethylphenol	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	100 (or MDL)	mg/kg					95
troaniline	SW-846/3541/ 3540B/8270C	0.43	0.430 or MDL	430 (or MDL)	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
		Eastern USA Background (SB)	Rec. Soil Cleanup Objective	Risk Assessment				DQOs		DQO
of Concern	Method	(ppm)	(ppm)	Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
rophenol	SW-846/3541/ 3540B/8270C	0.33	0.33 or MDL	330 (or MDL)	mg/kg					95
Dichlorobenzidine	SW-846/3541/ 3540B/8270C	NA	NA	N/A	mg/kg					95
roaniline	SW-846/3541/ 3540B/8270C	0.5	0.500 or MDL	500 (or MDL)	mg/kg					95
Dinitro-2-methylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
omophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
loro-3-methylphenol	SW-846/3541/ 3540B/8270C	0.24	0.240 or MDL	240 (or MDL)	mg/kg					95
loroaniline	SW-846/3541/ 3540B/8270C	0.22	0.220 or MDL	220 (or MDL)	mg/kg					95
lorophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
ethylphenol	SW-846/3541/ 3540B/8270C	0.9	0.9	900	mg/kg					95
troaniline	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	N/A	mg/kg					95
trophenol	SW-846/3541/ 3540B/8270C	NP	NP	100 (or MDL)	mg/kg					95
naphthene	SW-846/3541/ 3540B/8270C	90.0	50.0***	50,000	mg/kg					95
naphthylene	SW-846/3541/ 3540B/8270C	41.0	41.0	41,000	mg/kg					95
ne*	SW-846/3541/ 3540B/8270C	0.1	0.1	100	mg/kg					95
nracene	SW-846/3541/ 3540B/8270C	700.0	50.0***	50,000	mg/kg					95
zo(a)anthracene	SW-846/3541/ 3540B/8270C	3.0	0.2242 ot MDL	224 (or MDL)	mg/kg					95
zo(a)pyrene	SW-846/3541/ 3540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg					95
zo(b)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg					95
zo(g,h,i)perylene	SW-846/3541/ 3540B/8270C	800	50.0***	50,000	mg/kg					95
zo(k)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg					95
zoic acid	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
zyl alcohol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
2-Chloroethoxy)methane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
2-Chloroethyl)ether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
2-ethylhexyl)phthalate	SW-846/3541/ 3540B/8270C	435.0	50.0***	50,000	mg/kg					95
ylbenzylphthalate	SW-846/3541/ 3540B/8270C	122.0	50.0***	50,000	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
sene	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg					95
nzo(a,h)anthracene	SW-846/3541/ 3540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg					95
nzofuran	SW-846/3541/ 3540B/8270C	6.2	6.2	6,200	mg/kg					95
ıylphthalate	SW-846/3541/ 3540B/8270C	7.1	7.1	7,100	mg/kg					95
ethylphthalate	SW-846/3541/ 3540B/8270C	2.0	2.0	2,000	mg/kg					95
-butylphthalate	SW-846/3541/ 3540B/8270C	8.1	8	8,100	mg/kg					95
-octylphthalate	SW-846/3541/ 3540B/8270C	120.0	50.0***	50,000	mg/kg					95
ranthene	SW-846/3541/ 3540B/8270C	1900.0	50.0***	50,000	mg/kg					95
rene	SW-846/3541/ 3540B/8270C	350.0	50.0***	50,000	mg/kg					95
achlorobenzene	SW-846/3541/ 3540B/8270C	1.4	0.41	4,100	mg/kg					95
achlorobutadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
achlorocyclopentadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
achloroethane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
eno(1,2,3-cd)pyrene	SW-846/3541/ 3540B/8270C	3.2	3.2	3,200	mg/kg					95
horone	SW-846/3541/ 3540B/8270C	4.40	4.40	4,400	mg/kg					95
hthalene	SW-846/3541/ 3540B/8270C	13.0	13.0	13,000	mg/kg					95
obenzene	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg					95
itroso-di-n-propylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
itrosodiphenylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
tachlorophenol	SW-846/3541/ 3540B/8270C	1.0	1.0 or MDL	1000 (or MDL)	mg/kg					95
enanthrene	SW-846/3541/ 3540B/8270C	220.0	50.0***	50,000	mg/kg					95
nol	SW-846/3541/ 3540B/8270C	0.03	0.03 or MDL	300 (or MDL)	mg/kg					95
ene	SW-846/3541/ 3540B/8270C	665.0	50.0***	50,000	mg/kg					95
urrogates										
-Dichlorobenzene-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
6-Tribromophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
lorophenol-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
orobiphenyl	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
orophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
benzene-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
nol-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
henyl-d14	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg					95
CBs - soil										
lor-1260	3540/8082	10.0	1.0 surface 10 subsurf.	1000 (total)	mg/kg					95
lor-1016	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg					95
lor 1221	3540/8082	10.0	1.0 surface 10 subsurf.	1001 (total)	mg/kg					95
lor 1232	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg					95
lor 1242	3540/8082	10.0	1.0 surface 10 subsurf.	1002 (total)	mg/kg					95
lor 1248	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg					95
lor 1254	3540/8082	10.0	1.0 surface 10 subsurf.	1003 (total)	mg/kg					95
RROGATES										
achlorobiphenyl	3540C/8082	NP	NP	110	mg/kg					95
achloro-m-xylene	3540C/8082	NP	NP	110	mg/kg					95
ESTICIDES										
a-BHC	SW-846/3541/ 3540B/8081	0.2	0.11	110	mg/kg					95
-BHC	SW-846/3541/ 3540B/8081	0.2	0.2	110	mg/kg					95
a-BHC	SW-846/3541/ 3540B/8081	0.3	0.3	110	mg/kg					95
mma-BHC (lindane)	SW-846/3541/ 3540B/8081	0.06	0.06	110	mg/kg					95
otachlor	SW-846/3541/ 3540B/8081	0.10	0.10	110	mg/kg					95
rin	SW-846/3541/ 3540B/8081	0.5	0.041	110	mg/kg					95
otachlor epoxide	SW-846/3541/ 3540B/8081	0.02	0.02	110	mg/kg					95
losulfan I	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg					95
ldrin	SW-846/3541/ 3540B/8081	0.1	0.044	110	mg/kg					95
-DDE	SW-846/3541/ 3540B/8081	4.4	2.1	110	mg/kg					95

Table 3-1
Remedial Action Goals, Laboratory Analysis Methods And Data Quality Objectives

						TBD				
								DQOs		DQO
of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completene (% valid Dat
rin	SW-846/3541/ 3540B/8081	0.1	0.1	110	mg/kg					95
osulfan II	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg					95
DDD	SW-846/3541/ 3540B/8081	7.7	2.9	110	mg/kg					95
osulfan sulfate	SW-846/3541/ 3540B/8081	1.0	1.0	110	mg/kg					95
DDT	SW-846/3541/ 3540B/8081	2.5	2.1	110	mg/kg					95
noxychlor	SW-846/3541/ 3540B/8081	900	***	110	mg/kg					95
rin ketone	SW-846/3541/ 3540B/8081	NA	NA	110	mg/kg					95
a-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg					95
mma-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg					95
rin aldehyde	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg					95
DE SURROGATES										
achlorobiphenyl	3540C/8081A	NP	NP	110	mg/kg					95
achloro-m-xylene	3540C/8081A	NP	NP	110	mg/kg					95
NALYSIS										
tability	SW1010	NP	NP	N/A	mg/kg					
ctivity - Hydrogen Cyanide	7.3.3.2	NP	NP	N/A	mg/kg					
ctivity - Hydrogen Sulfide	7.3.4.1	NP	NP	N/A	mg/kg					
rosivity	SW9040B	NP	NP	N/A	mg/kg					
olids		NP	NP	N/A	mg/kg					
		NP	NP	N/A	mg/kg					
nt Filter	SW9095A	NP	NP	N/A	mg/kg					

t Provided in TAGM Recommended Soil/Groundwater Cleanup Objectives
t Applicable
ork State background
orms of cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of cyanide should be taken into consideration when establishing soil cleanup objectives.
ound levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas
ear highways are much higher and typically range from 200-500 ppm.
TAGM #4046, Total VOCs<10ppm. Total semi-VOCs<500ppm and Individual Semi-VOCs<50 ppm.

Samples will be collected beneath the removed waste pile or berm structure at a rate of one sample per 900 ft^2 or less, and at a rate of at least one sample every 30 linear feet along the removed pile or berm structure perimeter.

Confirmation sample quantities may increase in the field to address site-specific field observations and findings. If initial excavation confirmation samples do not meet required clean-up levels, soils in the area of failure will be excavated an additional 6 inches. Confirmation samples will be collected and analyzed in the area of additional excavation.

3.1.2 SEAD 5 Sampling

Confirmatory sampling will be conducted at the excavation site in SEAD-5 to verify that the area where industrial sludge was stockpiled no longer contains levels of selected metals and polynuclear aromatic hydrocarbons (PAHs) at concentrations above recommended cleanup objective levels. The extent of the proposed excavation at SEAD-5 is 150 feet (ft) by 150 ft by 1 ft. As specified in Subsection 3.1.1, it is expected that a minimum of 45 discrete grab samples will be collected from the proposed excavation area, with no fewer than 25 being collected from the base of the excavation, while at least 20 others (i.e., five each along each side of the excavation) will be collected from the four perimeter edges of the excavation.

The locations selected for collection of confirmational samples will be biased towards sites that are suspected to be contaminated. Each of the confirmational samples will be analyzed for "RCRA 8" metals plus copper and zinc and PAHs using United States Environmental Protection Agency (EPA) Methods SW-846/6010 and 8270C, respectively. Additional confirmational samples will be collected and analyzed if results of field screening or observation or the professional judgment of site personnel suggests that they are warranted.

3.1.3 SEAD 39 Sampling

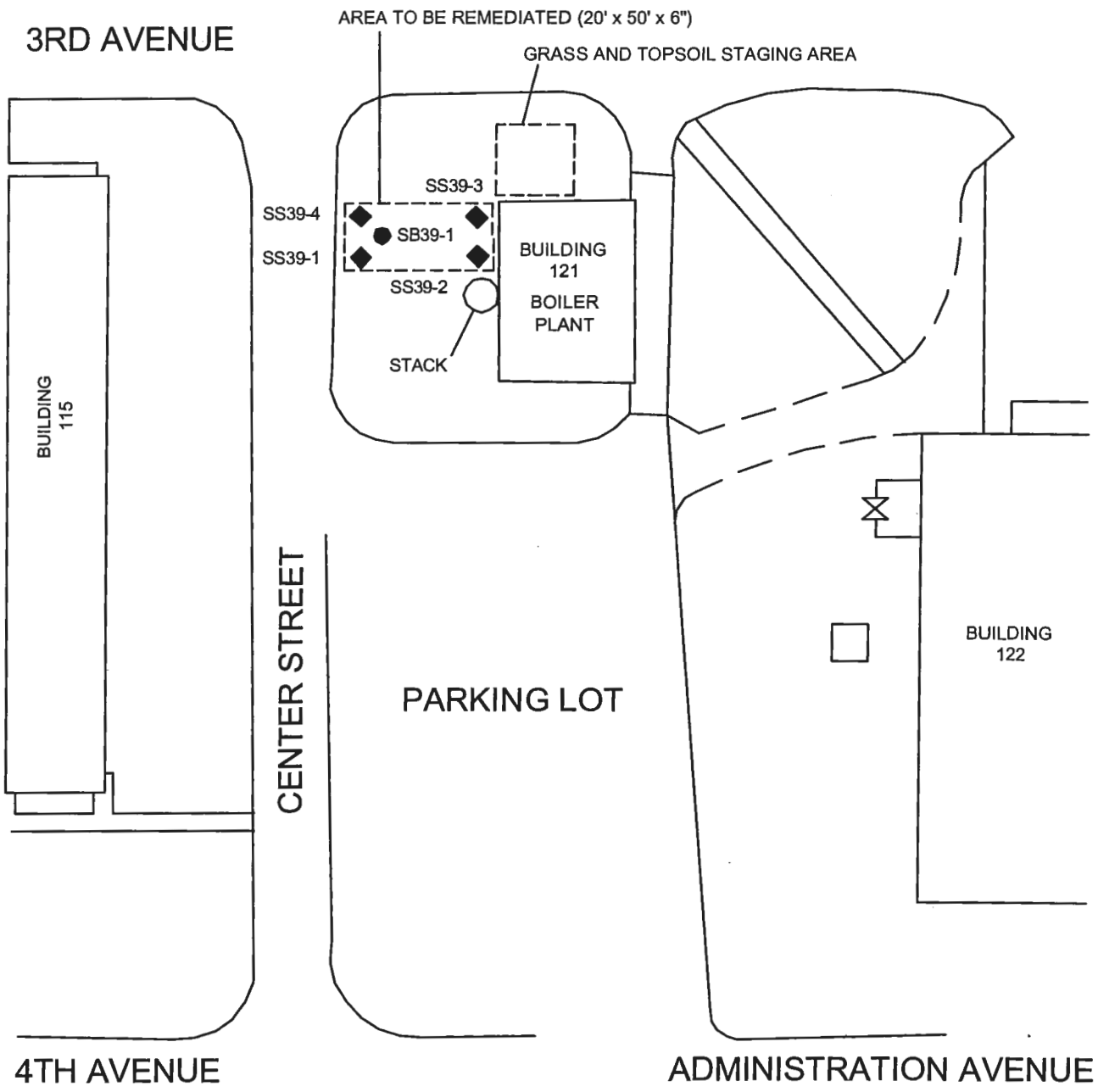
Confirmational sampling will be conducted at the excavation site in SEAD-39 to verify that the area where boiler blowdown is suspected to have been discharged no longer contains levels of selected VOCs, semi-volatile organic compounds (SVOCs) or metals at concentrations above

recommended cleanup objective levels. As is shown on Figure 3-1, the extent of the proposed excavation at SEAD-39 is 20 ft by 50 ft by 6 inches. As specified in Subsection 3.1.1, it is expected that a minimum of eight discrete grab samples will be collected from the proposed excavation area, with no fewer than two being collected from the base of the excavation, while at least six others (i.e., two each on the 50-foot edges, and one each on the 20-foot edges) will be collected from the four perimeter edges of the excavation.

The locations selected for collection of confirmational samples will be biased towards sites that are suspected to be contaminated. Each of the confirmational samples will be analyzed for aromatic VOCs (i.e., BTEX), PAHs, and the "RCRA" eight metals by EPA Methods SW-846/8260B, SW-846/8270C, and SW-846/6010B et. al., respectively. Additional confirmational samples will be collected and analyzed if results of field screening or observations or the professional judgment of site personnel suggests that they are warranted.

3.1.4 SEAD 40 Sampling

Confirmational sampling will be conducted at both excavation sites (i.e., man-made drainage ditch and from the area of SS40-2) to verify that TPH contaminated soil have been adequately removed. A minimum of five confirmational samples will be collected from each area excavated. As is shown on Figure 3-2, two of the three planned excavations within SEAD-40 are expected to be 1 foot deep or less, while the third is expected to be 6 feet deep. Based on the size of the proposed excavations and the sampling requirement specified in Subsection 3.1.1, it is currently expected that a total of 22 confirmational samples, plus associated QA/QC samples, will be collected from the three excavations in SEAD-40. At the small excavation surrounding sampling location SS40-2, a minimum of five confirmational samples will be collected (i.e., one from base and one each from each perimeter edge). Similarly, at the small deep excavation (i.e., 10 ft by 2 ft by 6 ft) that is proposed for the top of the drainage ditch, a minimum of five confirmational samples will also be collected (i.e., one from the base, and one each from each sidewall). Finally, a minimum of 12 confirmational samples will be collected from the longest of the proposed excavations (i.e., 110 ft by 2 ft by 1 ft) with one being collected from the narrow (i.e., 2 ft) perimeter end, four being collected from each long perimeter edge (i.e., 110 ft length), and three



LEGEND:

◆ SURFACE BORING SAMPLE

● SOIL BORING LOCATION

TITLE:

SEAD 39
SAMPLING LOCATIONS

PROJECT: TIME CRITICAL REMOVAL ACTION
SEADS 5,39&40 SEDA ROMULUS, NY

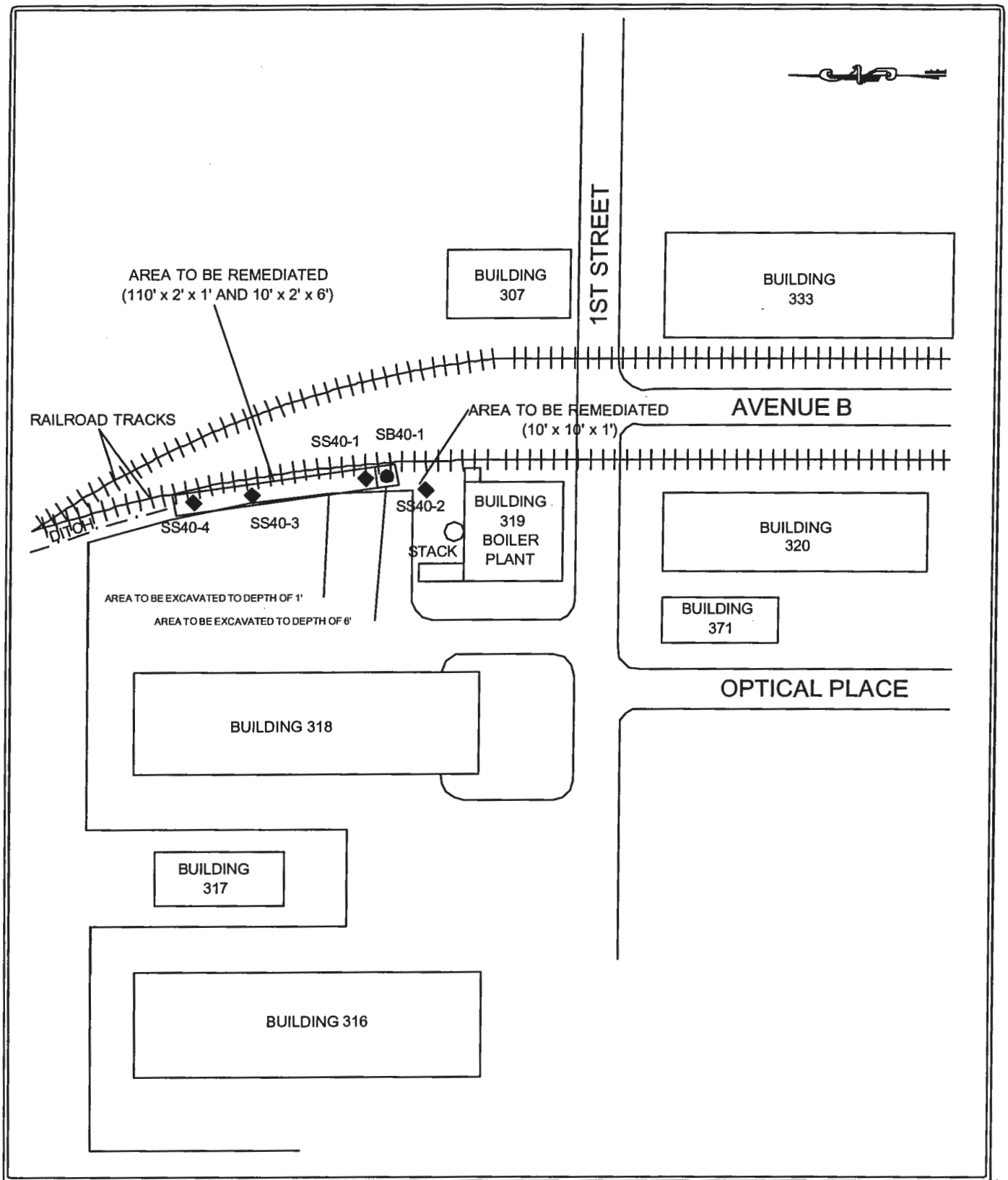
CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST.
CORPS OF ENGINEERS OMAHA,NE

WESTON

DATE: 6-26-03

FIGURE #: 3-1

00691



LEGEND:

◆ SURFACE BORING SAMPLE

● SOIL BORING LOCATION

TITLE:

SEAD 40
SAMPLING LOCATIONS

PROJECT: TIME CRITICAL REMOVAL ACTION
SEADS 5,39&40 SEDA ROMULUS, NY

CLIENT NAME: DEPT. OF THE ARMY OMAHA DIST.
CORPS OF ENGINEERS OMAHA,NE

WESTON

DATE: 6-26-03

FIGURE #: 3-2

00691

being collected from the base of the excavation. No confirmational sample will be collected from the perimeter edge of the extended trench that is shared with the deeper excavation, as this sample is already covered under the samples proposed for the deeper trench. Necessary samples will also be collected for QA/QC purposes.

Additional confirmational samples will be collected from the base of the excavation at a rate of at least one per every additional 900 ft^2 or less of surface area exposed, or for excavations of limited base area but of extended length (e.g., drainage ditch excavations), at least one additional sample will be collected from the base of the excavation for each additional 50-foot length or fraction thereof. Furthermore, additional confirmational samples will be collected for each incremental length extension of 30 ft or less.

The locations selected for collection of confirmational samples will be biased towards sites that are suspected to be contaminated. Each of the confirmational samples will be analyzed for aromatic VOCs (i.e., BTEX), PAHs, and the "RCRA" eight metals by EPA Methods SW-846/8260B, SW-846/8270C and SW-846/6010B et al, respectively. Additional confirmational samples will be collected and analyzed if results of field screening or observations or the professional judgment of site personnel suggests that they are warranted.

3.2 SAMPLING FOR DISPOSAL CHARACTERIZATION

Waste Disposal Characterization samples will be used as the basis for determining if excavation soils, and used personal protective equipment (PPE) meet RCRA requirements for landfill disposal (for solids) or pretreatment standards (for waste water) prior to shipment and disposal off-site. Sampling results will be forwarded to the designated disposal facility for review and confirmation of acceptance.

All excavated material will be directly loaded for disposal off-site. It is anticipated that excavated soil will require analysis at a frequency of one representative sample per 500 cubic yards (yd^3) of material. A number of waste characterization samples anticipated for each location is as follows:

- SEAD 5 2 Samples
- SEAD 39 & 40 1 Sample (composited from each area)

Each sample will be analyzed for toxicity characteristic leaching procedures (TCLP) analyses, if indicated based on mass results compared to the 20 times rule for individual constituents, and various other analytes specific to the disposal facility requirements. These samples will be specifically analyzed for TCLP metals using EPA Method SW-846/1311/6010A, TCLP VOCs using EPA Method SW-846/5035A/8260B, TCLP SVOCs using EPA Method SW-846-3541/3540B/8270C, polychlorinated biphenyl (PCBs) using EPA Method SW-846-3541/3540B/8082, TCLP Pesticides using EPA Method SW-846-3541/3540B/8081 ignitability, reactivity, corrosivity, percent solids, pH and paint filter. Quality Control sampling is not required with waste characterizations sample analysis.

3.3 SAMPLING PROCEDURES

The sampling strategy and procedures were developed to collect quality data to support the objectives described in Subsection 1.1.2 of this CSAP. The following subsections outline specific sampling procedures that will be used when collecting samples during site activities.

3.3.1 Sampling Methods

3.3.1.1 Confirmation Sampling

A figure of the actual excavation limits and sampling locations will be prepared in the field. Specific measurements will be collected including the length, width, and depth (if subsurface excavation) of each removal action. The depth of the excavation will be reported at each corner, and at intermediate locations that are no further than 30 ft apart (based on sampling grid). These measurements will be used to verify sufficient samples were collected from the excavation to reasonably assess whether residual contamination remains in a particular area of excavation. Each sample location will be uniquely identified and placed on the figure.

Confirmation samples will be collected from a depth not less than 1 inch below the excavation's surface and not more than six inches below the base of the excavation. The 1-inch minimum is recommended to ensure that soils exposed directly to the atmosphere, which could result in the offgassing of VOCs, have not volatilized prior to sample collection.

Samples will be manually collected using either decontaminated stainless steel or disposable scoops or spades. A decontaminated stainless steel bowl (or equivalent) will be used for sample homogenization. Samples collected for VOC analyses will be collected first and will be transferred directly from the ground to the appropriate sample container. Samples collected for non-volatile analyses (e.g., PAHs & metals) will be collected and transferred to an inert mixing bowl and homogenized prior to being placed in the appropriate sample container. No field measurements are anticipated for site sampling activities. All analyses will be performed at an off-site laboratory.

3.3.1.2 Sampling for Waste Characterization

All disposal characterization samples from stockpiled soils will be taken as 5-point composite samples. Samples will be collected at a frequency of one representative sample per 500 yd^3 of material.

Samples for non-volatile analysis will be manually collected using either decontaminated stainless steel or disposable scoops or spades. A decontaminated stainless steel bowl (or equivalent) will be used for sample homogenization. Soil samples for VOC analysis will be placed directly into appropriate sample containers to minimize contaminant volatilization. Samples will be collected following excavation activities. The sample technician shall make every effort to collect a sample that is representative of the excavation.

3.3.2 Sampling for Chemical Analysis

In general, all environmental samples will be collected in accordance with WESTON Standard Operating Procedures (SOPs) and with U.S. Army Corps of Engineers (USACE) Omaha District Rapid Response Contract Management Procedures, USACE protocols, EPA, and NYSDEC standards. All confirmation samples will be placed in appropriate sample containers (refer to Table 3-2) for shipment to a certified off-site laboratory. The laboratory SOPs for each analytical method proposed are on file in the WESTON's Manchester, New Hampshire office and will be available upon request.

All excavation confirmation samples will be analyzed within 72-hour turn around time once received at the laboratory. A decontaminated spade or disposal sampling tool will be used to remove any slough from the sample location so that a representative sample can be collected. Once the material has been cleared, the material will be collected and placed into clean and

labeled sample containers. Photographs of, or measurements to, the sample locations will be taken as necessary. Samples will be taken from the field and chilled at 4°C, if necessary, in an on-site refrigerator or placed directly into the coolers for shipment.

3.3.3 Sample Containers and Preservation Techniques

Specific sample containers and preservations will be performed according to Appendix I of USACE Guidance Document EM-200-1-3 and analytical method requirements. Table 3-2 details the required sample containers and preservation techniques for all analyses to be performed during this project.

Table 3-2
Sample Containers, Preservation Methods, and Holding Times

Matrix	Parameter	Container	Preservation/ Solvents	Maximum Holding Times	
				Extraction	Analysis
CONFIRMATION SAMPLES					
Soil	VOC	(2) 40 mL VOA vials w/ methanol & Teflon lid	Ice to 4°C	---	14 days
Soil	TCL PAH	(1) 4 oz clear glass	Ice to 4°C	28 days	180 days
Soil	RCRA 8 Metals plus Cu and Zn	(1) 8 oz clear glass	Ice to 4°C	Digest and analyze within 6 months	
WASTE CHARACTERIZATION SAMPLES					
Soil	TCLP Metals	(1) 8 oz clear glass jar	Ice to 4°C	28 days	180 days
Soil	TCLP VOC	Two 30-mL glass vials with septum top	Methanol – 10 g soil to 25 mL methanol; ice to 4°C	---	14 days
Soil	TCLP SVOC	(1) 8 oz clear glass	Ice to 4°C	---	180 days
Soil	PCB	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days

Table 3-2 Continued

Matrix	Parameter	Container	Preservation/ Solvents	Maximum Holding Times	
				Extraction	Analysis
Soil	TCLP Pesticides	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days
Soil	Ignitability, Reactivity, Corrosivity	(1) 8 oz clear glass	Ice to 4°C	---	---
Soil	% solids	(1) 8 oz clear glass	Ice to 4°C	---	---
Soil	PH	(1) 8 oz clear glass	Ice to 4°C	---	As soon as possible after collection
Soil	Paint filter	(1) 8 oz clear glass	Ice to 4°C	---	---

mL = milliliter
VOA =volatile organic aromatics

3.3.4 Decontamination Procedures

Equipment to be used during this sampling event should be disposable. Any non-disposable equipment (e.g., stainless steel bowls) will be decontaminated between sampling locations using the following procedures:

- Alconox and potable water scrub
- Thorough potable water rinse
- Deionized water rinse
- 10% nitric acid rinse
- Deionized water rinse
- Acetone (pesticide grade) rinse
- Total air dry
- Deionized water rinse

Disposable sampling equipment will be double-bagged and disposed as dry industrial waste. Decontamination fluids containing nitric acid will be neutralized with baking soda prior to disposal.

SECTION 4

DATA QUALITY OBJECTIVES

4. DATA QUALITY OBJECTIVES

The overall QA objective for this project is to develop and implement procedures for field sampling, COC, laboratory analysis, and reporting that will provide accurate defensible results. Specific procedures for sampling, COC, laboratory analysis, reporting data, internal QC, and corrective actions are described in this CSAP. The Data Quality Objectives (DQOs) for this project are defined by the project action limits as summarized in Table 3-1.

SECTION 5

QUALITY CONTROL PROCEDURES

5. QUALITY CONTROL PROCEDURES

A QC program is a systematic process that controls the validity of analytical results by measuring the accuracy and precision of each method and matrix, developing expected control limits, using these limits to detect errors or out-of-control events, and requiring corrective action techniques to prevent or minimize the recurrence of these events. Details for QC procedures can be found in the following Subsections. Quality control samples will be collected and will include field samples, field duplicates, MS/MSD, equipment and trip blanks (as necessary).

5.1 SAMPLING QUALITY CONTROL

5.1.1 Trip Blank

The trip blank is an artificial sample designed to monitor volatile artifacts that may be introduced into the sample during sample transportation. Reagent water is generally used as the trip blank matrix. The trip blank is treated as a field sample and is carried through the analytical scheme. At a minimum, one trip blank should accompany every cooler containing field samples for VOA. No trip blanks will be submitted as part of SEAD 5 activities as VOCs are not target constituents.

5.1.2 Equipment/Rinsate Blank

The equipment blank is an artificial sample designed to monitor artifacts that may be introduced into the sample during sample collection. Reagent water is generally used as the equipment blank matrix and the equipment blank can be analyzed for all required parameters. The equipment blank is treated as field sample and is carried through the analytical scheme.

Equipment blanks will be collected from the stainless steel bowls that may be used to collect confirmation samples and background perimeter samples. No equipment blanks will be collected for the waste characterization sampling or groundwater sampling.

One equipment blank will be collected during each day of sampling activities.

5.1.3 Bottle Blank

No bottle blanks will be collected for this SOW.

5.1.4 Cooler Temperature Blank

The cooler temperature blank is similar to a trip blank except that it is only used to determine whether the appropriate temperature has been maintained. A temperature blank will be included in each cooler being shipped to the laboratory.

5.1.5 Field Duplicates

A duplicate sample is a sample taken under the exact same conditions (same sampling equipment, location, time) as another sample. One duplicate will be taken for every 10 samples for a specific parameter, matrix, sampling procedure, and sampling team.

5.1.6 Matrix Spike/Matrix Spike Duplicates

Quality Control samples collected will include MS/MSDs. One MS/MSD sample will be collected for every 20 field samples.

5.1.7 Quality Assurance Samples

No QA samples will be collected on behalf of the USACE.

5.1.8 Data Verification and Validation Requirements

Method performance relative to accepted laboratory performance will be determined by evaluation of verification samples sent to the off-site laboratory.

- Verification results will be reported with associated field screening results.
- Confirmation results will be evaluated in one or more of the following ways:
  - Relative to the action level. For example, if both results are below the action level, confirmation is positive. If both results are above the action level, confirmation is positive. If both results are at the action level (within a determined acceptance window), confirmation is positive.

- Relative to the laboratory results. For the COCs (primarily VOCs), calculate the percent difference (%D) between the laboratory result and the field screening result.

$$\%D = \frac{(Result_{lab} - Result_{field})}{Result_{lab}} \times 100$$

For VOC analyses, the %D between on-site VOC laboratory screening and off-site laboratory VOC results must be less than or equal to %50.

Data from this investigation will be evaluated by hand in accordance with the following guidance documents:

- USEPA National Functional Guidelines for Organic Data Review.
- USEPA National Functional Guidelines for Inorganic Data Review.
- HW-6, Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review, Revision 12 March 2001.
- HW-22, Validating Semivolatile Organic Compounds by SW-846 Method 8270, Revision 2, June 2001.
- H-2, Evaluation of Metals Data for CLP Program, Revision 11 January 1992.
- USACE. Shell for Analytical Chemistry Requirements, Version 1.0,
- 2 November 1998.
- NYSDEC's Analytical Services Protocol – Category B Submittals.

The data package requested from the laboratory for the analytical determination in soil will contain all data generated during the analysis, including mass spectral identification charts, mass spectral tuning data, spike recoveries, laboratory duplicate results, method blank results, instrument calibration, and holding time documentation. All sample data and laboratory QC results will be requested for soil analyses completed for asbestos and for analyses requested for VOCs via Method 8260B.

Commensurate levels of data validation will be performed on the results and the data packages reported for the proposed analyses. A qualitative review will be completed for the asbestos data. A qualitative review includes an analysis of data completeness, custody documentation, holding

times, laboratory and field QC (as needed), instrument calibrations, and laboratory control sample results, laboratory duplicates, and instrument run logs.

Other analyses will be subjected to full data validation. This includes both qualitative and quantitative review of the items listed in the paragraph above, and an evaluation of laboratory results with instrument raw data. In order to facilitate this type of evaluation, the laboratory will submit sample analytical results, all QC results, and raw data.

No formal data validation report will be prepared, however, the final report will include an Excel spreadsheet with qualified analytical results. Qualifiers to be used are presented in the table below.

Data Qualifier	Definition
J	Laboratory qualifier. Estimated. Detected below the quantitation limit (QL).
E	Laboratory qualifier. Estimated due to significant matrix interferences.
B	Laboratory qualifier. Analyte detected at > QL in the Method Blank and the concentrations in associated samples are <10X the blank concentration.
U	Laboratory qualifier. Not detected.
J^N	Validation qualifier. Estimated due to QC criteria not met according to USEPA-New England (NE) Region I Data Validation Functional Guidelines. N is a chronological superscript.
R^N	Reject data due to QC criteria not met according to USEPA-NE Region I Data Validation Functional Guidelines. N is a chronological superscript.

5.2 ANALTICAL QUALITY CONTROL

5.2.1 Fixed Laboratory Quality Control

Fixed laboratory QC is identified for each analytical parameter in the Laboratory SOPs are on file in the Manchester, New Hampshire WESTON office (available upon request) and the DQOs are summarized in Table 3-1.

5.2.2 Field Analytical Quality Control

No field measurements are anticipated for site sampling activities. All analyses will be performed at an off-site laboratory.

5.2.3 Corrective Action Procedures

5.2.3.1 Field Corrective Action

Field personnel have initial responsibility for monitoring the quality of field measurements and observations. The Site Manager will notify the Site QC Manager and QC Management of any problems that occur that may jeopardize the integrity of the project or cause any project objective to not be met. The USACE-On-Site Representative (OSR) will also be notified of the problem as soon as possible. An appropriate corrective action will be developed and implemented. The project engineer will document the problem, including the cause, the corrective action, and results in the field logbook and daily QC Report. Copies of the logbook will be provided to the Project Manager, Site QC Officer, OSR and QC Management.

5.2.3.2 Laboratory Corrective Action

The analyst has initial responsibility to monitor the quality of an analytical system. The analyst will verify that all laboratory-specific QC procedures are followed and results of an analysis of QC samples are within acceptance criteria. This requires that the analyst assess the corrections of all of the following items as appropriate:

- Sample preparation procedures.
- Initial calibration.
- Calibration verification.
- Method blank result.
- Laboratory control standard.
- Duplicate analysis.
- Fortified sample result.
- MS/MSD and surrogate recoveries.

If the assessment reveals that any of the laboratory-specific QC acceptance criteria are not met, the analysts must immediately assess the analytical system to correct the problem. The analyst will notify the appropriate supervisor and laboratory QA coordinator of the problem and, if possible, identify potential causes and corrective action.

The nature of the correction action depends on the nature of the problem. For example, if continuing calibration verification is determined to be "out of control," the corrective action may

require recalibration of the analytical system and reanalysis of all samples since the last acceptable continuing calibration standard.

When the appropriate corrective action measures have been defined and the analytical system is determined to be "in control", the analyst documents the problem and the corrective action. Data generated concurrently with an "out of control" system will be evaluated for usability in light of the nature of the deficiency. If the deficiency does not impair the usability of the results, data will be reported and the deficiency noted in the case narrative. Where sample results are impaired, the laboratory QA coordinator is notified and appropriate corrective action (e.g., reanalysis, etc) is taken. If reanalysis cannot be conducted, re-sampling may be required.

SECTION 6

SAMPLE CHAIN-OF-CUSTODY/DOCUMENTATION

6. SAMPLE CHAIN-OF-CUSTODY/DOCUMENTATION

6.1 FIELD LOGBOOK

The field logbook should enable the sampling activity to be reconstructed without relying on the collector's memory. Logbooks will be kept in the field member's possession or in a weather proof location during fieldwork. The following items should be recorded in the field logbook:

- Name and title of author, date and time of entry.
- Site location and address.
- Names and responsibilities of field crew members.
- Names and titles of any site visitors.
- Sample collection method.
- Number and volume of sample(s) taken.
- Information concerning sampling changes, scheduling modifications, and change orders.
- Details of sampling location.
- Date and time of collection.
- Field observations.
- Any field measurements made.
- Sample identification number(s).
- Information from containers, labels of reagents used, de-ionized water used for blanks, etc.
- Sample distribution and transportation.
- Sample documentation (e.g., COC record numbers).
- Decontamination procedures.

Additionally, each confirmation soil sample will be described for:

- Soil type
- Color
- Moisture content
- Texture
- Grain size and shape
- Consistency
- Visible evidence of staining or discoloration
- Any other observations (e.g., odors)

6.2 PHOTOGRAPHS

Digital photographs may be taken at the job site as necessary upon approval by USACE and NYSDEC. Photographs will be stored on disk and furnished with the Final Report or to USACE upon request.

6.3 SAMPLE NUMBERING SYSTEM

Each sample collected will be given a unique sample designation. The sample designation will use the scheme outlined in USACE EM 200-1-3. Samples collected during this project will be uniquely identified using the following scheme:

SEAD-AAAA-BB-CC-DDD-EE

The Project Code (SEAD) will remain constant for each sample ID.

The codes A through E are defined as follows:

AA: Work Area

5:	SEAD 5
39:	SEAD 39
40:	SEAD 40

For Confirmation Samples:

BB: Location type

FX: Floor of Excavation

WX: Wall of Excavation

DD: Drainage Ditch

CC: Type of Sample

SS: Soil

DDD: Sample Number (001, 002, 003)

EE: Type of QC Sample

FS: Primary Sample

DP: Field Duplicate

MS: MS/MSD

EB: Equipment Blank

TB: Trip Blank

TP: Temperature Blank

For Other Samples:

BB: Location type

WC Waste Characterization

EB: Equipment Blank

Examples:

SEAD-3940-WC-SS-001-FS

SEAD-39/40, Waste characterization, soil sample, Location number 1, field sample.

Additional sample type/location codes may be added at the direction of OSR. The system for identifying and tracking the samples, associated field data, and the method of relating the data to the proper samples will be recorded in permanently bound and weatherproof notebooks and also in computer spreadsheet format maintained by the field team. Team members will record all information related to sampling procedures, time, field and weather conditions, unusual events, sample descriptions (including sample depth), GPS reading, instrument readings, and COC data. Field documentation will be done in indelible ink.

6.4 SAMPLE DOCUMENTATION

6.4.1 Sample Labels and/or Tags

Sample labels will be consistent with the requirements of EM 200-1-3. Sample tags will not be used. Field personnel will be responsible for identifying, labeling, providing proper preservation, and packaging samples to preclude breakage during shipment.

Every sample will be labeled and labels will include:

- Place of collection (site name)
- Unique sample number
- Sampling date and time
- Initials of sampling technician
- Analysis required
- Method of sample preservation/conditioning
- Designation between grab and composite samples

6.4.2 Sample Field Sheets and/or Logbook

The system for identifying and tracking the samples and associated field data will be recorded in a permanently bound and weatherproof notebook maintained by the field team. Team members will record all information related to sampling procedures as specified in Subsection 6.1. Field documentation will be completed in indelible ink.

6.4.3 Chain-of-Custody Records

Chain-of-custody records provide documentation of the handling of each sample from the time of its collection to its destruction. Weston Solutions, Inc. will initiate sample custody upon collection of samples. Chain-of-custody forms will be completed and placed in resealable waterproof plastic bags and taped to the inside lid of the cooler. The cooler will be sealed with COC seals (a minimum of two signed custody seals on the outside with one on the front and one on the rear of the cooler covered with clear tape). Chain-of-custody forms will be used for recording pertinent information about the types and numbers of samples collected and shipped for analysis. Sample identification numbers will be included on the COC form to ensure that no error in identification is made during shipment. Chain-of-custody procedures shall be carried out in accordance with EPA and USACE Sample Handling Protocol (Appendix F of EM 200-1-3).

6.5 DOCUMENTATION PROCEDURES

Prior to sample collection, labels will be affixed to sample containers using transparent tape. Indelible waterproof ink will be used for all logbook, COC, and sample label entries. Documentation will conform to Appendix F of EM 200-1-3.

6.6 CORRECTIONS TO DOCUMENTATION

All original data recorded in field logbooks, sample labels, COC records, and receipt for sample forms will be written in waterproof ink. If an error is made, a single line will be drawn through the entry and the entry initialed and dated. The erroneous information should not be obliterated. Any errors found in documentation should be corrected by the person who made the entry or by a designated responsible person.

SECTION 7

SAMPLE PACKAGING AND SHIPMENT

7. SAMPLE PACKAGING AND SHIPMENT

Samples will be placed in correctly labeled containers compatible with the intended analysis and properly preserved prior to shipment to the laboratory. Samples will be shipped via overnight delivery to the receiving laboratory.

Each sealed container will be placed in a leak proof plastic bag. As much air as possible will be removed from the bags. Strong thermal ice chests will be filled approximately 3 inches with inert material, such as vermiculite. The Material Safety Data Sheet for vermiculite will be reviewed to verify it does not contain asbestos. Bubble wrap may be used as an alternate packing material. The bagged sample will be placed upright in the ice chests and vermiculite will be added to nearly fill the ice chest. Bagged ice/gel packs or equivalent will be placed on top of the vermiculite to ensure samples are cooled to at least 4 °C.

A COC form will be placed in a waterproof plastic bag and taped to the inside lid of the cooler. Ice chests will be taped shut with strapping tape, wrapped around the cooler in at least two places. Ice chests will be sealed with numbered and signed chain-of-custody seals. This packaging and shipment will be in accordance with EPA and USACE protocols (EM 200-1-3). Prior to shipment, a QC check will be performed by the Site QC Engineer to ensure samples have been properly identified and packaged, and that appropriate documentation (COC) is included with the shipment.

Container sizes and types, preservatives, and holding times required for each media are summarized in Table 3-2. All sample containers will be pre-cleaned and accompanied with a certificate of analysis, which certifies that these containers meet EPA criteria. All certificates of analyses will be kept in the site file for future reference. Containers are received in sealed cartons according to their lot numbers.

SECTION 8

REFERENCES

8. REFERENCES

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